Government of Malawi

Public Sector Investment Programme (PSIP)

PSIP DATABASE (Ver.4)
USER MANUAL
For MDAs/Guests

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(CEPSIP II)

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1. Introduction

As part of implementation of the Capacity Enhancement for Public Sector Investment Programming, a Public-Sector Investment Programming (PSIP) database was firstly developed in the CEPSIP-1 Project[1]. The database system is custom web-based software solution using PHP and MySQL database with a Web front-end. Being web-based, the system is accessible to all on the Government Wide Area Network (GWAN) and Internet users. Actually, the database serves as a platform for submitting project documents and handling other PSIP management processes.

The next phase of CEPSIP-2 project[2] started aiming at the improvement of Database and Manuals/Handbook for PSIP, further harmonization of the process of PSIP, and the capacity building to use improved Database and Manuals/Handbook for PSIP. As one of the activities to attain those purposes, the system was upgraded to Ver.1.1 to reflect the modification of proposal templates for fiscal year 2014/15, as well as the several environmental changes. The second edition covered those system modifications applied until March of 2014, where the submission of Word Proposal Template was employed.

The next version 1.5 was launched after the proposal templates for fiscal year 2015/16 was released. The design and system structure followed the ver.1.1, developing new mechanism of Excel Template Proposal for the submission together with other new functions.

The PSIP Database was upgraded to ver.2.0 released on December 2015, in line with the new proposal templates fiscal year 2016/17 where the additional new features to support appraisal decision procedures and quarterly report managements were introduced. This version applies the whole refactoring of the system (mainly database and program structure), to be able to get the better maintainability, scalability and flexibility, which means that the upgraded version enables to respond to the flexible and quick modifications according to the organizations or business requirements. The design of the screens on the Web has been completely renewed as well for the better user interface.

On September 2016, the version was upgraded to 3.0 after the Excel Proposal Template ver3.0 was released. In new version, the information that had been managed until then individually or somewhere in local storage was integrated into the centralized database. This centralized management of information dynamically improved the PSIP staff's business process by hand to systematic one. With this version, the submitted proposal by MDA user

[1] CEPSIP 1; Capacity Enhancement in Public Sector Investment Programming Phase I (from July 2009 to July 2011)
[2] CEPSIP 2; Capacity Enhancement in Public Sector Investment Programming Phase II (from March 2013 to September 2017)

is appraised on the Web to make quick decision, what discussed in the ministerial meeting is all recorded in the database effectively to support the appraisal and the ability to make budgetary transitions. Further, as MDA user support, the extension request submitted by MDA user or feedback of the appraisal is visible on the Web.

In the 2018/19 fiscal year, the database will now start using the new version 4.0, released on August 2017. This new version focuses on providing better feedback to the MDA users with the valuable information such as the result of the requested project extension. The submitted reports by MDA users such as Project Extension Request or Completion Report is displayed as well on the Web page with the same Excel format. Regarding the budget, the requested amount and approved budget can be traced on the Status & Budget screen for your reference.

2. What is PSIP Database

2.1 Overview of PSIP Database

The overall objective of the PSIP is to facilitate efficient utilization of Malawi's human, natural, physical and social resources to improve the country's economic prospects and further development of public services. This objective is attained through a careful and thoughtful process of planning and management of development projects across the sectors.

To achieve this objective, PSIP provides a mechanism that screens and confirms public investments projects to ensure that they are in line with the priority areas of the MGDS and that the implementation of such projects is done in the most cost effective and efficient manner. The PSIP Database tool was developed to contribute to the PSIP Unit and stake holders to achieve this goal.

All MDA users are required to submit their proposed development projects to the PSIP Unit under Development Planning Division of the Ministry of Finance Economic Planning and Development (MFEPD) during the budget preparation process. The PSIP unit validates these project proposals. After the deadline of PSIP proposal submission, a series of ministerial meetings is convened where Ministries present their project proposals. The proposals are screened by MFEPD; this process involves discussions with line ministries so that programs/projects that do not conform to ministerial, sectoral, or national goals and objectives are not accepted for inclusion in the PSIP. The project proposals are analyzed and then are either approved, rejected or referred back to line Ministries for further refinement.

The database system allows MDA users to submit their proposals electronically through an Excel Template file which data is later stored systematically to the Database by PSIP Unit staff. The submitted proposal is expected to permit MDA users to search and list all the projects that are presented to the PSIP Unit and even view details pertaining to projects that are

implemented, ended, rejected, pipelined or terminated including the information in the past. The Monitoring and Evaluation Unit will easily link and correspond with the Development Planning Division since they can all access and refer to the same database. This will minimize problems that may arise due to lack of adequate information when monitoring and evaluating projects by the Malawi Government. Furthermore, this process will not only reduce the time it takes to submit, approve and monitor projects, but also decrease a lot of redundancies and human errors that were found in the previous manual system.

2.2 The roles of MDA

The planning section of each ministry plays a leading role in PSIP formulation at the line ministry level. By following the PSIP guidance, the planning section facilitates the compilation of data through the pre-designed template on the PSIP database, consolidates and submits the proposals to MFEPD. Then the MFEPD and the planning section of each line ministry have meetings to decide the project list to be included in the PSIP while considering the allocation amount of the development budget to each project within a given ceiling figure. The compiled data from line ministries is then submitted to MFEPD.

3. System Requirements

The following table shows supported versions and conditions of the system.

Table 1: System Requirements

System	version	Remarks
Excel Proposal Template	ver. 4.0 or higher version	
Operating System	Windows 7 or later version	
PSIP Database Web	ver. 4.0 or higher version	
Proposal Loader system	ver. 4.0 or higher version	
Proposal Generator system	ver. 4.0 or higher version	
Browser	• Internet Explorer 10 or later • FireFox higher than ver.45 • Chrome higher than 49	- JavaScript must be enabled. - Pop up windows should be enabled.

This document assumes that the computer system has connection to the GWAN network or has direct internet connection to use PSIP Database application.

3.1 Intended Audience

This document is intended for personnel involved in the PSIP process which includes planning units of all the sectors of Government of Malawi, the planning unit and Monitoring and evaluation section of Ministry of Financial Economic Planning and Development (MFEPD), Project Management Units (PMU), the budget Division in MFEPD and the Steering Committee

of CEPSIP. Any other stakeholders such as donors are also available as GUEST user with some limited use of functions.

4. Access to the System

You can access to the system by the following URL address.

Table 2: Access to the system

	URL address	Type of connection	Who can connect	Observations
1	http://psip.malawi.gov.mw	- Internet -GWAN intranet connection	- who has Internet connection - who connects to the GWAN network with Intranet connection - who connects to the JICA network at PSIP office	If your network is GWAN or JICA Wi-Fi connected, the connection will be made by Intranet. If you are out of GWAN having your own Internet connection from outside (such as Airtel Malawi), the connection will be by Internet.

4.1 How to access to the PSIP Home Page

Enter the above URL address to your browser either by Internet or Intranet connection according to your environment.

1) Open your browser (Internet Explorer, Firefox or Chrome)
2) In the address bar of the browser, type in;

http://psip.malawi.gov.mw

This will be immediately redirected to the secure page "https://psip.malawi.gov.mw" as seen in the Figure below.

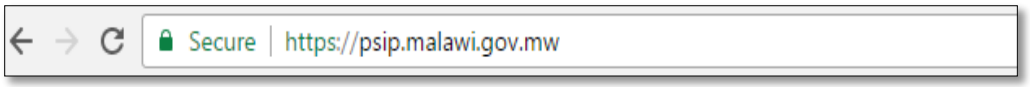


Figure 1: Address bar

[note] The difference is that what you enter is normal http protocol. The system immediately redirects to "https" secure protocol where all the information is encrypted to protect your data.

3) This address takes you to the PSIP home page as seen below.

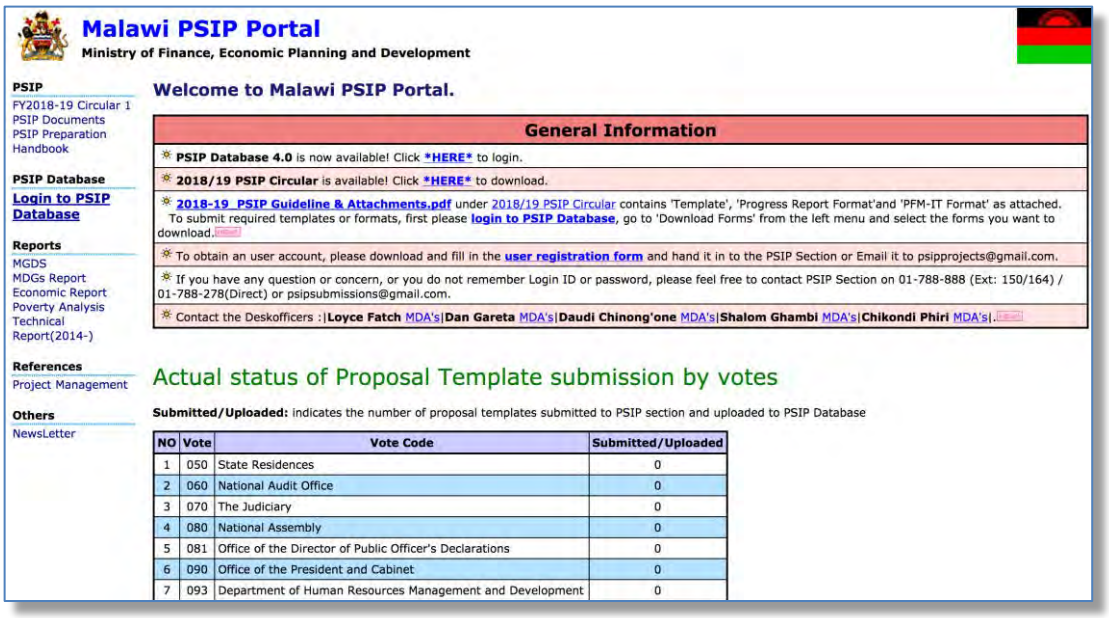


Figure 2: PSIP Home Page

This page has a menu on the left pane which will allow users to navigate easily from one page to the other. The home page is available for all users; in fact, no authentication is required to be able to obtain useful public information such as several manuals, reports and handbooks. On the main page the general information also shows some messages to the visitors.

Below the general information, actual status of current Fiscal Year Proposal Template submission by votes can be viewed by all visitors. This represents the number of projects proposals sent by each vote.

4.2 How to access to the PSIP Database

To use the PSIP Database system, you are supposed to be authenticated in the database as a user having Login ID and password registered beforehand.

1) To enter the database, click on 'Login to PSIP Database' from the left menu.

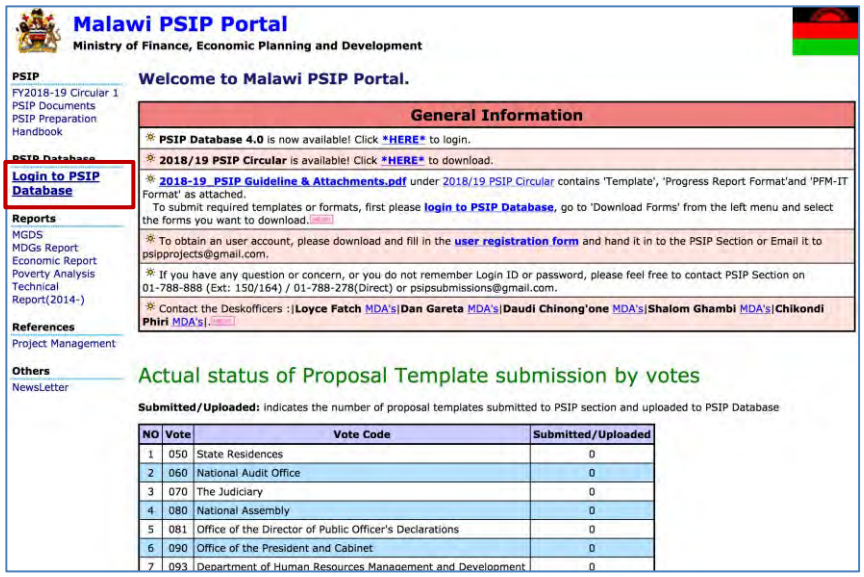


Figure 3: How to access to the PSIP Database

2) A page will pop up requesting to enter a password and username.

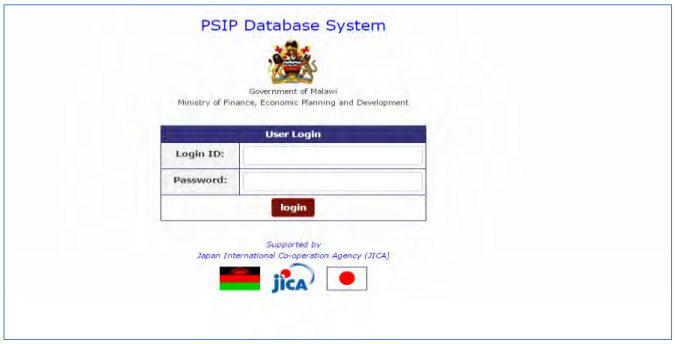


Figure 4: PSIP Database Login Screen

All users of the system are required to input Login ID and Password. When a user logs in, a connection called a session will be created. The session will be expired and require the user to log in again, if the user stays idle, that means, if the user does not click the submit button nor react for certain session maximum time.

[Note] Be careful that Login ID and Password are case sensitive, i.e. "**U**ser" and "**u**ser" are not the same.

If the login authentication is successful, it takes you to the top page of announcement of PSIP Database.

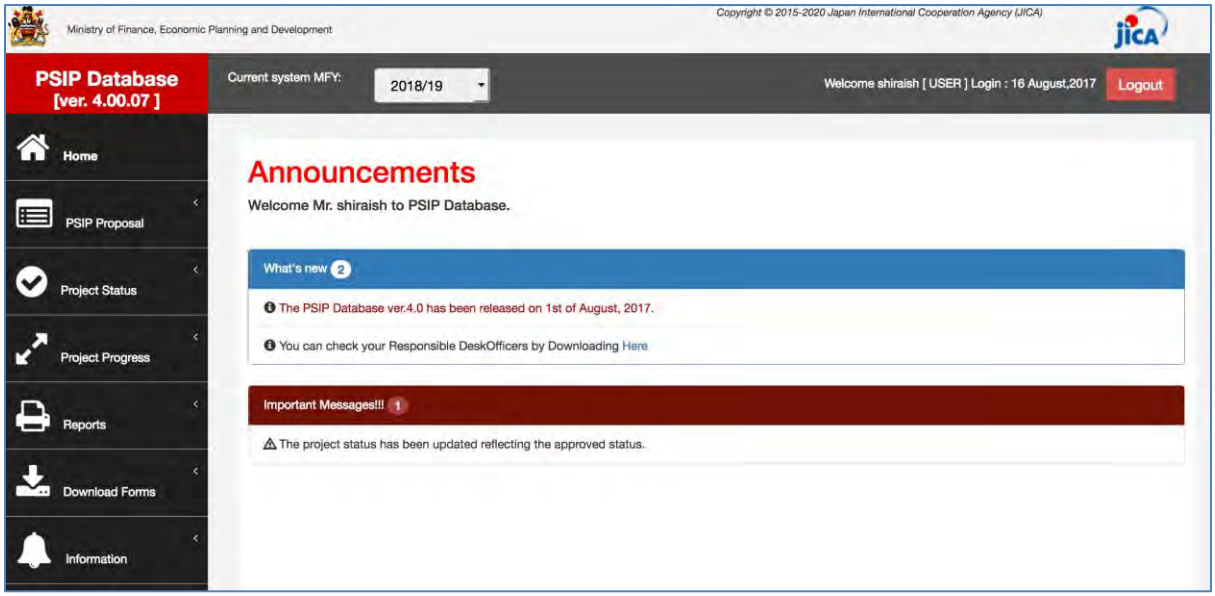


Figure 5: Announcements screen

4.3 How to obtain Login ID

A user is required to submit a User Registration form in Annex 1 to the PSIP Unit to obtain the Login ID. This form can be downloaded from the PSIP portal top page. After you fill in your profile and password, send it to the PSIP Unit who will register your account to the Database and provide you the temporary password. The first time your login, you are required to enter this temporary password and change it to new password.

5. PSIP Database features and functions

Let's see the main functions displayed on the menu of the left pain of the window. The menu has the submenus shown when you click the item.

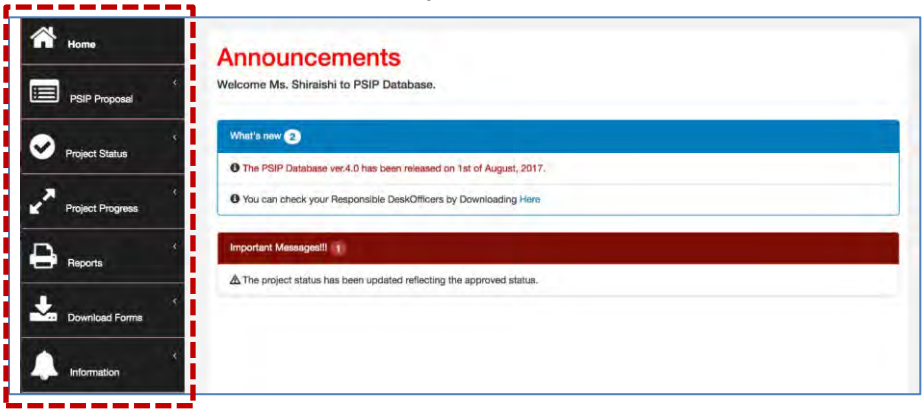


Figure 6: Database Menu

5.1 Home/Announcements

After your successful login to the system, the Announcement page of PSIP Database is on top. It displays the latest news and useful information regarding the PSIP activities and the system. It may sometimes display warning messages individually to your Ministry. It is

therefore recommendable for the user to every time check the announcements before using the system. The page also displays a feature of Desk Officers where you can download and see your PSIP desk officer.

5.1.1 View names of PSIP Desk-officers and their rensponsible MDA Portifolio

To view the names of PSIP Desk-officers and their MDA portfolio, click on the pop up in the announcements screen, which will navigate to matrix window of desk officers.

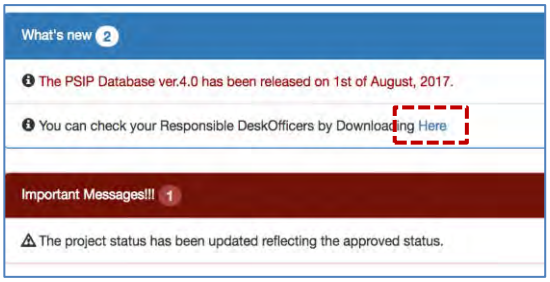


Figure 7: Announcements Screen

5.2 PSIP Proposal

PSIP Proposal menu contains the information regarding proposals, such as Project Proposal details, Summary of the submitted projects and Submission status of the proposals by MDAs.

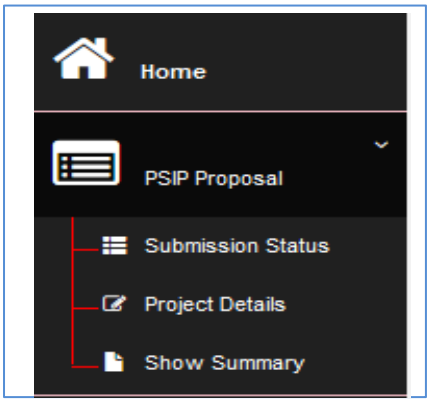


Figure 8: PSIP Proposal submenu

5.2.1 Submission Status

All the projects are shown in the Submission Status list presenting the submission and uploaded status.

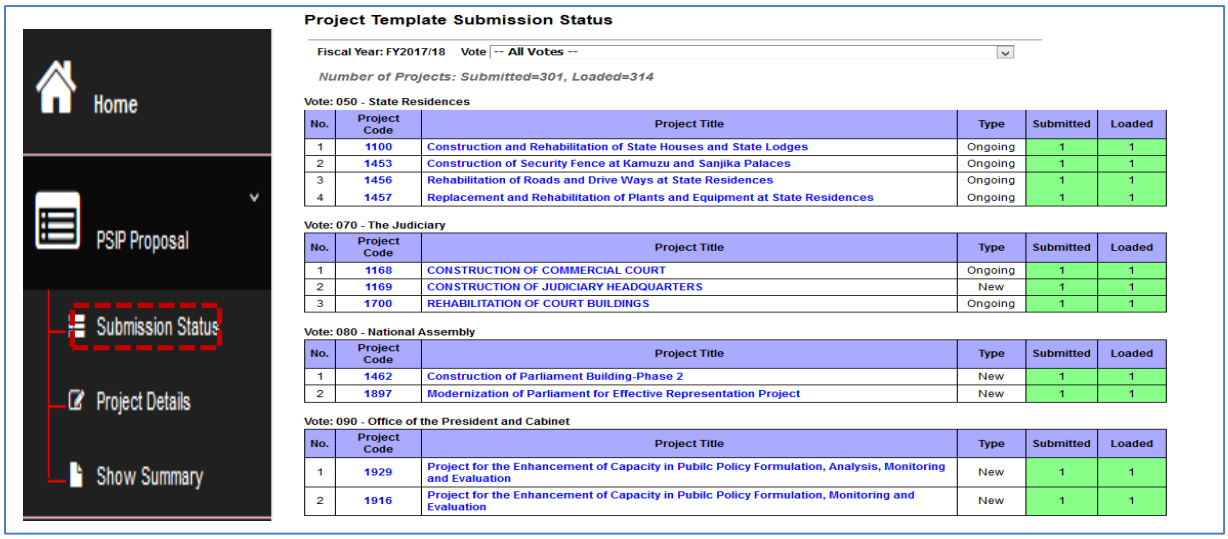


Figure 9: Submission Status screen

The number "1" on the corresponding column means that it is already completed on each status. There are following two status of the submission.

Table 3: Status of the submission

Submission Status	Meaning	Remarks
Submitted	The proposal is submitted by the vote.	
Loaded	The proposal is uploaded to the database by the PSIP unit.	

This list can also be used to confirm if your proposal is correctly stored in the PSIP database.
[note] This screen is visible only for MDA users, and not available for GUEST users.

5.2.2 Project Details

Project details will list the submitted project proposals, by selecting FY, Vote in a drop-down list or project status.

1) Select the conditions to list the projects

MFY; select the FY you are interested in. You can select not only corresponding year, but past proposals are also available.

Vote; choose the vote which project you want to filter.

Status; check/uncheck the project status to filter the projects. i.e. ending, completed and new.

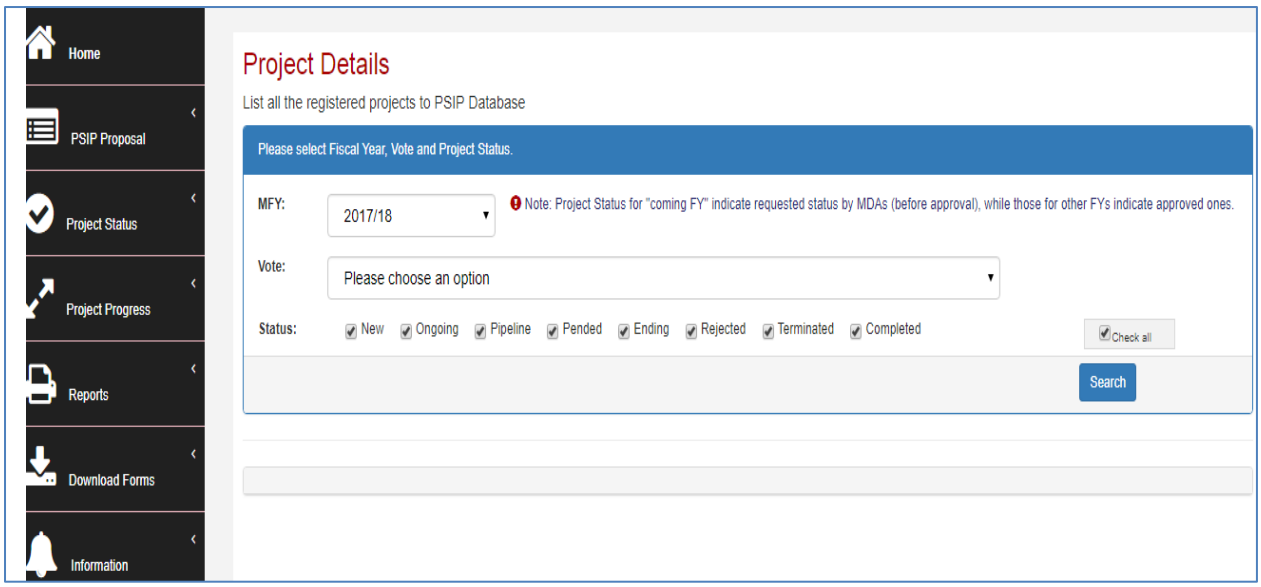


Figure 10: Project Proposal List search

2) Press the Search button and the corresponding projects are shown according to your conditions with the number of rows. The project status is also displayed in the list.

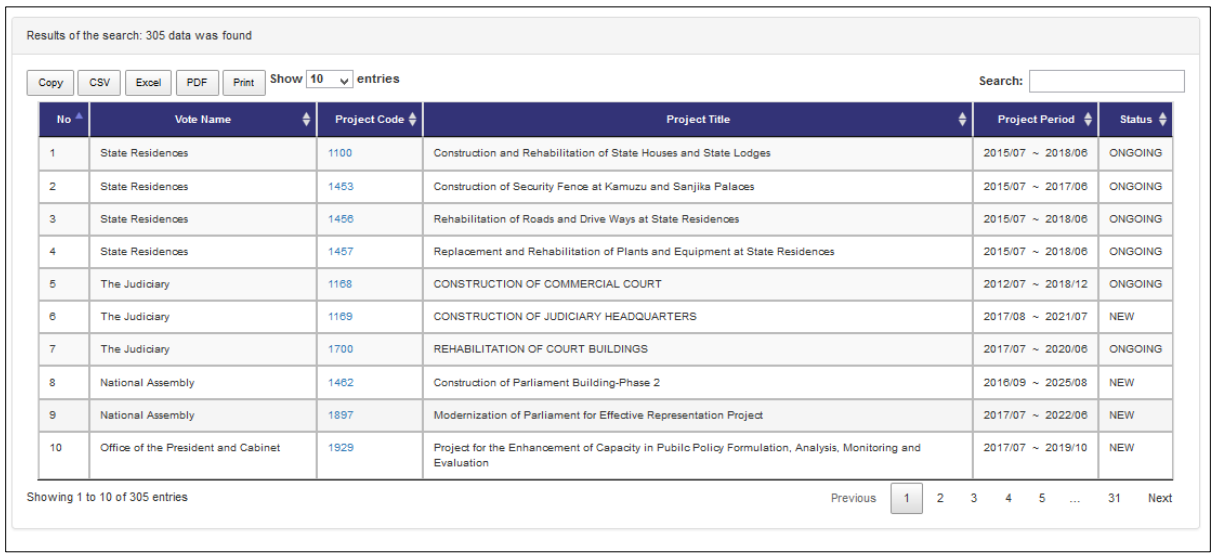


Figure 11: Project Proposal List

[note] As a default, all the status is selected. If you want to unselect all, uncheck the “Check all” checkbox.

[note] Project Status for "coming FY" indicate requested status by MDAs (before approval), while those for other FYs indicate approved ones.

3) Other useful functions

- **Search by keyword**

After you list all the projects, if you want to filter more in detail with some keywords, enter the word into the “Search” textbox, and only the projects that hit with the corresponding keyword will be listed on the table.

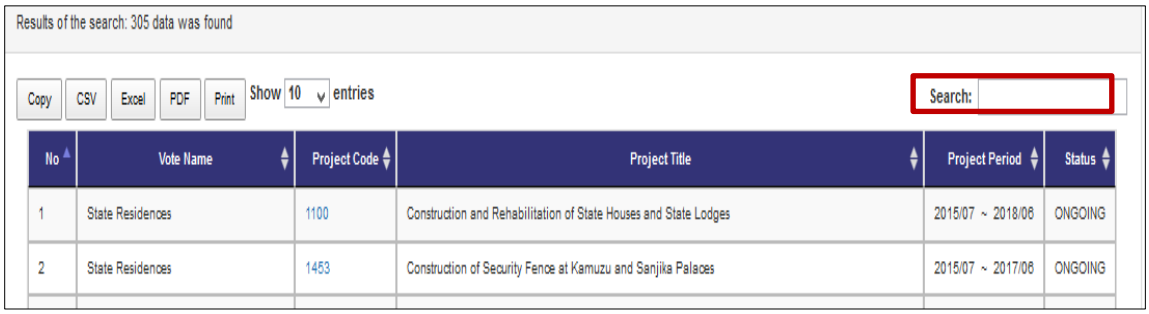


Figure 12: Search by keyword

- **Sort on the title of the table**

You can sort the list table clicking the title (No, PSIP Code, Title, Type, etc.).

Figure 13: Sort function

- **Print function**

By clicking the printing function button, you can print the filtered table to print image, PDF, CSV (Excel) or “Copy and Paste” to where you want.

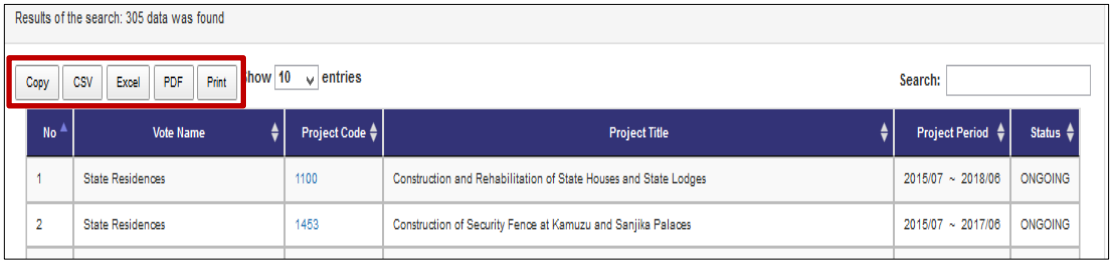


Figure 14: Print function

- **Show entries function**

By selecting the Show entries button, you can specify the number of projects appearing on screen e.g. 50,100,200 or all.

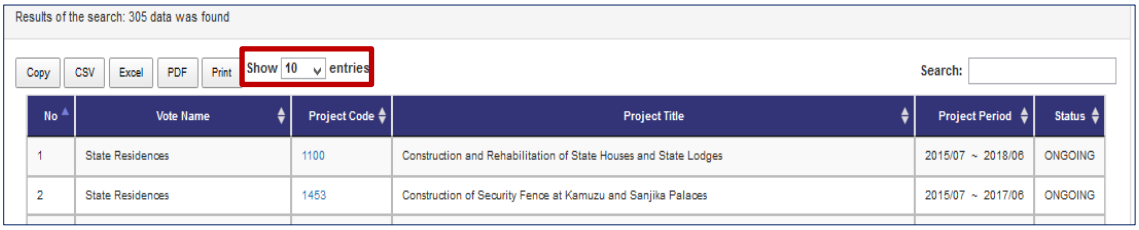


Figure 15: Show entries function

5.2.3 Project Detail Information

By selecting the Project Code on the list, it takes you to the project detail information page. Project Detail Information is grouped into several tabs. Clicking on the tabs will open a corresponding page according to the project status. New Project Registration has tabs namely General Info / Outline / Total Project Cost Matrix / Annual Project Cost Matrix / Financing/ Monitoring Evaluation/Proposal Applied FY/Project Management Structure, while On-going project has tabs; General Info / Outline/Project Performance / Annual Project Cost Matrix / Monitoring Evaluation / Proposal Applied FY/ Project Management Structure.

Basically, the contents displayed in the Project Details are the same as Excel Template format. On the top of the page the title, the status and selected year are always visible.

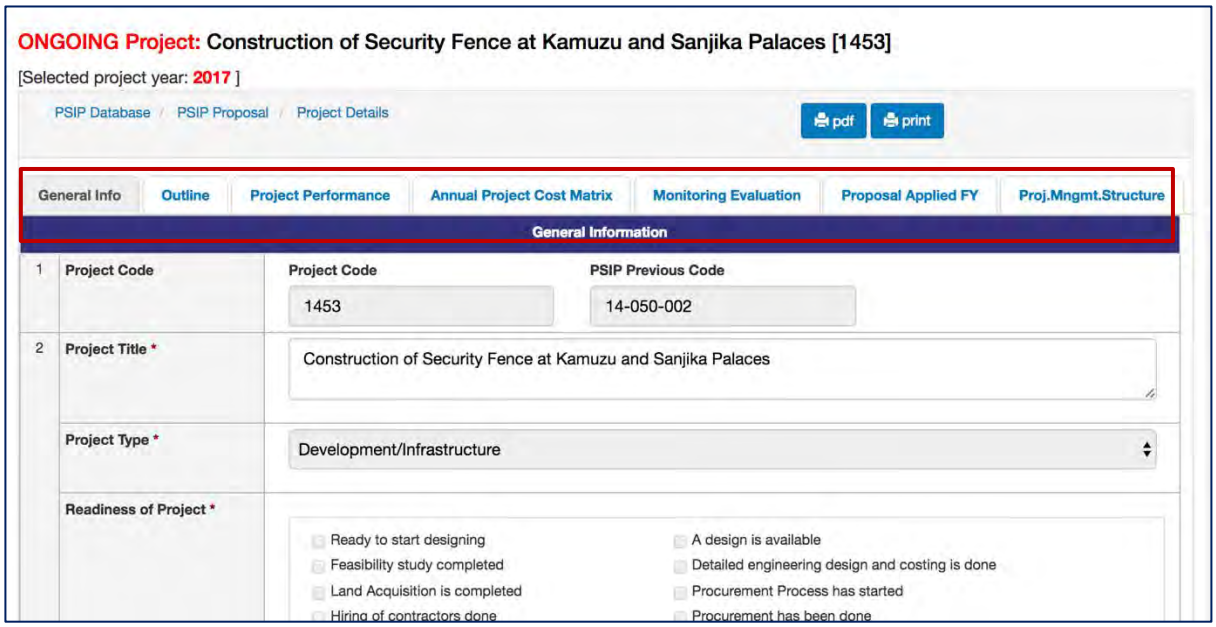


Figure 16: Project Detail screen

Print output function is available in each page with PDF format and Print image.

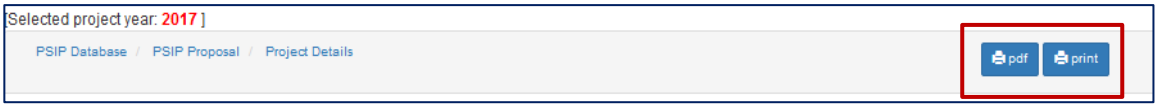


Figure 17: Print function in Project Detail

5.2.4 Show summary

Instead of displaying the specific proposal information one by one, you can list all the projects in one table summarizing the submitted proposal information.

1) Go to PSIP Proposal-> Show summary from the left pain menu.

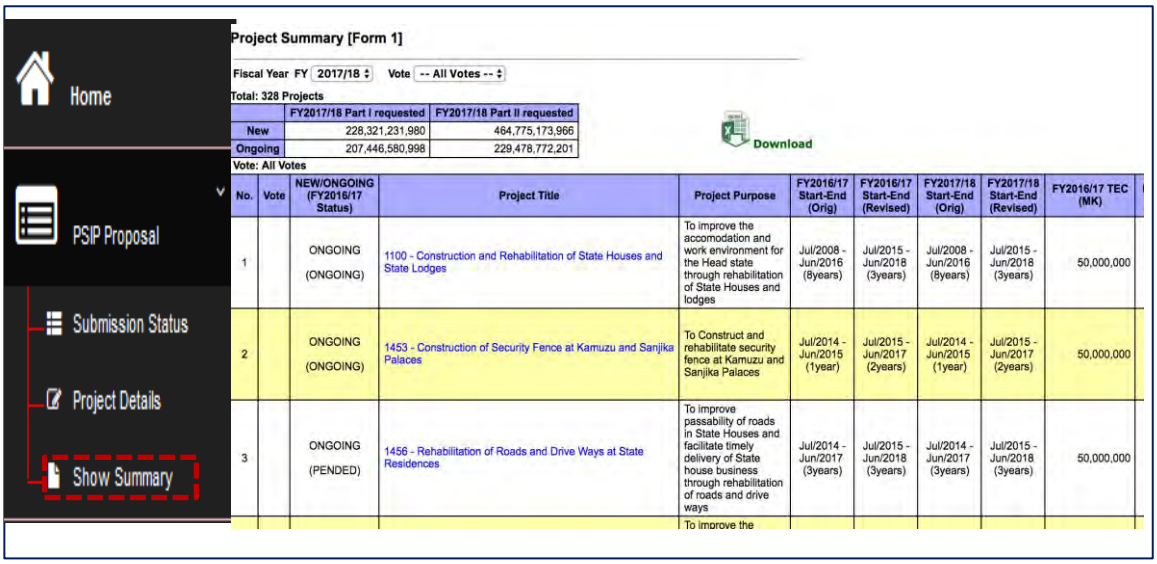


Figure 18: Show summary screen

This summary list is quite useful to compare all the projects since it shows TEC, Funding of the recent two years, information of donors and contacts at once.

2) To get the summary list in Excel format, you can click “Download” icon.
[Note] The project summary is one of the main tools for the appraisal. Be careful that if your proposal is not found here, it means that the project may be excluded from the appraisal. If your submitted project is not found in spite you have sent it to the PSIP unit, please contact to the PSIP staff.

5.3 Project Status Menu

5.3.1 Status & approved Budget

The Status and Approved Budget submenu shows the list of results of project status, approved budget, the appraisal decision, submission status and mid-year revision budget.

1) Specify the financial Year FY, Vote and Status as search conditions
2) The projects that meet the search conditions are listed in the table

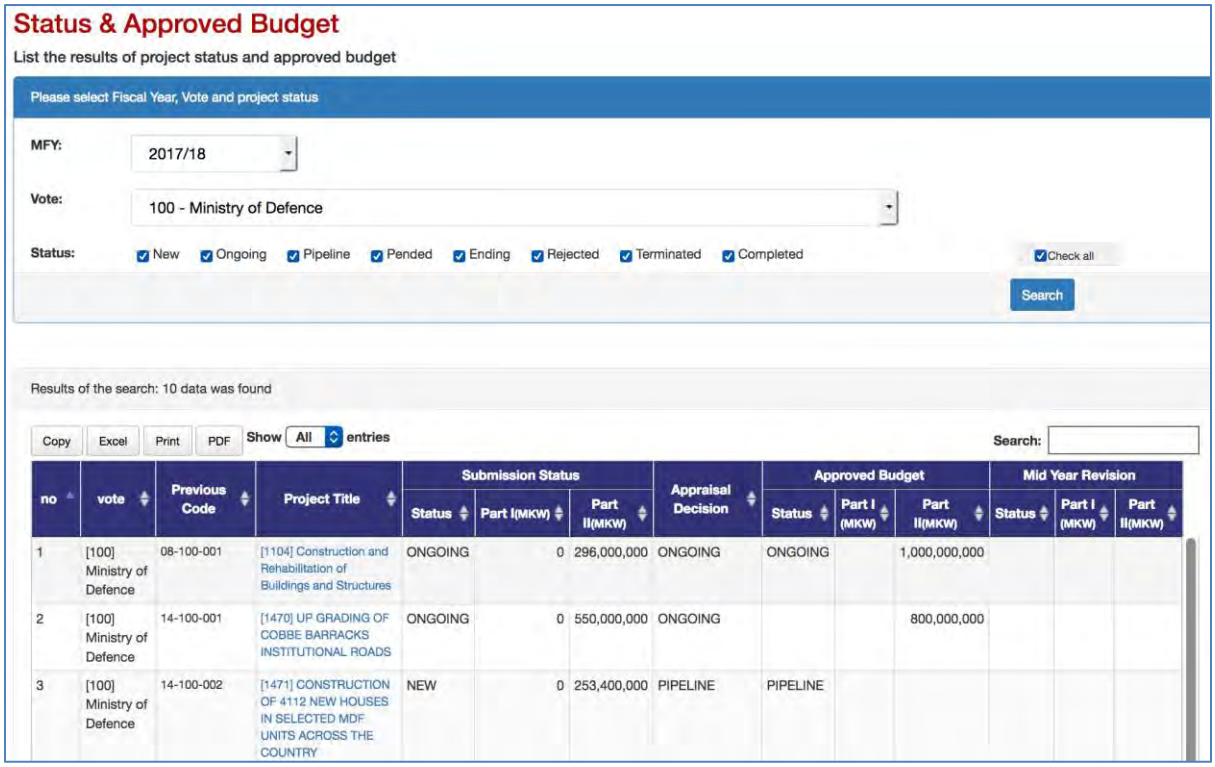


Figure 19: Status and Approved Budget screen

The appraisal decision made by PSIP desk officer is shown in the appraisal decision column. First of all in the appraisal decision, the project has the proposed status submitted by MDA users through Excel Proposal Template. Then the status will have the result of appraisal. The following figure shows how the transition of the status of New, On-going and Pipeline goes.

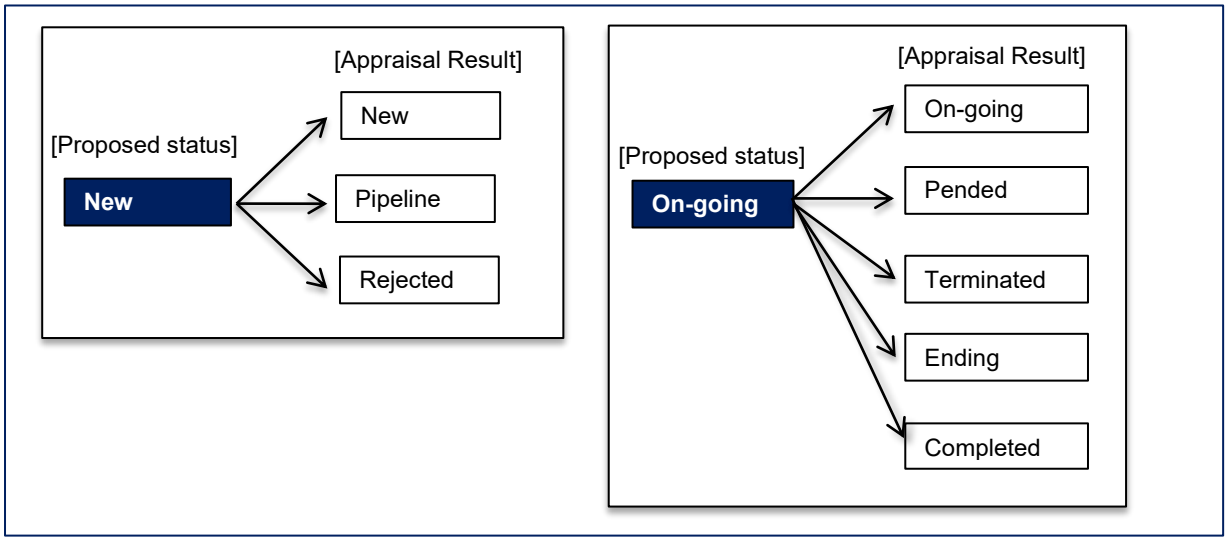


Figure 20: Transition of Project Status

The Proposed status by submission is set as project status after the proposal submission of the projects by MDA users. After the appraisal, its decision is set around mid-February overwriting the original status. The approved status column after the Parliament is inserted

into the table as shown in the figure below. This means that the approved status column represents the decision of the project which will be set around August.

Submission Status			Appraisal Decision	Approved Budget			Mid Year Revision		
Status	Part I(MKW)	Part II(MKW)		Status	Part I (MKW)	Part II(MKW)	Status	Part I (MKW)	Part II(MKW)
ONGOING	0	400,023,956	ONGOING	PENDED					
ONGOING	0	299,824,000	ONGOING	ONGOING		100,000,000			
ONGOING	0	2,232,850,000	PENDED	PENDED					
ONGOING	0	887,723,364	ONGOING	ONGOING		300,000,000			
NEW	0	0							

Figure 21: Four status of the project

5.4 Project Progress

5.4.1 Project Quarterly Progress Report Status

As a reporting function, you can list all the status of Project Quarterly Progress Report selecting the year and vote. All the projects with project status “On-Going”, “New” or "Ending" is retrieved according to your specified filter, showing which quarterly period of the report is already submitted and which is yet pending.

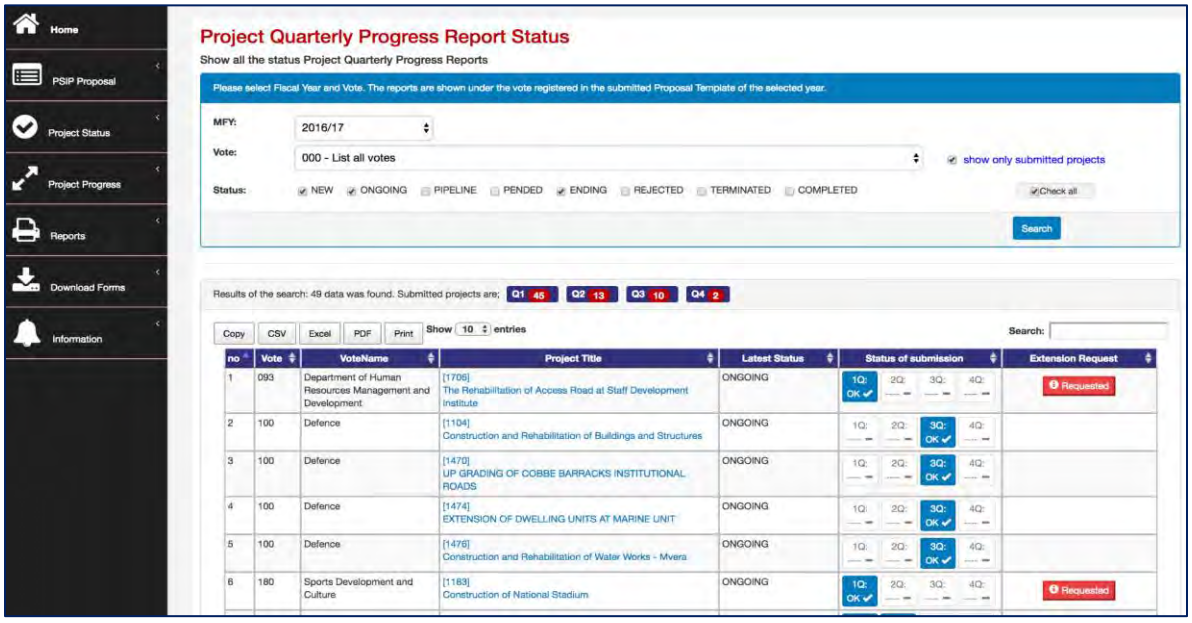


Figure 22: Quarterly Progress Report screen

[note] The MFY will be selected with the year of the project which Quarterly Progress Report corresponds to. For example, if you submit the report for year 2016/17 project, select the year

2016/17 and the table shows all the 2016/17 projects that are supposed to submit report with project status New, Ongoing, Ending checked as a default.

If “show only submitted projects” checkbox is checked, only project who submitted Quarterly Progress Report will be listed.

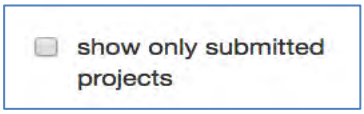


Figure 23: Show only submitted projects check button

The result of the search will be displayed after the search button is clicked with the specified conditions. The red number in the square represents the number of submitted reports each quarter.

5.4.2 Report Detail

If the report is submitted, you can click the blue OK button

to see the detail of the report corresponding to the project. There are tabs such as Main, Project Performance, which information is the same as Excel Project Quarterly Report. Please refer the Excel Manual for the detail information.

5.4.3 Extension Request

The submitted Extension Request information is available selecting "Extension Request" tab on the Quarterly Progress tab. The content is displayed with the same information as Excel Format.

5.4.4 Completion Report

If the project is completed and the report is submitted by Excel format, the content is also displayed on the "Completion Report" tag.

5.4.5 How does the system decide if the report is submitted or not

The system employs the following two conditions to see if the quarterly report is submitted.

- It checks if information on finance issues/ performance issues/ actions/ others is/are not empty.
- All above issues are empty but performance is not empty.

5.4.6 Feedback of Extension Request

On the Extension Request column, the "Requested" or "Show Result" button is displayed if the project has submitted the extension request.

The red "Requested" means that the project has submitted the request, while the green "Show Result" represents that the result is already done.

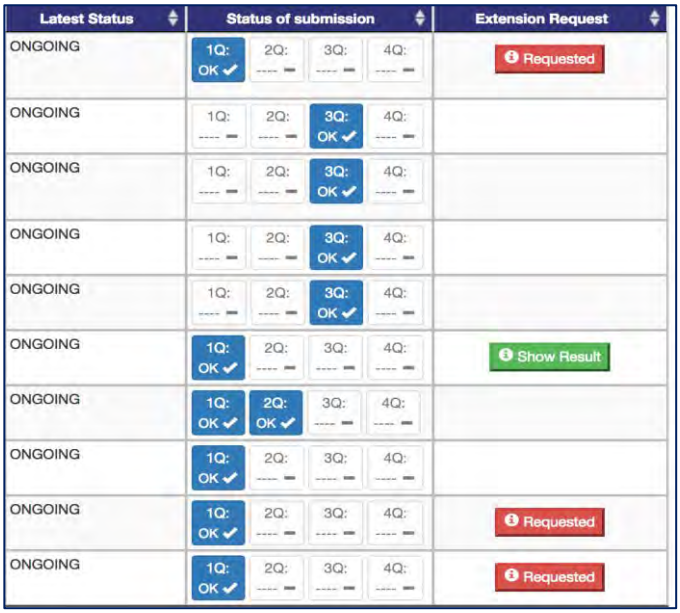


Figure 24: Extension Request feedback

Clicking the button shows popup window where you can observe the detail of the request and its result.

Figure 25: Detail of the extension request

5.5 Reports

5.5.1 Project List

This function shows the project summary based on the TEC and Donor by specifying the responsible ministry and MDA.

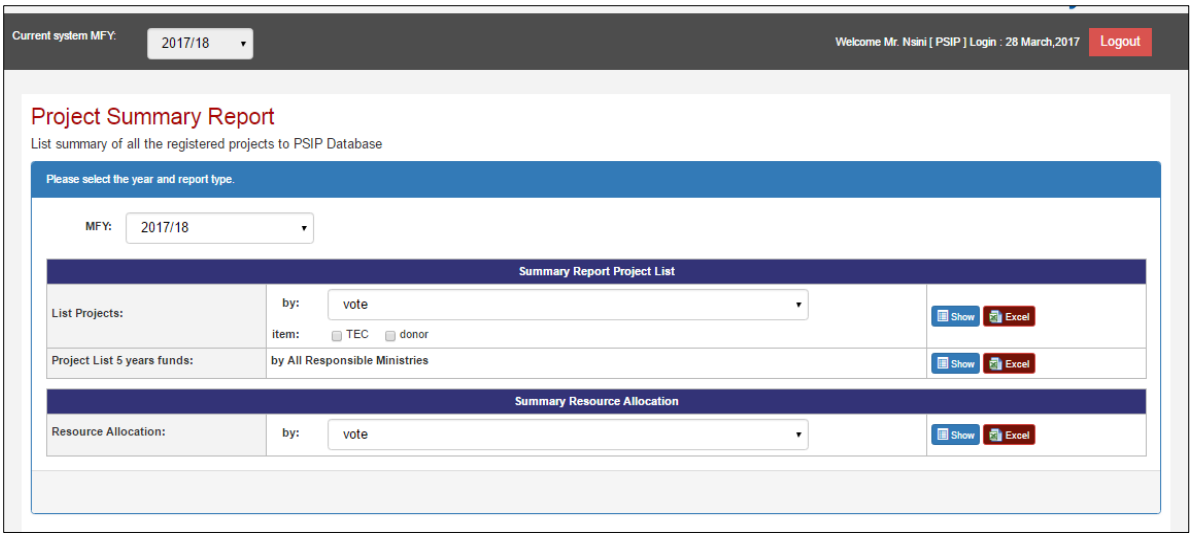


Figure 26: Show project summary report

To view by Vote, select MFY, the vote, check on the TEC or donor, then click show button. Once that is done, the table below is shown.

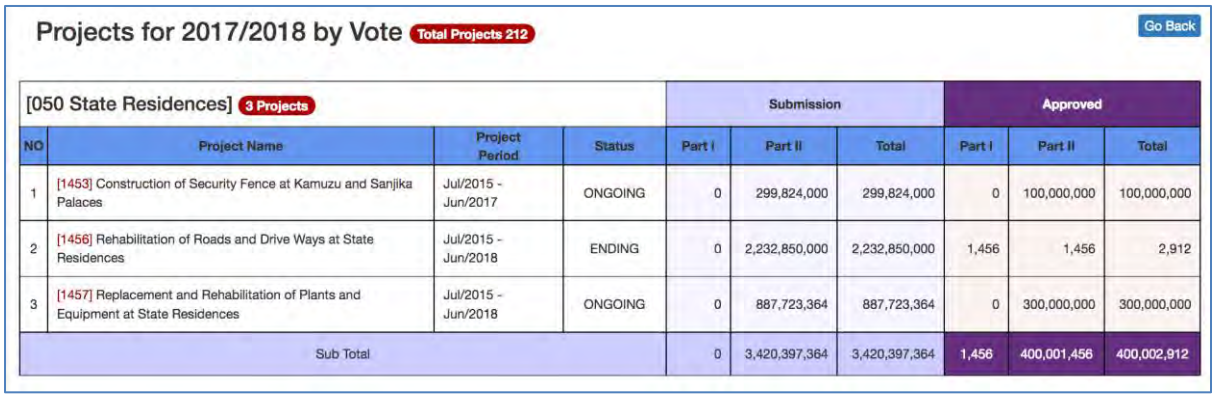


Figure 27: Show project summary

[Note]

When the MGDS Theme or Priority is selected by user, the grand total does not match as the whole project grand total, since there are projects which do not have the MGDS Theme or Priority.

[Note]

If you are using **Microsoft Office 2013/2016** or **Office 2010** versions, when downloading the report, you might have noticed the problem of protected mode which disables to display the contents. Whenever you try to open an Office document (Word, Excel or PowerPoint file) which was downloaded from Internet or was attached in an email, Microsoft Office program opens it in **Protected View** which is also known as **Read Mode** or **Restricted Mode**.

You can turn off Protected View feature in Office 2010 or Office 2013/2016 version, check out following simple steps:

1. First launch any Office program such as Microsoft Word and then click on File menu present in the ribbon.
2. Now click on Options tab present in the left sidebar.
3. It'll open Options window. Now click on "Trust Center" tab given at the end in left-side pane and then click on "Trust Center Settings" button.

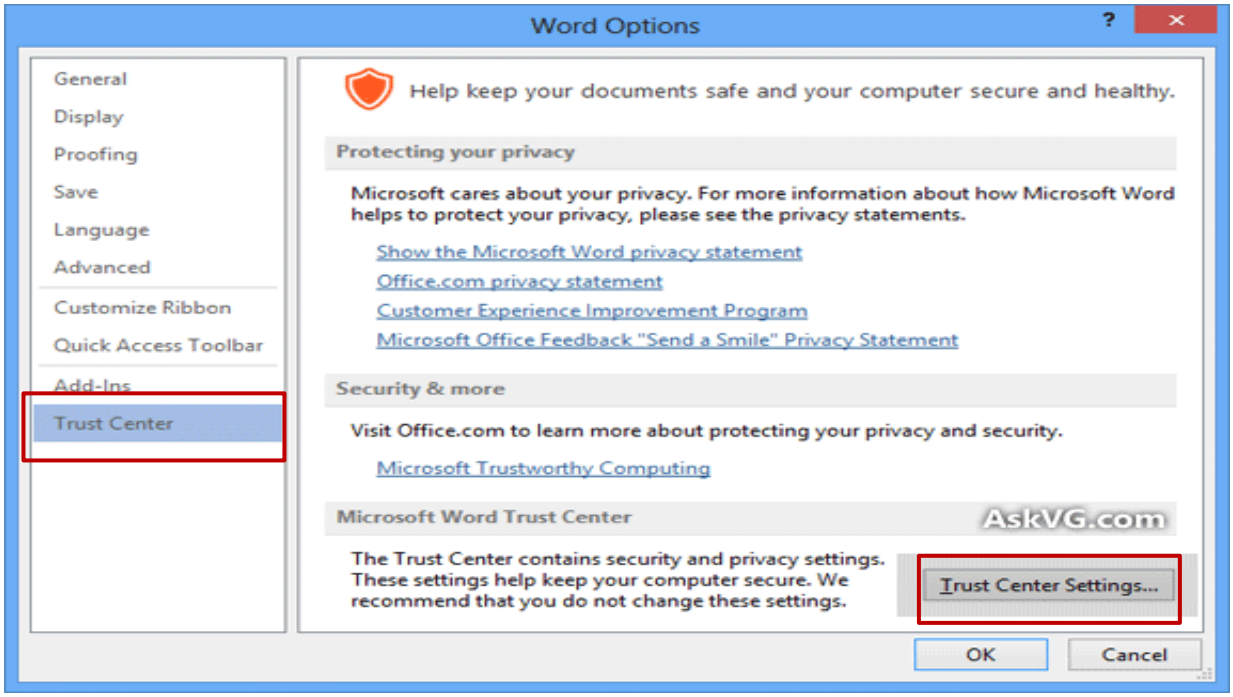


Figure 28: Show protected view window

4. Click on "Protected View" tab and in right-side pane, you'll see following options:
   "Enable Protected View for files originating from the Internet"

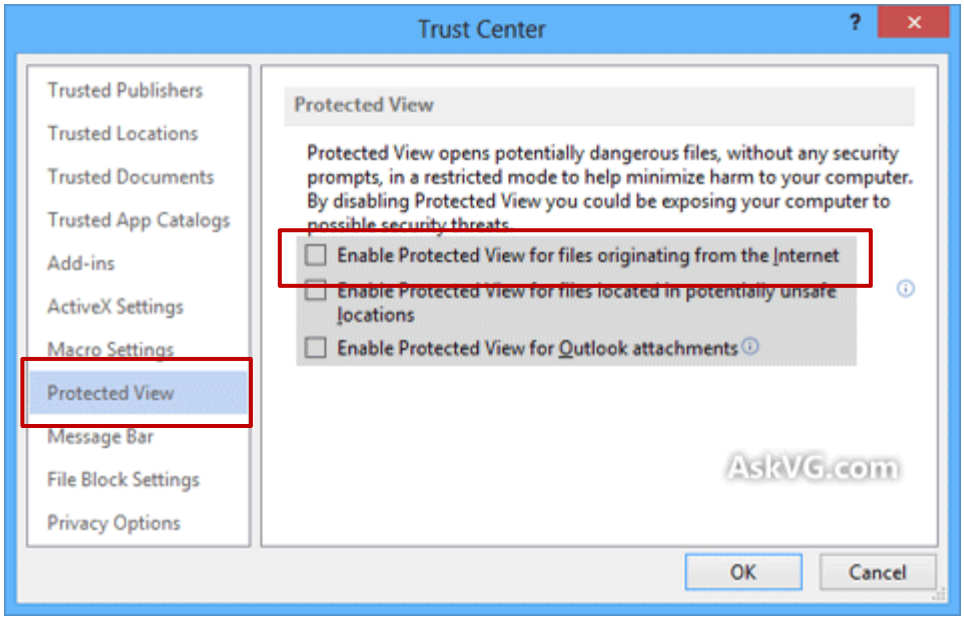


Figure 29: Show trust center window

5.6 Download Forms

MDA users can download Project Proposal for;

- New Project Proposal (Blank format)
- New Project Proposal (Pipeline project)
- On-going Project Proposal
- Quarterly Progress Report
- PFM-IT

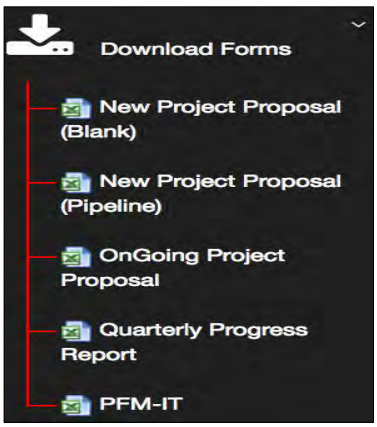


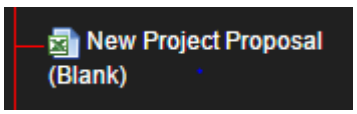
Figure 30: Shows sub menus of download forms menu

[note] This download menu is visible only for MDA users, and not available for GUEST users.

5.6.1 How to download the PSIP templates

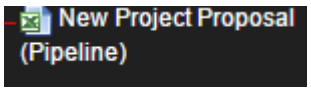
(1) New project proposal (Blank)

Once the sub menu of download new project proposal (Blank) is clicked, the save as window pops up and then the file can be saved.



(2) New project proposal (Pipeline)

Clicking on the sub menu navigates to the download window where a vote of choice is selected from the drop-down list. Once the vote is selected then the list of projects appears. If select/unselect all button is checked, all the projects are downloaded. But you can also check the project you want to download and once checked, you can click on the "download selected files" button



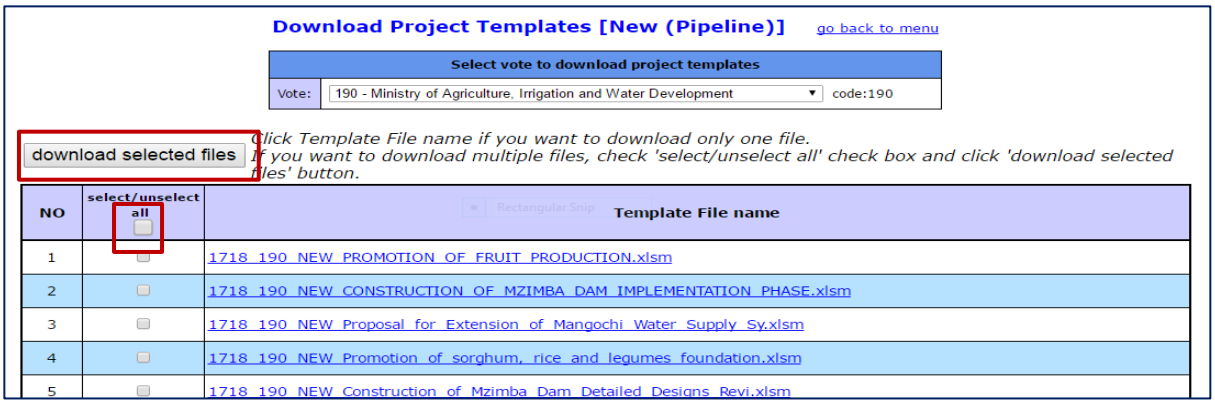
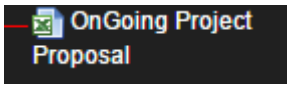


Figure 31: Shows download function for pipeline projects

(3) Ongoing project proposal

Clicking on the sub menu navigates to the download window where a vote of choice is selected from the drop-down list. Once the vote is selected then the list of projects appears. If select/unselect all button is checked then all the projects are downloaded. But you can also check the project you want to download and once checked you can click on the download selected files button



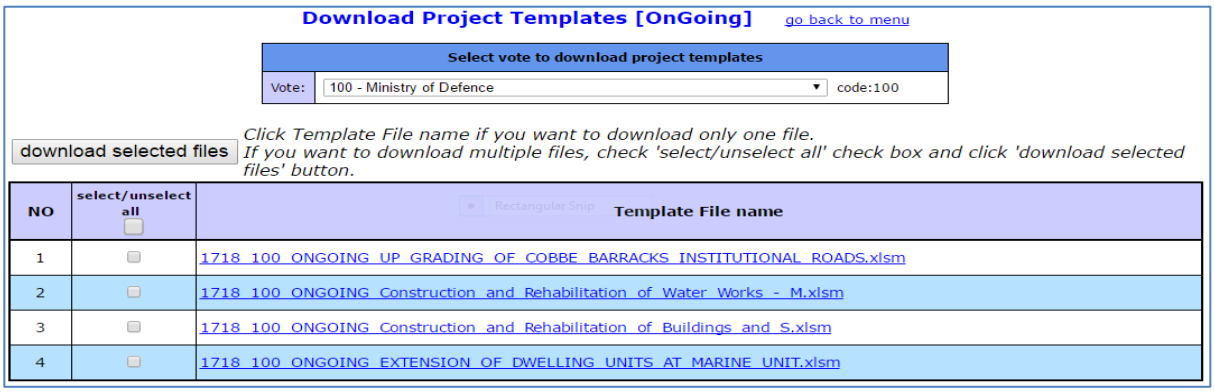
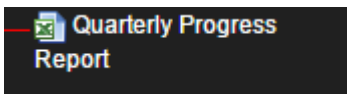


Figure 32: Shows download function for ongoing projects

(4) Quarterly progress reports

Clicking on the sub menu navigates to the download window where a vote of choice is selected from the drop-down list. Once the vote is selected then the list of projects appears. If select/unselect all button is checked then all the projects are downloaded. But you can also check the project you want to download and once checked you can click on the download selected files button.



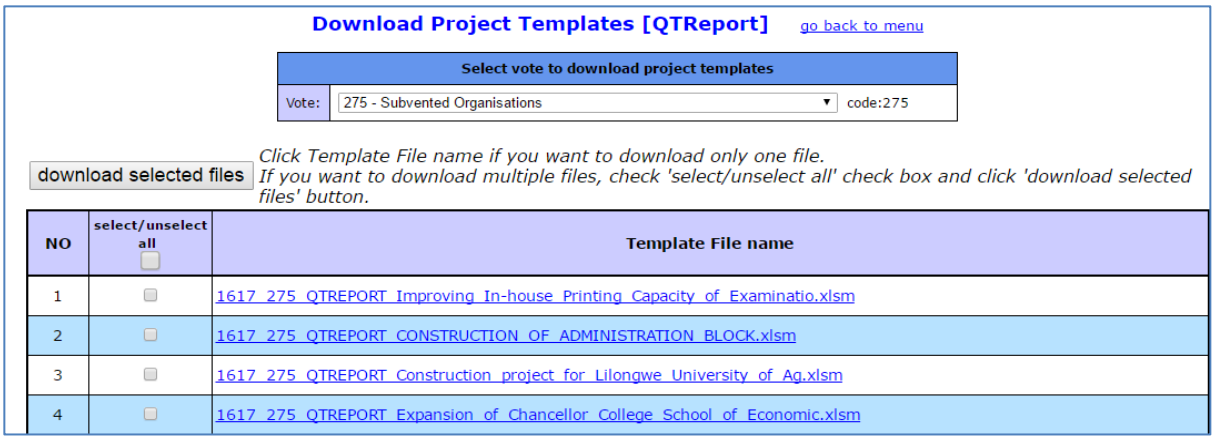
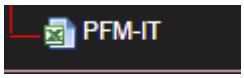


Figure 33: Shows download function for Quarterly reports

(5) PFM-IT

Clicking on the sub menu navigates to the download window where a vote of choice is selected from the drop-down list. Once the vote is selected then the list of projects appears. If select/unselect all button is checked then all the projects are downloaded. But you can also check the project you want to download and once checked you can click on the download selected files button.



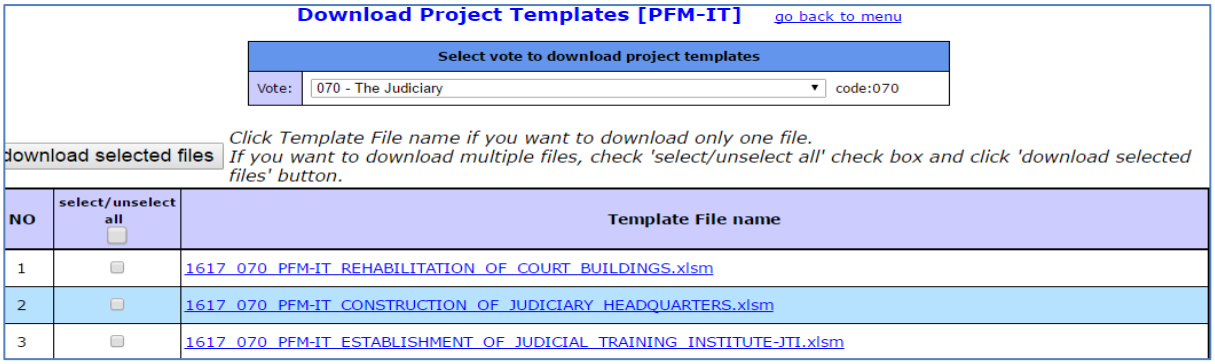


Figure 34: Shows download function for PFM-IT

5.7 Information

This is an information function which shows the announcements made by PSIP and PSIP Newsletter.

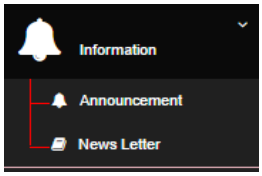


Figure 35: Show the information menu

5.7.1 Announcement

(1) Click on the announcements to navigate to the announcements screen

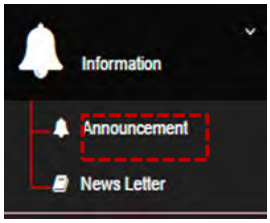


Figure 36: Announcements sub-menu

- The announcements Page

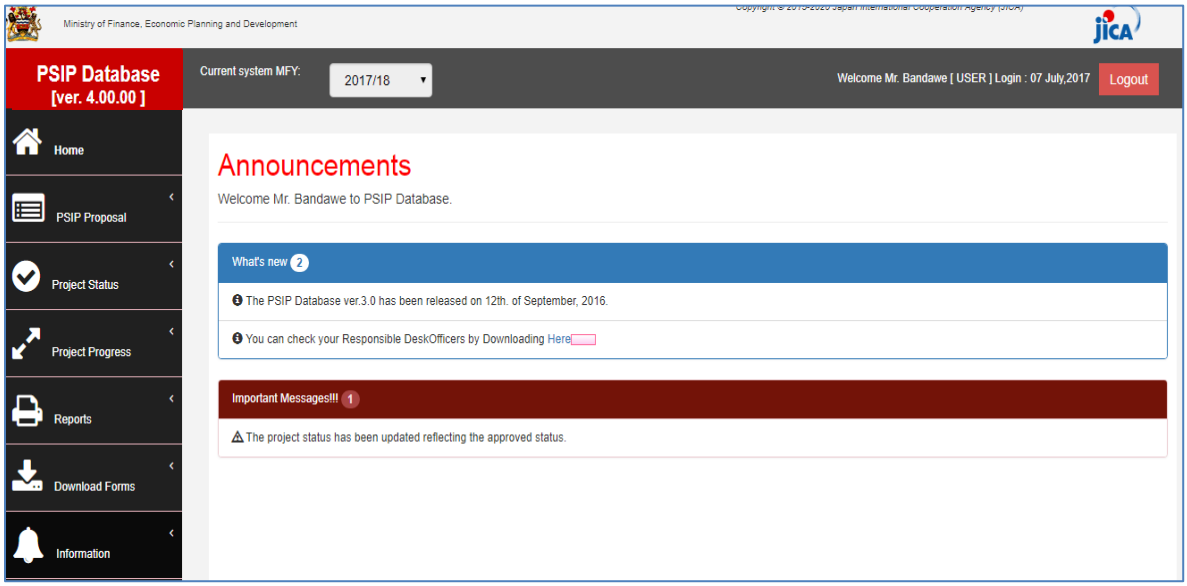


Figure 37: Announcements page

5.7.2 Newsletter

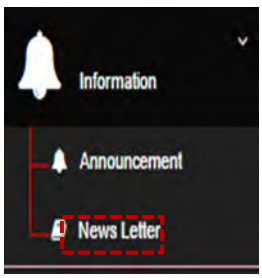


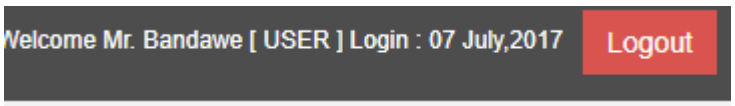
Figure 38: Newsletter sub-menu

- Newsletter page

Figure 39: Newsletter Page

5.8 Logout

A connection called a session is established each time a user login. To terminate that session the user may logout of the system.



6. User Privileges

Some restrictions have been placed on the user accounts, which will vary according to the type of user group and the stage of the Public Sector Investment Programming (PSIP) cycle. The access permissions are as follows.

Table 4: Roles and privilege

User Group	Rolls and privileges	Targets
Guest User	Guest user can view proposal submissions but cannot download nor view the submission status.	Registered users interested to see the PSIP information including donors
MDA Users	MDA users can view proposal data and download, but no right to edit documents.	MDA users registered to database
PSIP Unit	PSIP officers can edit all Ministries' information such as the project status or appraisal status	The PSIP Officers
Administrator	Administrators will be able to edit all data and manage accounts, database, etc.	IT Officials assigned to maintain the system and database.

7. Proposal submission and PSIP Process

7.1.1 Proposal Submission flow

Most information of the Proposal and Quarterly Report is “Read only” on the PSIP Database. The original Project Proposal and Quarterly Report are filled in Excel file which MDA users send to the PSIP unit by mail. The PSIP Unit is responsible for the registration of the sent information into the database. If you need to modify the information, please change the contents of the Excel Template and send it again to the PSIP unit.

The following figure represents the proposal submission flow.

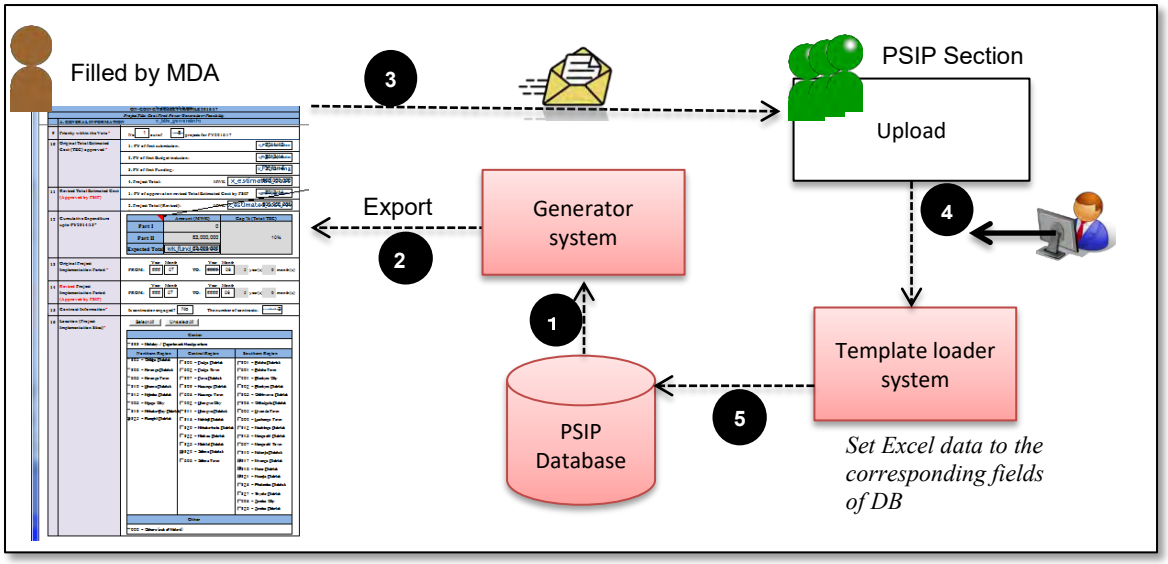


Figure 37: Proposal Submission flow

1) The proposal information already registered to the database is retrieved from the system (in case of On-going).
2) The retrieved data is exported to the corresponding fields of Excel Template (in case of On-going).
3) After MDA users fill in the information in Excel Template, they send it to PSIP Unit.
4) At PSIP Unit, the Excel Template is loaded to the system.
5) The system finally registers the proposal information to the PSIP Database.

7.1.2 During PSIP Process

As described above, MDA users can create information by Excel Template for New and On-going Projects which is after the announcement of Circular No1 and for a certain period until the project submission deadline. If a user needs to change project details of the already submitted project, it is required to contact the PSIP Unit and justify their reason for change. Changing project life span will need authorization by way of Extension Request from MFEPD and hence data revision will be approved by MFEPD.

The MDA users will be given about one month to prepare their proposals. During this period, the PSIP Unit will give them technical assistance on how to fill in the template where necessary. To secure enough time for the proposal appraisal by the PSIP Unit, the proposals must be submitted on time.

8. Questions and Answers

Below is a list of questions that a user might ask. If you encounter any problem beyond your control, contact the PSIP Unit on **01 788 888 (Ext: 150/164) or** psipsubmissions@gmail.com.

8.1 System

Q1. I cannot connect to the Database by GWAN connection

A: Firstly, confirm that you are on the GWAN network with your Network Administrator. If you are on the GWAN network, check if your network cable is properly connected. If your cable is connected, check if there is a connection by looking for an icon of network at the bottom right corner of your screen.

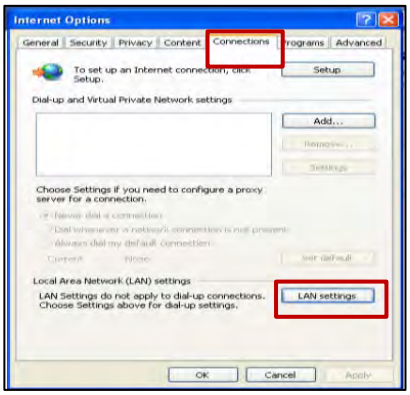
If you are connected and still cannot access the database, call the PSIP Unit to inform that the database is not connected.

Q2. My connection is slow (Only for GWAN Users)

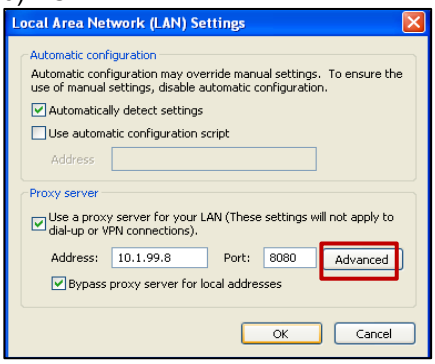
A: On the GWAN Network each command goes via the Proxy Server. This sometimes slows the speed with which the user accesses the database.

The users can bypass the GWAN Proxy server for the PSIP Database which allows them a direct connection to the database. This will also enable them to access to the database even when the Proxy Server is down. To bypass the Proxy you can configure the following settings (in case of Internet Explorer):

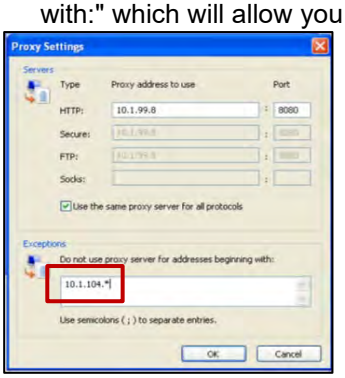
1) Go to Tools on the Internet Explorer menu bar.
2) On the Drop down list select Internet Options.
3) From the window click on Connections on the tabs at the top of the window
4) Click on LAN Settings on the window



5) For the GWAN connection, you may have already proxy setting with the proxy IP address.
6) Click on Advanced.



7) Type “10.1.99.*” on the Exceptions box under "Do not use proxy for addresses beginning with:" which will allow you to bypass the proxy Server.

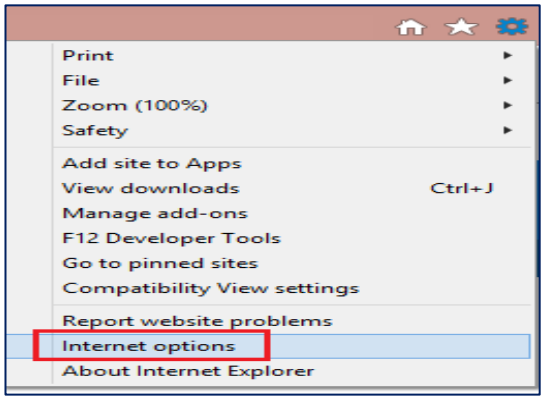


8) Click **OK** on the three pages to activate the settings.

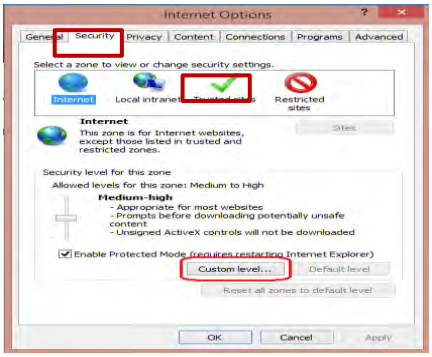
Q3. How can I enable JavaScript in internet explorer

A: The system requires JavaScript enabled since in some pages the JavaScript function is applied. The following procedure explains how to enable JavaScript in Internet Explorer.

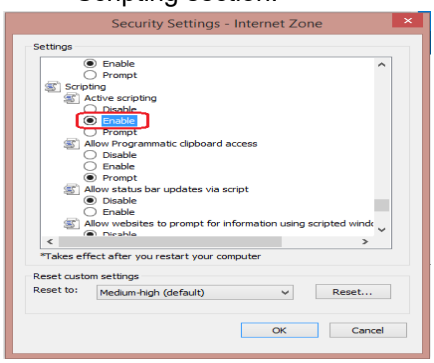
1) On the web browser menu, click Tools or the "Tools" icon (which looks like a gear), and select Internet Options.



2) When the "Internet Options" window opens, select the Security tab.
3) On the "Security" tab, make sure the Internet zone is selected, and then click on the "Custom level..." button



4) In the Security Settings – Internet Zone dialog box, click Enable for Active Scripting in the Scripting section.



5) When the "Warning!" window opens and asks, "Are you sure you want to change the settings for this zone?" select Yes.
6) Click OK at the bottom of the Internet Options window to close the dialog.
7) Click the Refresh button to refresh the page and run scripts.

8.2 User account

Q4. How can I obtain my user account?

A: Please submit a User Registration form in Annex 1 to the PSIP Unit. This form can be downloaded on the intranet or website.

Q5. I have forgotten my password

A: Please contact to the PSIP administrator, who will reactivate your account. You can renew your password.

Q6. What is the session?

A: For each user who logs into the system, a connection called a session will be created. The session will expire after maximum session time and require the user to login again. The idle state will occur if the user does not press any button nor click on the option.

8.3 Project Proposal

Q7. What is the project code? Where can I get it?

A: A project code is the code that the database will assign to uniquely identify each project. The user does not have to worry much about the code because the database will give you for all new projects.
The project code is a four-digit number.

Q8. What is a donor code? Where can I get it?

A: A user may refer a Donor Code for the main donor that is funding the project. This code is taken from the donor or the Debt and Aid Division, Ministry of Finance.

Q9. How can I remove a project from the list

A: Once the project is registered, it is not allowed to delete. If you want to delete the project, please contact the PSIP unit.

9. Definitions and acronyms

Below is a list of definitions, acronyms and abbreviations that have been used in this document.

9.1 Definitions

Table 5: Shows definitions

Word	Definition
MySQL	An open source database engine used to manage data in a relational database management system.
PHP	Is a scripting language used to write web applications.
User	A person who makes use of a system.

Database	Consists of an organized collection of data for one or more multiple uses.

9.2 Acronyms and abbreviations

Table 6: Shows acronyms and abbreviations

Acronyms and abbreviations	Definitions
Admin	Administrator of the system
CEPSIP	Capacity Enhancement for Public Sector Investment Programming
DAS	Development Assistance Strategy
GWAN	Government Wide Area Network
JICA	Japan International Cooperation Agency
MFEPD	Ministry of Finance, Economic Planning and Development
PSIP	Public Sector Investment Program
URL	Unified Resource language

10. Annexes

Annex1: Registration Form

PSIP Database User Account Registration Form	
If users need an account they are required to fill in the form bellow and hand it in to the PSIP Unit.	
Date:	
User ID: (Up to 20 characters)	
First Name:	
Last Name:	
Ministry:	
Position:	
Office Location:	
P.O Box:	
E-mail 1:	
E-mail 2:	
TEL 1:	
TEL 2:	
Fax:	
Cell 1:	
Cell 2:	
Signature	

Official Use only

Approved:	☐ **Yes** ☐ **No** **[Reason:** **]**
Approved Date	
Initial Password:	
Approved By:	
Registered By:	
Signature:	

Government of Malawi

Public Sector Investment Programme (PSIP)

PSIP Database (Ver. 4)

User Manual

For PSIP Unit

The Ministry of Finance, Economic Planning and Development
Department of Economic Planning and Development
P. O. Box 30136
Lilongwe 3, Malawi

July 2017

Supported by

Project for Capacity Enhancement in Public Sector Investment Programming II (CEPSIP II)

Japan International Cooperation Agency

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Document History for PSIP Database

Date	Revision	By	Remarks
20 May 2016	2.0	Yuko Shiraishi	Initial version
31 Mar 2017	3.0	Yuko Shiraishi	PSIP Database Ver. 3 new aspects included
17 Apr 2017	3.04	Yuko Shiraishi	Layout adjusted
25 July 2017	4.00	Afiske Benjamin Nsini	PSIP Database Ver. 4 new aspects included
25 July 2017	4.00	Thokozani Bandawe	PSIP Database Ver. 4 new aspects included
25 July 2017	4.01	Gift Njoloma	PSIP Database Ver. 4 new aspects checked
10 Aug 2017	4.02	Afiske Benjamin Nsini Thokozani Bandawe	New screenshot and functions included

1. Introduction

As part of the implementation of the Capacity Enhancement for Public Sector Investment Programming, a Public-Sector Investment Programming (PSIP) database was firstly developed in the CEPSIP-1 Project[1]. The database system is custom web-based software solution using PHP and MySQL database with a Web front-end. Being web-based, the system is accessible to all on the Government Wide Area Network (GWAN) and Internet users. Actually, the database serves as a platform for submitting project documents and handling other PSIP management processes.

The next phase of CEPSIP-2 project[2] started aiming at the improvement of Database and Manuals/Handbook for PSIP, further harmonization of the process of PSIP, and the capacity building to use improved Database and Manuals/Handbook for PSIP. As one of the activities to attain those purposes, the system was upgraded to Ver.1.1 to reflect the modification of proposal templates for fiscal year 2014/15, as well as the several environmental changes. The second edition covered those system modifications applied until March of 2014, where the submission of Word Proposal Template was employed.

The next version 1.5 was launched after the proposal templates for fiscal year 2015/16 was released. The design and system structure followed the ver.1.1, developing new mechanism of Excel Template Proposal for the submission together with other new functions.

The PSIP Database was upgraded to ver.2.0 released on December 2015, in line with the new proposal templates fiscal year 2016/17 where the additional new features to support appraisal decision procedures and quarterly report managements were introduced. This version applies the whole refactoring of the system (mainly database and program structure), to be able to get the better maintainability, scalability and flexibility, which means that the upgraded version enables to respond to the flexible and quick modifications according to the organizations or business requirements. The design of the screens on the Web has been completely renewed as well for the better user interface.

On September 2016, the version was upgraded to 3.0 after the Excel Proposal Template ver.3.0 was released. In new version, the information that had been managed until then individually or somewhere in local storage was integrated into the centralized database. This centralized management of information dynamically improved the PSIP staff's business process by hand to systematic one. With this version, the submitted proposal by MDA user

[1] CEPSIP 1; Capacity Enhancement in Public Sector Investment Programming Phase I (from July 2009 to July 2011)
[2] CEPSIP 2; Capacity Enhancement in Public Sector Investment Programming Phase II (from March 2013 to September 2017)

is appraised on the Web to make quick decision, what was discussed in the ministerial meeting is all recorded in the database effectively to support the appraisal and the ability to make budgetary transitions. Further, as an MDA user support, the extension request submitted by MDA user or feedback of the appraisal is visible on the Web.

In the 2018/19 fiscal year, the database will now start using the new version 4.0, released on August 2017. This latest version focuses on providing better feedback to the MDA users with the valuable information such as the result of the requested project extension. The submitted reports by MDA users such as Project Extension Request or Completion Report is displayed as well on the Web page with the same Excel format. Regarding the budget, the requested amount and approved budget can be traced on the Status & Budget screen for your reference. On the other hand, the powerful management tool has been provided for PSIP Unit where all the process of each project can be managed and controlled from its submission until approval of the budget.

2. What is PSIP Database

2.1 Overview of PSIP Database

The overall objective of the PSIP is to facilitate efficient utilization of Malawi's human, natural, physical and social resources to improve the country's economic prospects and further development of public services. This objective is attained through a careful and thoughtful process of planning and management of development projects across the sectors.

To achieve this objective, PSIP provides a mechanism that screens and confirms public investments projects to ensure that they are in line with the priority areas of the MGDS and that the implementation of such projects is done in the most cost effective and efficient manner. The PSIP Database tool was developed to contribute to the PSIP Unit and stake holders to achieve this goal.

All MDA users are required to submit their proposed development projects to the PSIP Unit under Development Planning Division of the Ministry of Finance Economic Planning and Development (MFEPD) during the budget preparation process. The PSIP unit validates these project proposals. After the deadline of PSIP proposal submission, a series of a ministerial meeting is convened where Ministries present their project proposals. The proposals are screened by MFEPD; this process involves discussions with line ministries so that programs/projects that do not conform to ministerial, sectoral, or national goals and objectives are not accepted for inclusion in the PSIP. The project proposals are analyzed and then are either approved, rejected or referred back to line Ministries for further refinement.

The database system allows MDA users to submit their proposals electronically through an Excel Template file which data is later stored systematically to the Database by PSIP Unit staff. The submitted proposal is expected to permit MDA users to search and list all the projects that are presented to the PSIP Unit and even view details pertaining to projects that are implemented, ended, rejected, pipelined or terminated including the information in the past. The Monitoring and Evaluation Unit will easily link and correspond with the Development Planning Division since they can all access and refer to the same database. This will minimize problems that may arise due to lack of adequate information when monitoring and evaluating projects by the Malawi Government. Furthermore, this process will not only reduce the time it takes to submit, approve and monitor projects, but also decrease a lot of redundancies and human errors that were found in the previous manual system.

2.2 The roles of MDA

The planning section of each ministry plays a leading role in PSIP formulation at the line ministry level. By following the PSIP guidance, the planning section facilitates the compilation of data through the pre-designed template on the PSIP database, consolidates and submits the proposals to MFEPD. Then the MFEPD and the planning section of each line ministry have meetings to decide the project list to be included in the PSIP while considering the allocation amount of the development budget to each project within a given ceiling figure. The compiled data from line ministries is then submitted to MFEPD.

3. System Requirements

The following table shows supported versions and conditions of the system.

Table 1: System Requirements

System	version	Remarks
Excel Proposal Template	ver. 4.0 or higher version	
Operating System	Windows 7 or later version	
PSIP Database Web	ver. 4.0 or higher version	
Proposal Loader system	ver. 4.0 or higher version	
Proposal Generator system	ver. 4.0 or higher version	
Browser	• Internet Explorer 10 or later • FireFox higher than ver.45 • Chrome higher than 49	- JavaScript must be enabled. - Pop-up windows should be enabled.

This document assumes that the computer system has connection to the GWAN network or has direct internet connection to use PSIP Database application.

3.1 Intended Audience

This document is intended for PSIP desk officers who have PSIP role in the database.

4. Access to the System

You can access to the system by the following URL address.

Table 2: Access to the system

	URL address	Type of connection	Who can connect	Observations
1	http://psip.malawi.gov.mw	- Internet - GWAN intranet connection	- who has Internet connection - who connects to the GWAN network with Intranet connection - who connects to the JICA network at PSIP office	If your network is GWAN or JICA Wi-Fi connected, the connection will be made by Intranet. If you are out of GWAN having your own Internet connection from outside (such as Airtel Malawi), the connection will be by Internet.

4.1 How to access to the PSIP Home Page

Enter the above URL address to your browser either by Internet or Intranet connection according to your environment.

1) Open your browser (Internet Explorer, Firefox or Chrome)
2) In the address bar of the browser, type in;

http://psip.malawi.gov.mw

This will be immediately redirected to the secure page “https://psip.malawi.gov.mw”as seen in the Figure below.

Figure 1: Address bar

[note] The difference is that what you enter is normal http protocol. The system immediately redirects to “https” secure protocol where all the information is encrypted.

3) This address takes you to the PSIP home page as seen below.

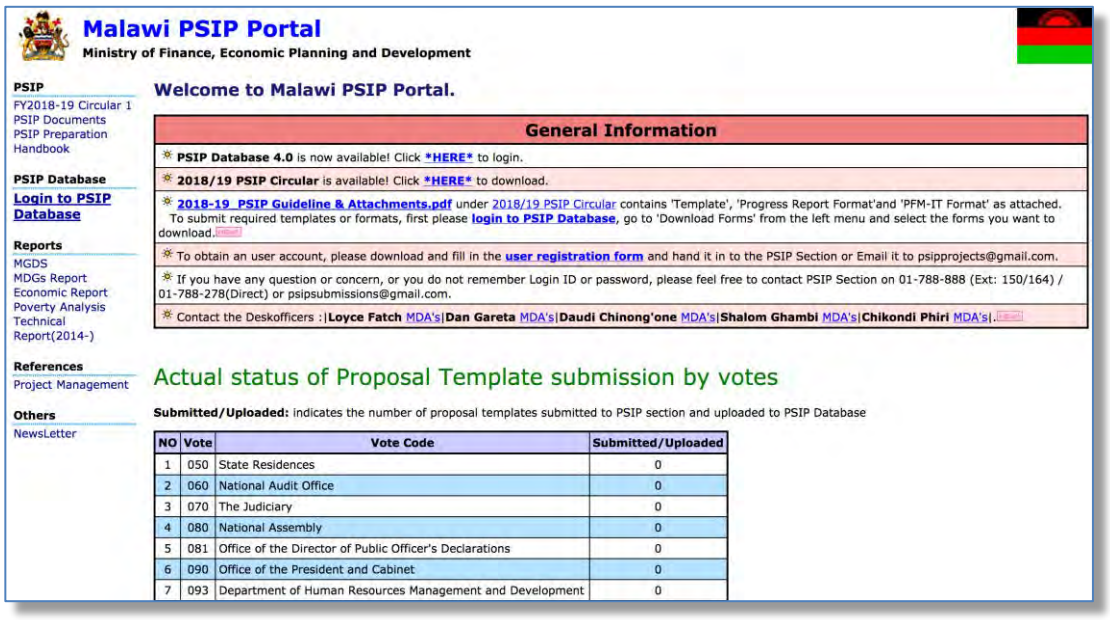


Figure 2: PSIP Home Page

This page has a menu on the left pane which will allow users to navigate easily from one page to the other. The home page is available for all users; in fact, no authentication is required to be able to obtain useful public information such as several manuals, reports and handbooks.

On the main page, the general information also shows some messages to the visitors.

Below the general information, actual status of current Fiscal Year Proposal Template submission by votes can be viewed by all visitors. This represents the number of projects proposals sent by each vote.

4.2 How to access to the PSIP Database

To use the PSIP Database system, you are supposed to be authenticated in the database as a user having Login ID and password registered beforehand.

1) To enter the database, click on ‘Login to PSIP Database’ from the left menu.

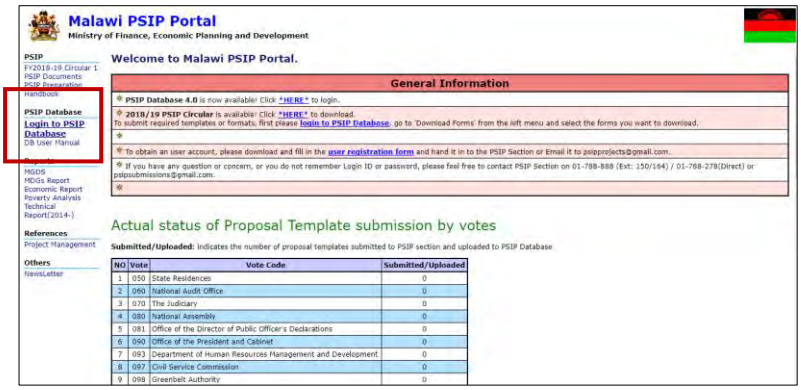


Figure 3: How to access to the PSIP Database

2) A page will pop up requesting them to enter a password and username.

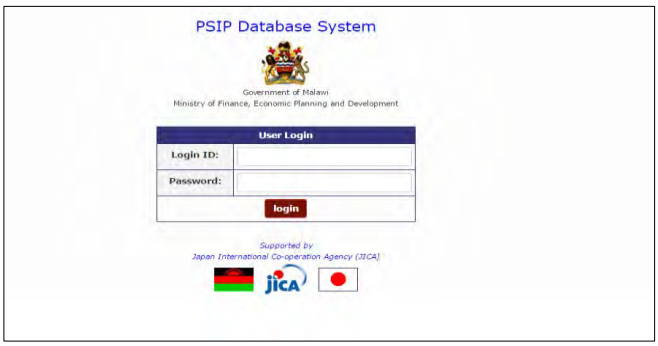


Figure 4: PSIP Database Login Screen

All users of the system are required to input Login ID and Password. When a user logs in, a connection called a session will be created. The session will be expired and require the user to log in again, if the user stays idle, that means, if the user does not click the submit button nor react for certain session maximum time.

[note] Be careful that Login ID and Password are case sensitive, i.e. "**U**ser" and "**u**ser" are not the same.

If the login authentication is successful, it takes you to the top page of announcement of PSIP Database.

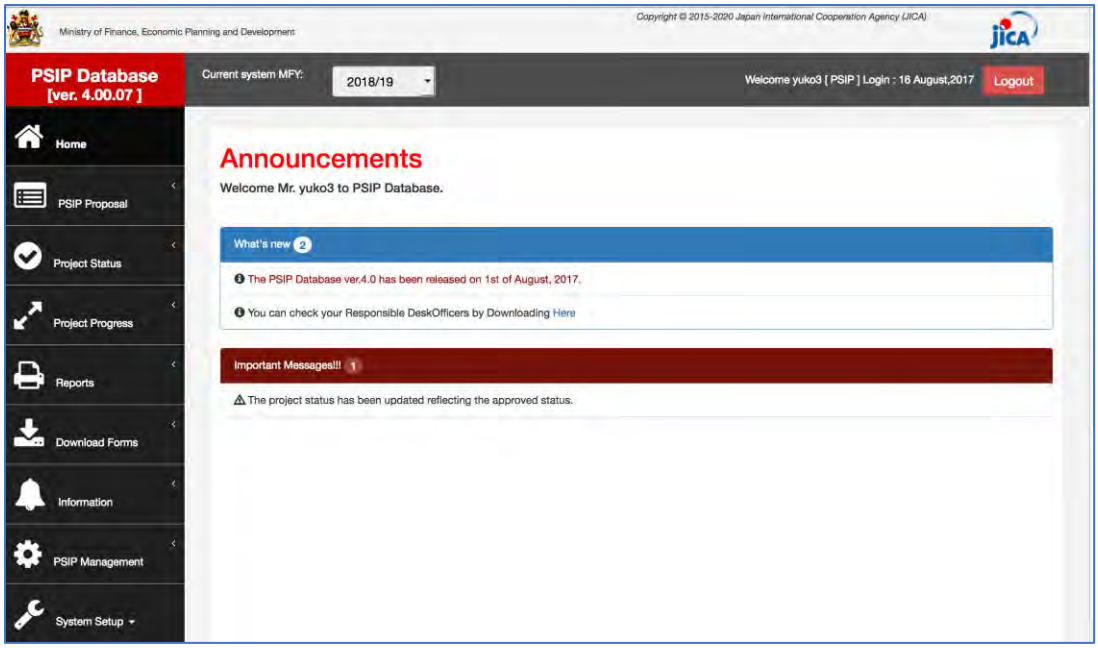


Figure 5: Announcements screen

4.3 How to obtain Login ID

A user is required to submit a User Registration form in Annex 1 to the PSIP Unit to obtain the Login ID. This form can be downloaded from the PSIP portal top page. After you fill in your profile and password, send it to the PSIP Unit who will register your account to the Database and provide you the temporary password. The first time your login, you are required to enter this temporary password and change it to new password.

5. PSIP Database features and functions

Let's see the main functions displayed on the menu of the left pain of the window. The menu has the submenus shown when you click the item.

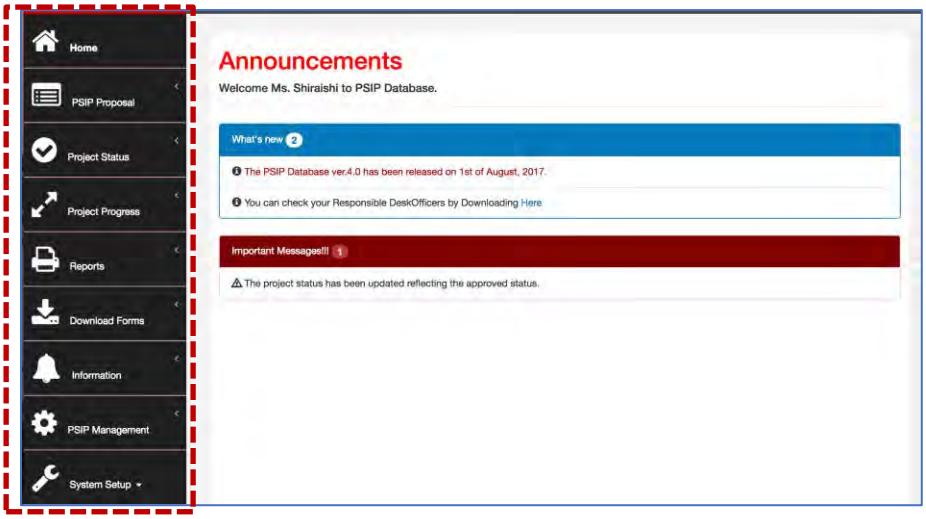


Figure 6: Database Menu

5.1 Home/Announcements

After your successful login to the system, the Announcement page of PSIP Database is on top. It displays the latest news and useful information regarding the PSIP activities and the system. It may sometimes display warning messages individually to your Ministry. It is therefore recommendable for the user to every time check the announcements before using the system. The page also displays a feature of Desk Officers where you can download and see your PSIP desk officer.

5.11 View names of PSIP Desk-officers and their rensponsible MDA Portifolio

To view the names of PSIP Desk-officers and their MDA portfolio, click on the pop up in the announcements screen, which will navigate to matrix window of desk officers.

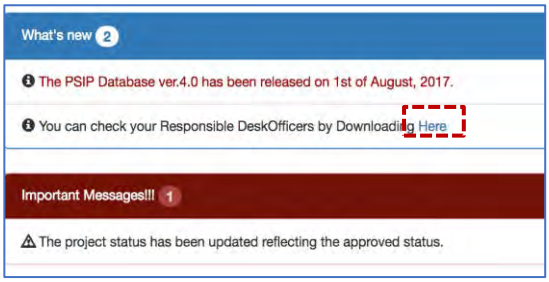


Figure 7: Announcements Screen

5.2 PSIP Proposal

PSIP Proposal menu contains the information regarding proposals, such as Project Proposal details, Summary of the submitted projects and Submission status of the proposals by MDAs.

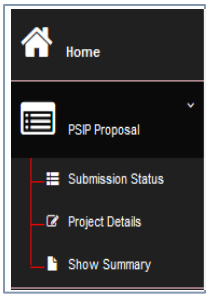


Figure 8: PSIP Proposal submenu

5.2.1 Submission Status

All the projects are shown in the Submission Status list presenting the submission and uploaded status.

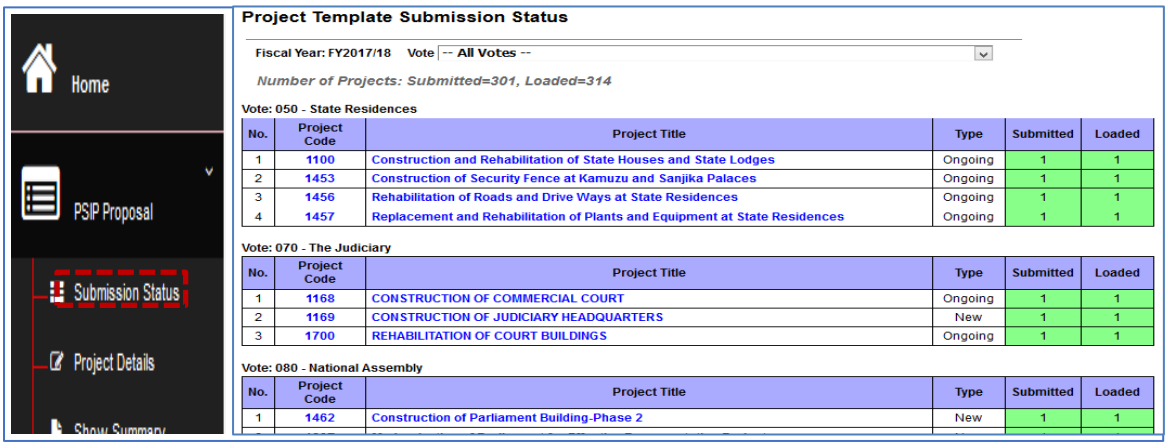


Figure 9: Submission Status screen

The number "1" on the corresponding column means that it is registered successfully on each status. The following are the two status of the submission:

Table 3: Status of the submission

Submission Status	Meaning	Remarks
Submitted	The proposal is submitted by the vote.	
Loaded	The proposal is uploaded to the database by the PSIP unit.	

This list can be used for confirmation if proposal is in the PSIP database.

[note] This screen is visible for MDA users, but not available for GUEST users.

5.2.2 Project Details

Project details will list you the submitted project proposals, by selecting FY, Vote in a drop-down list or project status.

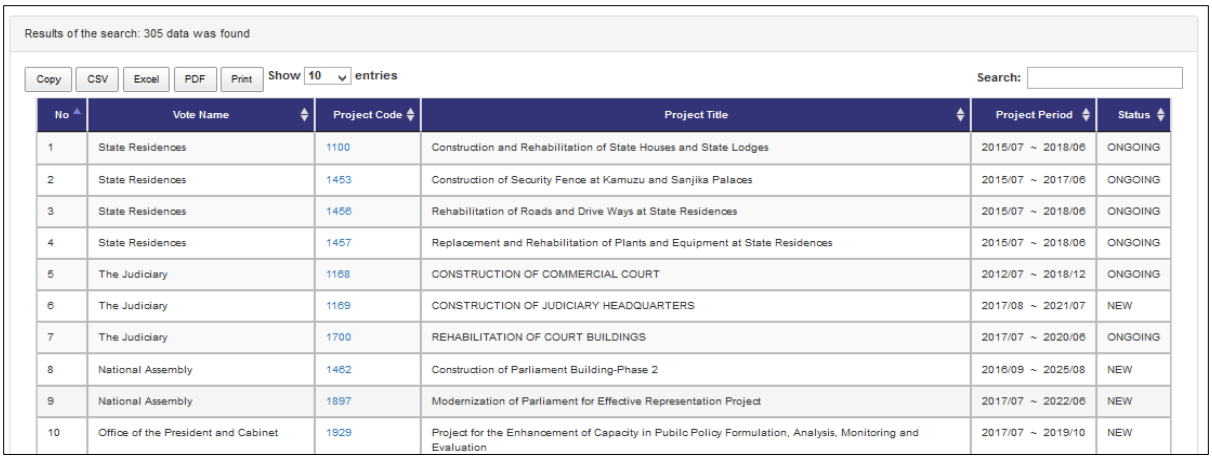
1) Select the conditions to list the projects

MFY; select the FY you are interested in. You can select not only corresponding year, but past proposals are also available.

Vote; choose the vote which project you want to filter.

Status; check/uncheck the project status to filter the projects.

2) Press the Search button and the corresponding projects are shown according to your conditions with the number of rows. The project status is also displayed in the list.



Results of the search: 305 data was found

Copy CSV Excel PDF Print Show 10 entries Search:

No	Vote Name	Project Code	Project Title	Project Period	Status
1	State Residences	1100	Construction and Rehabilitation of State Houses and State Lodges	2015/07 ~ 2018/06	ONGOING
2	State Residences	1453	Construction of Security Fence at Kamuzu and Sanjika Palaces	2015/07 ~ 2017/06	ONGOING
3	State Residences	1456	Rehabilitation of Roads and Drive Ways at State Residences	2015/07 ~ 2018/06	ONGOING
4	State Residences	1457	Replacement and Rehabilitation of Plants and Equipment at State Residences	2015/07 ~ 2018/06	ONGOING
5	The Judiciary	1168	CONSTRUCTION OF COMMERCIAL COURT	2012/07 ~ 2018/12	ONGOING
6	The Judiciary	1169	CONSTRUCTION OF JUDICIARY HEADQUARTERS	2017/08 ~ 2021/07	NEW
7	The Judiciary	1700	REHABILITATION OF COURT BUILDINGS	2017/07 ~ 2020/06	ONGOING
8	National Assembly	1462	Construction of Parliament Building-Phase 2	2016/09 ~ 2025/08	NEW
9	National Assembly	1897	Modernization of Parliament for Effective Representation Project	2017/07 ~ 2022/06	NEW
10	Office of the President and Cabinet	1929	Project for the Enhancement of Capacity in Public Policy Formulation, Analysis, Monitoring and Evaluation	2017/07 ~ 2019/10	NEW

Figure 10: Project Proposal List

[note] As a default, all the status is selected. If you want to unselect all, uncheck the “Check all” checkbox. If no status is selected, anyway all the projects of any status will be shown including the projects without status.

Status: ☑New ☑Ongoing ☑Pipeline ☑Pended ☑Ending ☑Rejected ☑Terminated ☑Completed ☑Check all

[note] Project Status for "coming FY" indicates requested status by MDAs (before approval), while those for other FYs indicate approved ones.

3) Other useful functions

- Search by keyword

After you list all the projects, if you want to filter more in detail with some keywords, enter the word into the “Search” textbox, and only the projects that hit with the corresponding keyword will be listed on the table.

Results of the search: 305 data was found

Copy CSV Excel PDF Print Show 10 entries Search:

No	Vote Name	Project Code	Project Title	Project Period	Status
1	State Residences	1100	Construction and Rehabilitation of State Houses and State Lodges	2015/07 ~ 2018/06	ONGOING
2	State Residences	1453	Construction of Security Fence at Kamuzu and Sanjika Palaces	2015/07 ~ 2017/06	ONGOING

Figure 11: Search by keyword

- Sort on the title of the table

You can sort the list table clicking the title (No, PSIP Code, Title, Type, etc.).

Figure 12: Sort function

- Print function

By clicking the printing function button, you can print the filtered table to print image, PDF, CSV (Excel) or "Copy and Paste" to where you want.

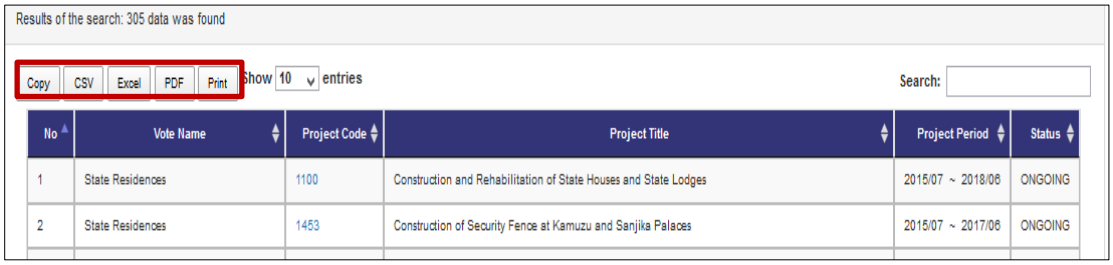


Figure 13: Print function

- Show entries function

By selecting the Show entries button, you can specify the number of projects appearing on screen e.g. 50,100,200 or all

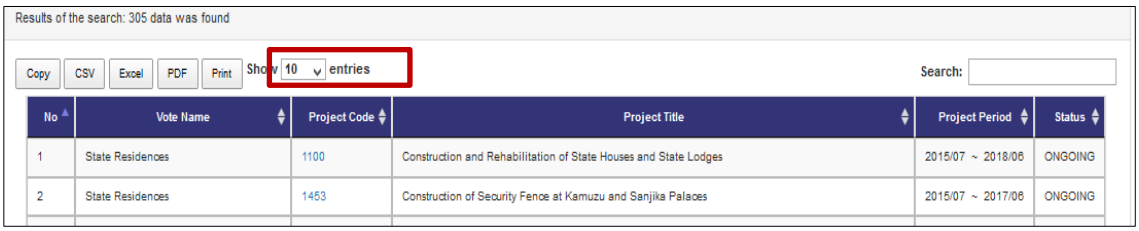


Figure 14: Show entries function

5.2.3 Project Detail Information

By selecting the Project Code on the list, it takes you to the project detail information page. Project Detail Information is grouped into several tabs. Clicking on the tabs will open a corresponding page according to the project status. New Project Registration has tabs namely General Info / Outline / Total Project Cost Matrix / Annual Project Cost Matrix / Financing/ Monitoring Evaluation/Proposal Applied FY/Project Management Structure, while On-going project has tabs; General Info / Outline/Project Performance / Annual Project Cost Matrix / Monitoring Evaluation / Proposal Applied FY/ Project Management Structure.

Basically, the contents displayed in the Project Details are the same as Excel Template format. On the top of the page the title, the status and selected year are always visible.

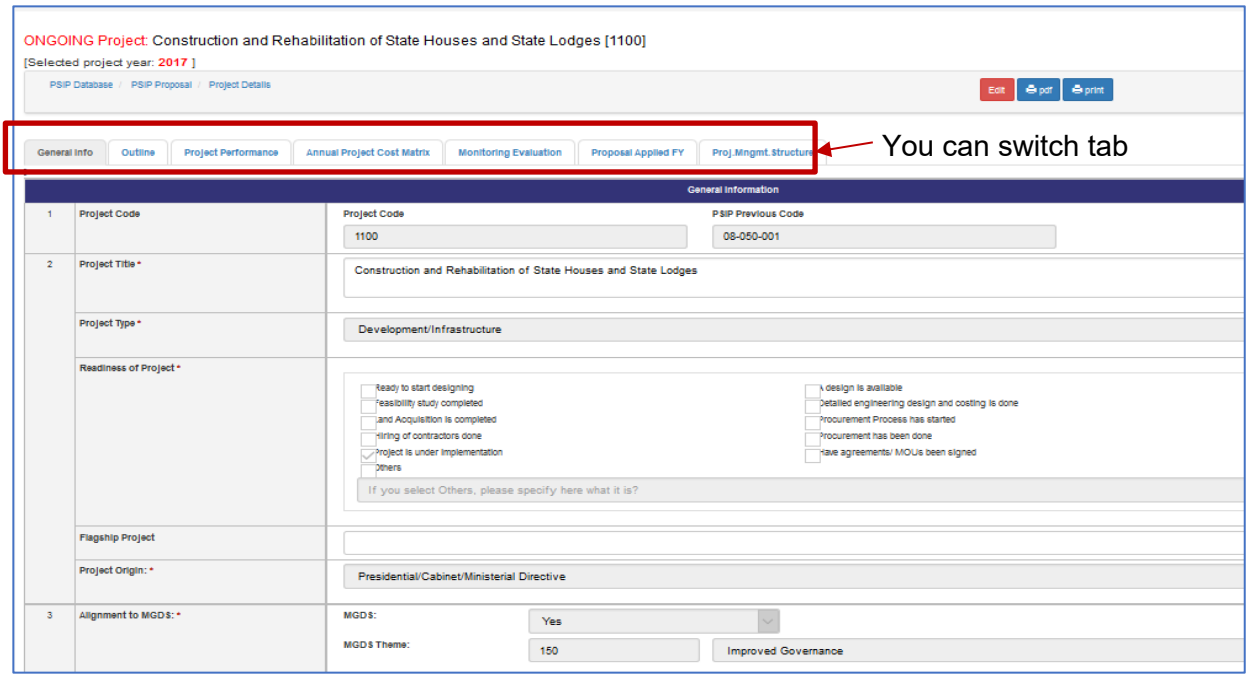


Figure 15: Project Detail screen

- Save function

PSIP staff can edit some parts of the template and save by clicking on save button. These are the Original TEC of Project, if project is a flagship and period of implementation.

Figure 16: Save function

- Print output function

Print function is available in each page and PDF button that downloads the template into PDF format.

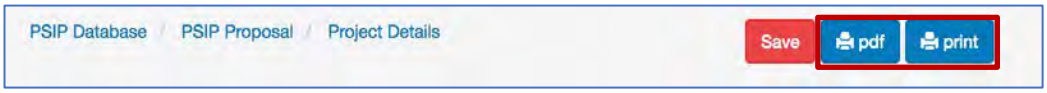


Figure 17: Print function

5.2.4 Show summary

Instead of displaying the specific proposal information one by one, you can list all the projects in one table summarizing the submitted proposal information.

1) Go to PSIP Proposal-> Show summary from the left pain menu.

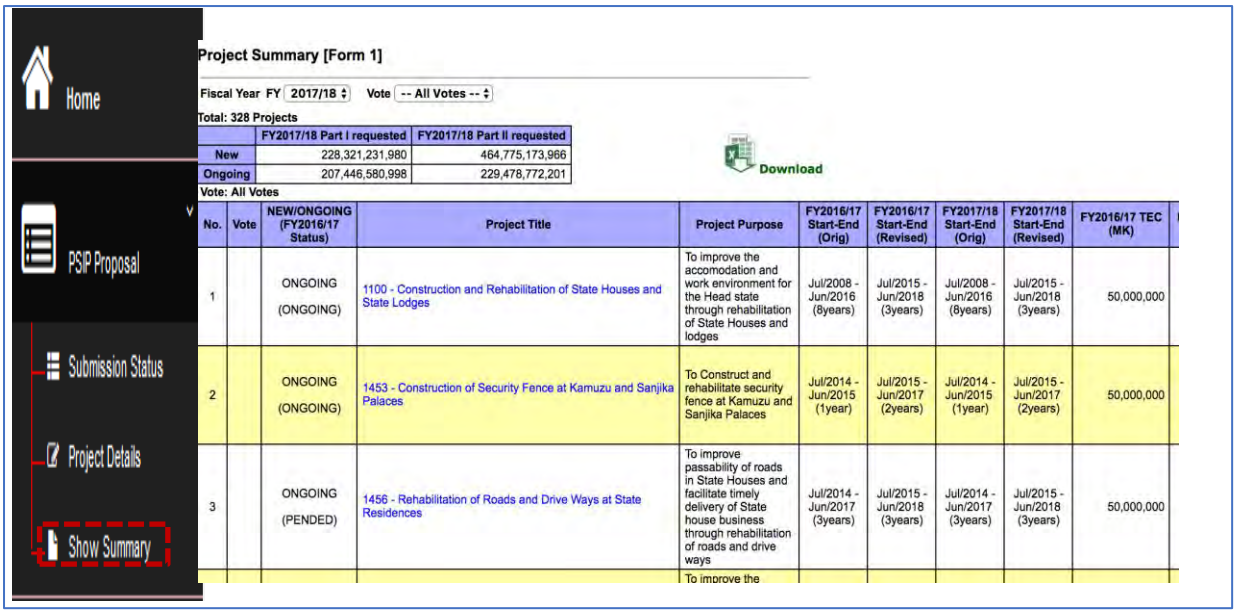


Figure 18: Summary screen

This summary list is quite useful to compare all the projects since it shows TEC, Funding of the recent two years, information of donors and contacts at once.

2) To get the summary list in Excel format, you can click “Download” icon.

[note] The project summary is one of the main tools for the appraisal. Be careful that if your proposal is not found here, it means that the project may be excluded from the appraisal. If your submitted project is not found in spite you have sent it to the PSIP unit, please contact to the PSIP staff.

5.3 Project Status Menu

5.3.1 Status & approved Budget

The Status and approved Budget submenu shows the list of results of project status and approved budget and the appraisal decision.

(1) Specify the financial Year FY, Vote and Status as search conditions

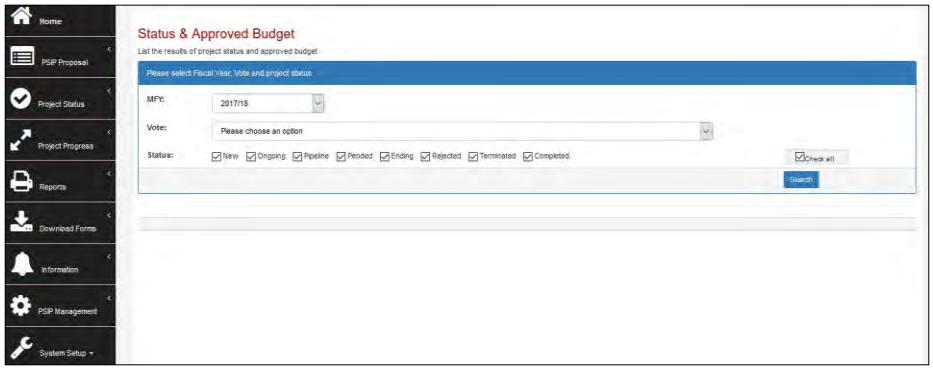


Figure 19: Status & Approved Budget

(2) The projects that meet the search conditions are listed in the table.

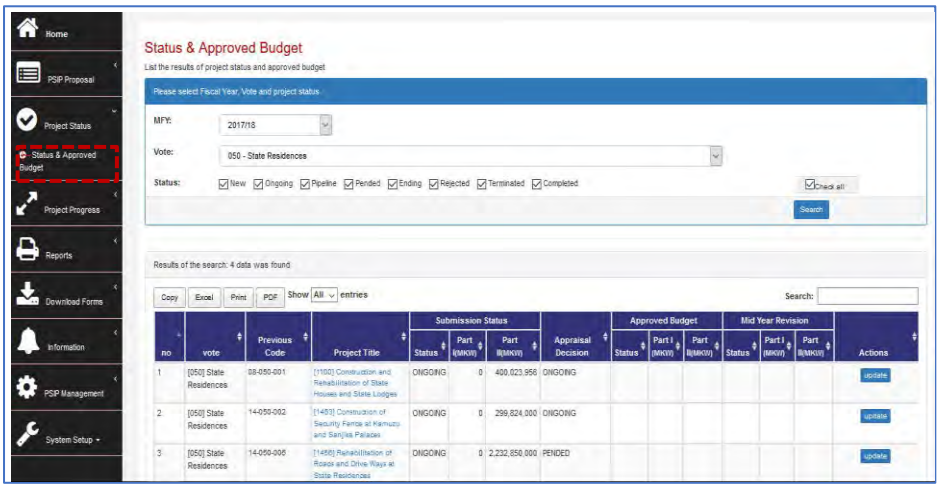


Figure 20: Status and Approved Budgeted list

The appraisal decision made by PSIP desk officer is shown in the appraisal decision column. The project has the proposed status submitted by MDA users through Excel Proposal Template. Then the status will have the result of appraisal. The following figure shows how the transition of the status of New, On-going and Pipeline goes.

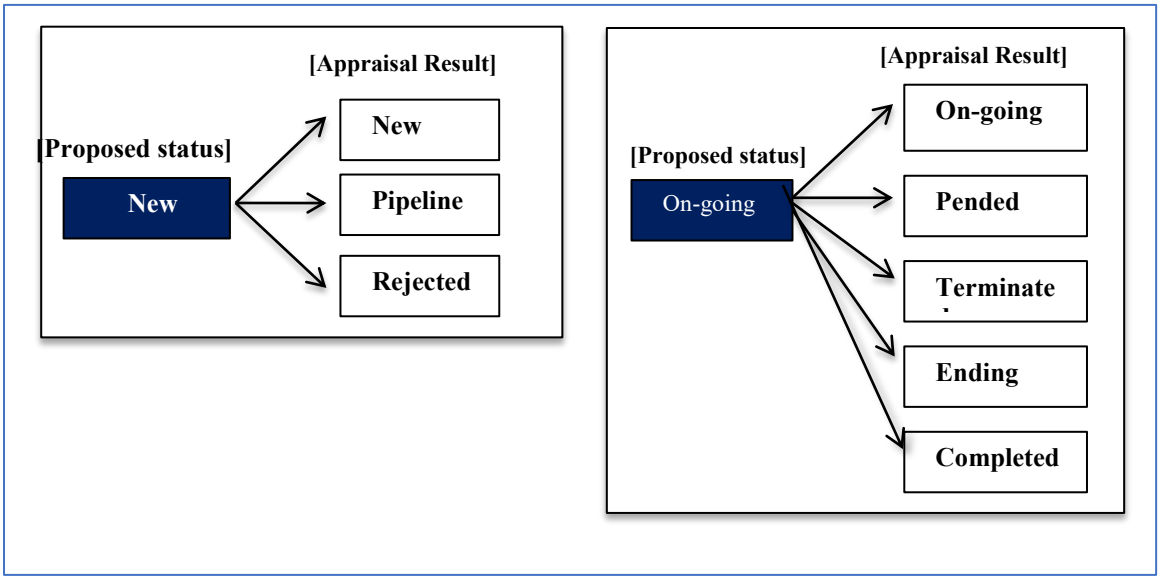
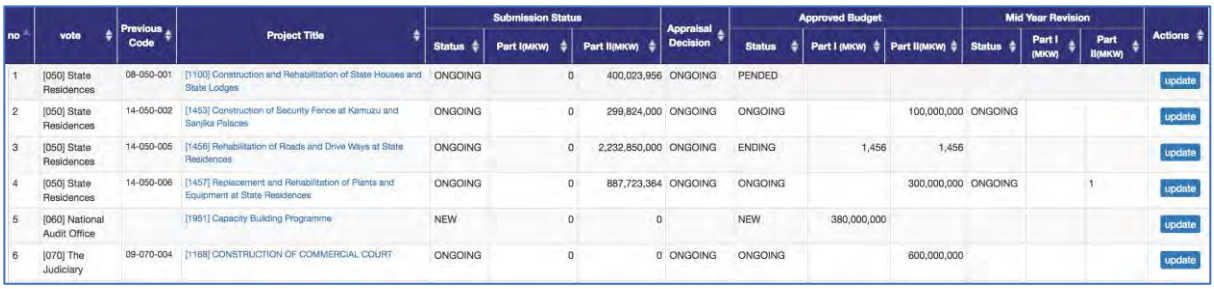


Figure 21: Transition of Project Status

The Proposed status by submission is set as project status after the proposal submission of the projects by MDA users. After the appraisal, its decision is set around mid-February overwriting the original status. The approved status column after the Parliament is inserted in the table as shown in the figure below. This means that the approved status column represents the final decision of the project which will be set around August.



no	vote	Previous Code	Project Title	Submission Status			Appraisal Decision	Approved Budget			Mid Year Revision			Actions
				Status	Part I(MKW)	Part II(MKW)		Status	Part I (MKW)	Part II(MKW)	Status	Part I (MKW)	Part II(MKW)	
1	[050] State Residences	08-050-001	[1100] Construction and Rehabilitation of State Houses and State Lodges	ONGOING	0	400,023,956	ONGOING	PENDED						update
2	[050] State Residences	14-050-002	[1453] Construction of Security Fence at Kamuzu and Sanjika Palaces	ONGOING	0	299,824,000	ONGOING	ONGOING		100,000,000	ONGOING			update
3	[050] State Residences	14-050-005	[1456] Rehabilitation of Roads and Drive Ways at State Residences	ONGOING	0	2,232,850,000	ONGOING	ENDING	1,456	1,456				update
4	[050] State Residences	14-050-006	[1457] Replacement and Rehabilitation of Plants and Equipment at State Residences	ONGOING	0	887,723,364	ONGOING	ONGOING		300,000,000	ONGOING		1	update
5	[060] National Audit Office		[1951] Capacity Building Programme	NEW	0	0		NEW	380,000,000					update
6	[070] The Judiciary	09-070-004	[1168] CONSTRUCTION OF COMMERCIAL COURT	ONGOING	0	0	ONGOING	ONGOING		600,000,000				update

Figure 22: Four status of the project

[note] the “Project Status” is always reflecting the most actual status.

5.3.2 Edit Appraisal Results of Proposals

By clicking the “update” button, it takes you the Edit Appraisal Results of Proposals screen. The status can be adjusted by clicking on the pointers in the status bar which then shows a dropdown list of the status.

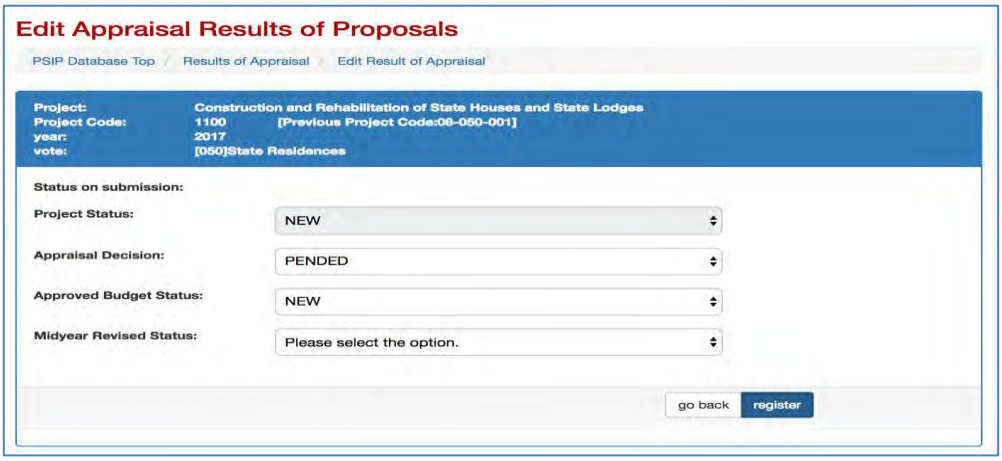


Figure 23: Edit appraisal results of proposal

5.4 Project Progress

5.4.1 Project Quarterly Progress Report Status

As a reporting function, you can list all the status of Project Quarterly Progress Report selecting the year and vote. All the projects with project status “On-going” or “NEW” is retrieved according to your specified filter showing which quarterly period of the report is already submitted and which is yet pending.

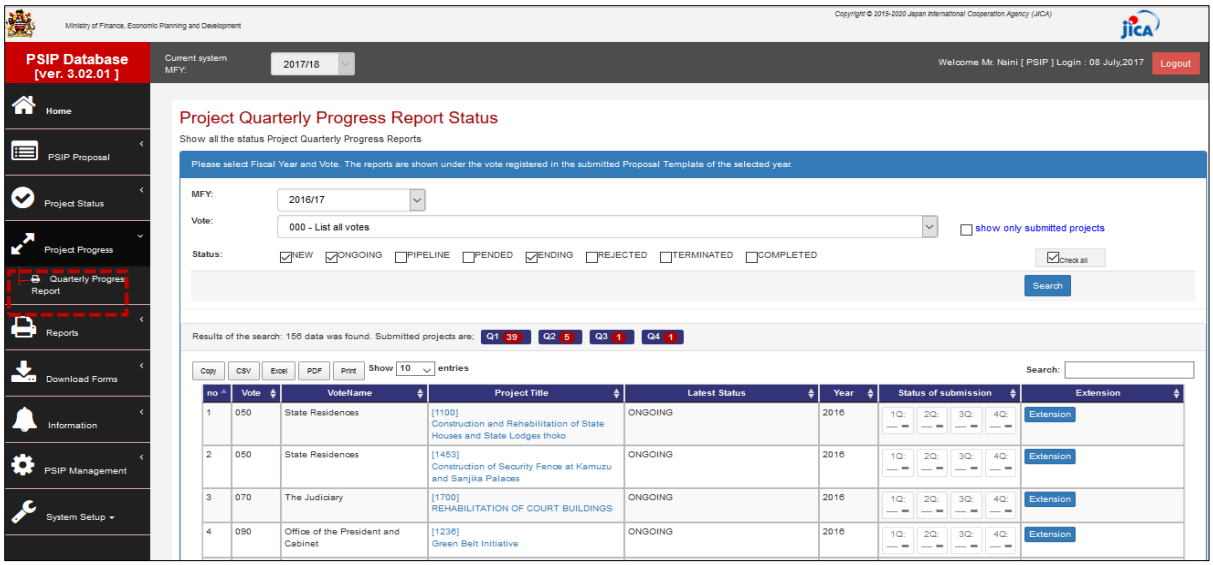


Figure 24: Quarterly Progress Report screen

[note] The MFY will be selected with the year of the project which Quarterly Progress Report corresponds to. For example, if MDA users submit the report for year 2016/17 project, select the year 2016/17 and the table shows all the 2016/17 projects that are supposed to submit report with project status New, Ongoing, Ending checked as a default.

If “show only submitted projects” checkbox is checked, only project who submitted Quarterly Progress Report will be listed.

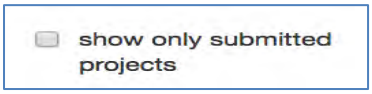


Figure 25: Check button for submitted projects

The result of the search will be displayed after the search button is clicked with the specified conditions. The red number in the square represents the number of submitted reports each quarter.

Figure 26: Results for all votes search

5.4.2 Report Detail

If the report is submitted, you can click the blue OK button

to see the detail of the report corresponding to the project. There are tabs such as Main, Project Performance, which information is exactly the same as Excel Project Quarterly Report. Please refer the Excel Manual for the detail information.

5.4.3 How does the system decide if the report is submitted or not

The system employs the following two conditions to see if the quarterly report is submitted.

- It checks if information on finance issues/ performance issues/ actions/ others is/are not empty.
- All above issues are empty but performance is not empty.

5.4.4 Extension Request

The submitted Extension Request information is available selecting "Extension Request" tab on the Quarterly Progress tab. The content is displayed with the same information as Excel Format.

Figure 27: Extension Tab

5.4.5 Completion Report

If the project is completed and the report is submitted by Excel format, the content is also displayed on the "Completion Report" tag.

Figure 28: Completion report tab

5.4.6 Feedback of Extension Request

On the Extension Request column, the "Requested" or "Show Result" button is displayed if the project has submitted the extension request.

The red "Requested" means that the project has submitted the request, while the green "Show Result" represents that the result is already done.

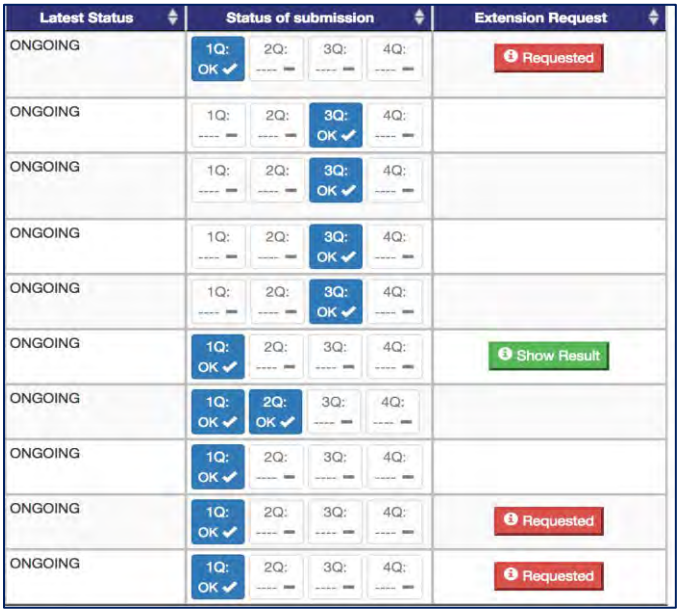


Figure 29: Quarterly report submission status and feedback screen

Clicking the button shows popup window where you can edit the detail of the request and approval/withdrawal.

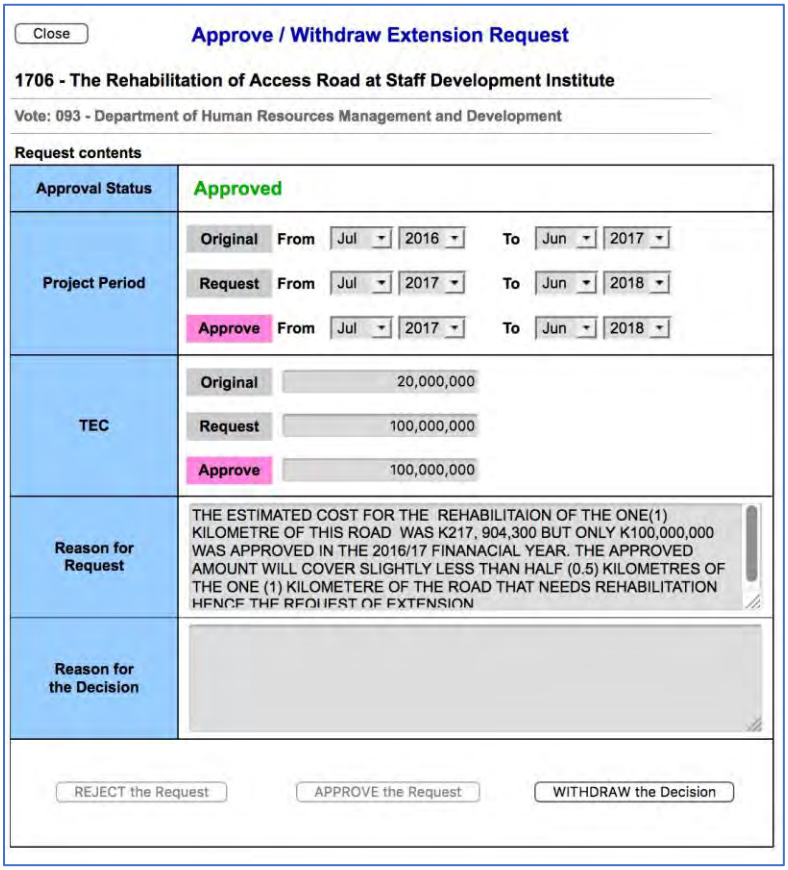


Figure 30: Detail of the extension request

5.5 Reports

5.5.1 Project List

This function shows the project summary based on the TEC and Donor by specifying the responsible ministry and MDA.

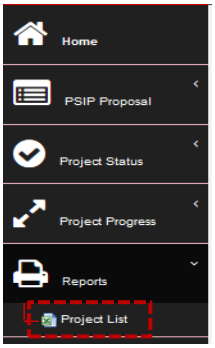


Figure 31: Reports sub-menu

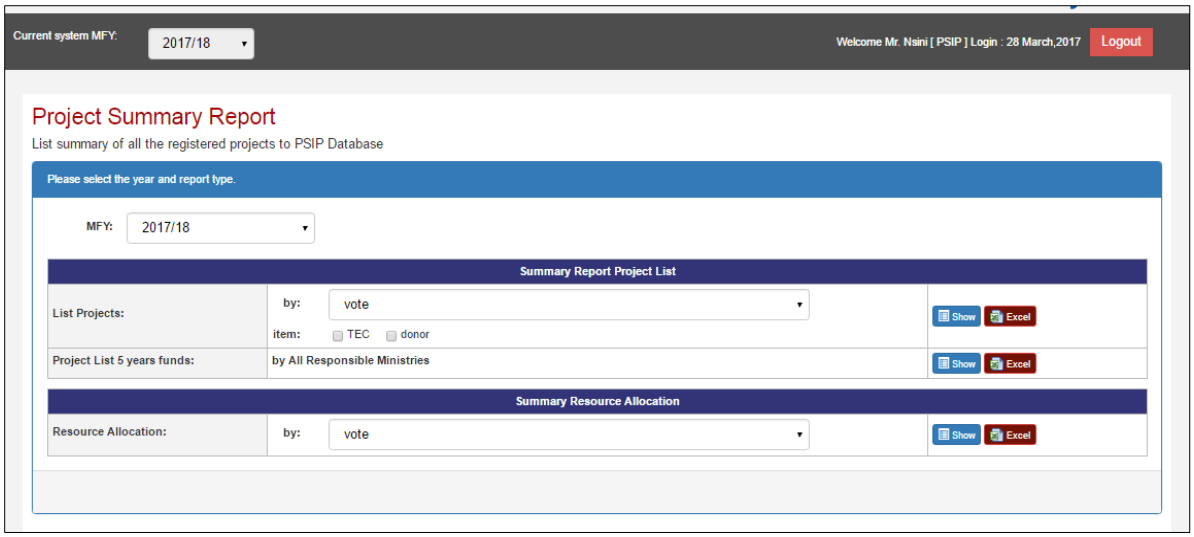
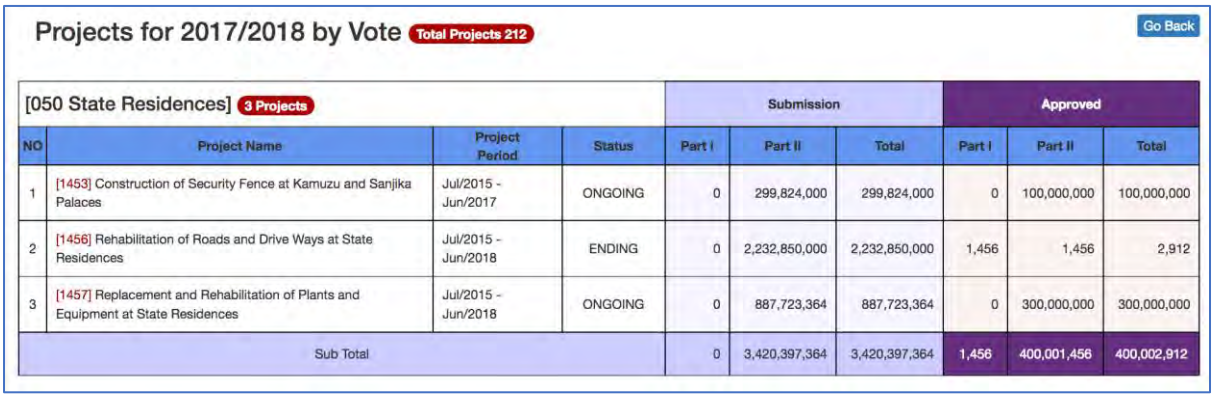


Figure 32: Show project summary report

- To view by Vote, Select MFY, the vote then check on the TEC or donor then click show button. Once that is done then the table below is shown.



Projects for 2017/2018 by Vote Total Projects 212 — Go Back

[050 State Residences] 3 Projects				Submission			Approved		
NO	Project Name	Project Period	Status	Part I	Part II	Total	Part I	Part II	Total
1	[1453] Construction of Security Fence at Kamuzu and Sanjika Palaces	Jul/2015 - Jun/2017	ONGOING	0	299,824,000	299,824,000	0	100,000,000	100,000,000
2	[1456] Rehabilitation of Roads and Drive Ways at State Residences	Jul/2015 - Jun/2018	ENDING	0	2,232,850,000	2,232,850,000	1,456	1,456	2,912
3	[1457] Replacement and Rehabilitation of Plants and Equipment at State Residences	Jul/2015 - Jun/2018	ONGOING	0	887,723,364	887,723,364	0	300,000,000	300,000,000
Sub Total				0	3,420,397,364	3,420,397,364	1,456	400,001,456	400,002,912

Figure 33: Project summary

[note]

When the MGDS Theme or Priority is selected by user, the grand total does not match as the whole project grand total, since there are projects which does not have the MGDS Theme or Priority

[note]

If you are using **Microsoft Office higher than Office 2010** versions, when downloading the report, you might have noticed the problem of protected mode which disable to display the contents. Whenever you try to open an Office document (Word, Excel or PowerPoint file) which was downloaded from Internet or was attached in an email, Microsoft Office program opens it in **Protected View** which is also known as **Read Mode** or **Restricted Mode**.

You can turn off Protected View feature, following simple steps:

1. First launch any Office program such as Microsoft Word and then click on File menu present in the ribbon.
2. Now click on Options tab present in the left sidebar.
3. It'll open Options window. Now click on "Trust Center" tab given at the end in left-side pane and then click on "Trust Center Settings" button.

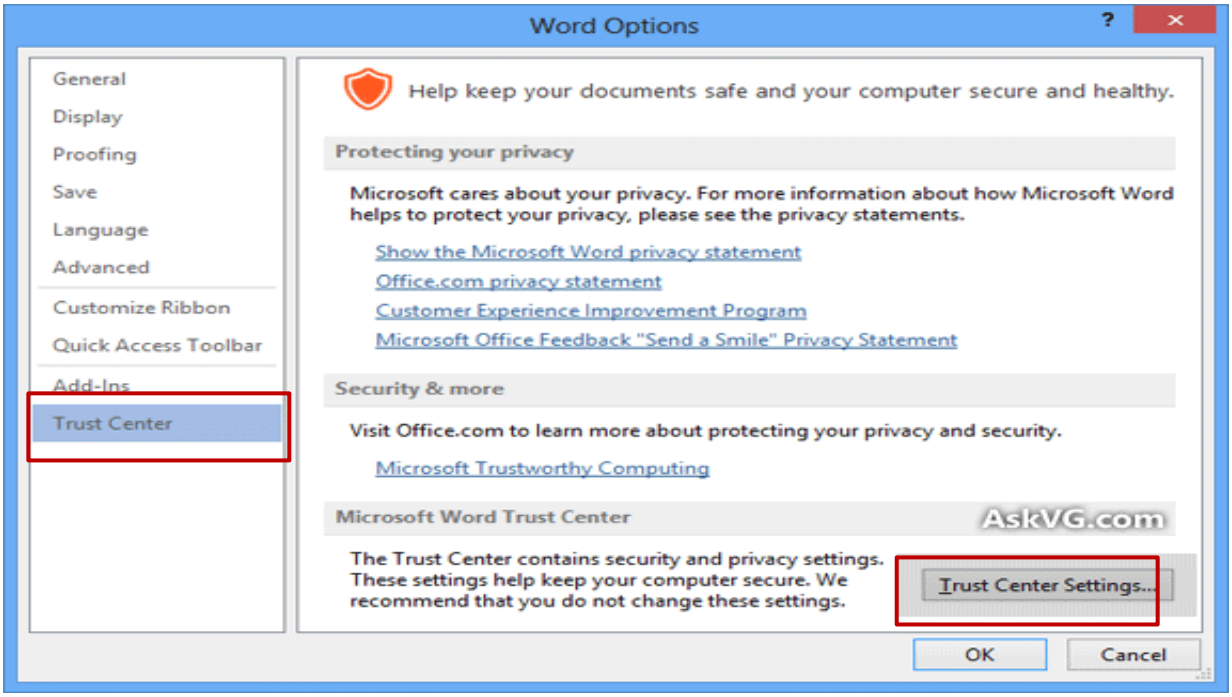


Figure 34: Protected view window

4. Click on "Protected View" tab and in right-side pane, you'll see following options:

Enable Protected View for files originating from the Internet

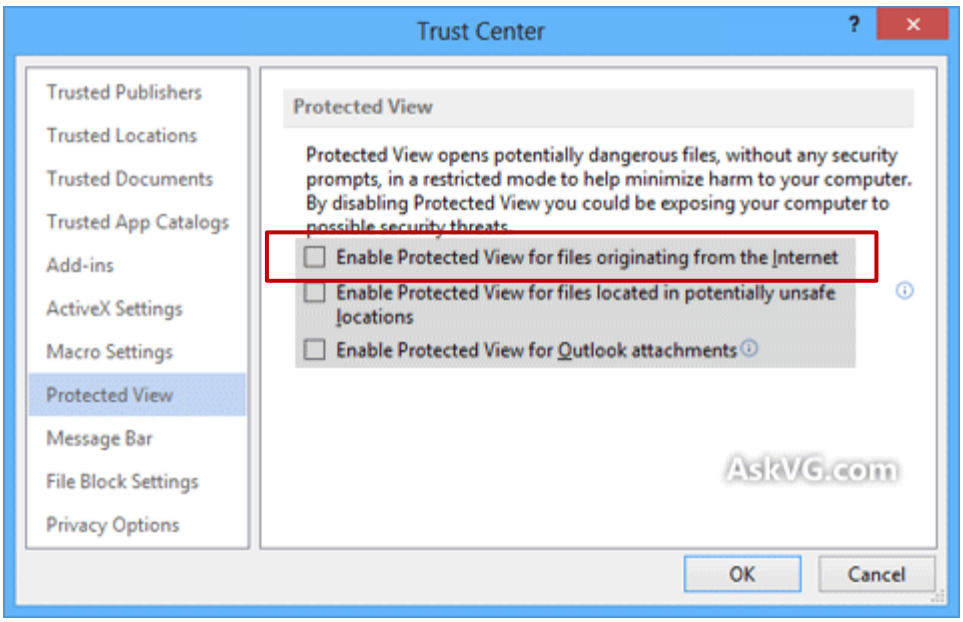


Figure 35: Trust center window

5.6 Download Forms

MDA/PSIP/Admin users can download Project Proposal for;

- New Project Proposal (Blank format)
- New Project Proposal (Pipeline project)
- On-going Project Proposal
- Quarterly Progress Report
- PFM-IT

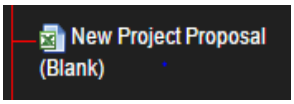
Figure 36: Download sub-menu

[note] The download menu is invisible for GUEST role users.

5.6.1 How to download the PSIP templates

(1) New project proposal (Blank)

Once the sub menu of download new project proposal (Blank) is clicked then the save as window pops up and then the file can be saved.



(2) New project proposal (Pipeline)

Clicking on the sub menu navigates to the download window where a vote of choice is selected from the drop-down list. Once the vote is selected then the list of projects appears and download can be done.

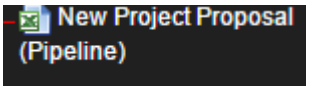
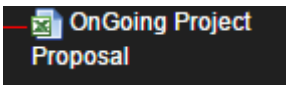


Figure 37: Show download function for pipeline project

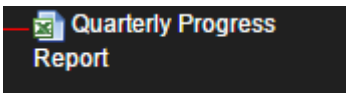
(3) Ongoing project proposal

Clicking on the sub menu navigates to the download window where a vote of choice is selected from the drop-down list. Once the vote is selected then the list of projects appears and download can be done.



(4) Quarterly progress reports

Clicking on the sub menu navigates to the download window where a vote of choice is selected from the drop-down list. Once the vote is selected then the list of projects appears and download can be done.



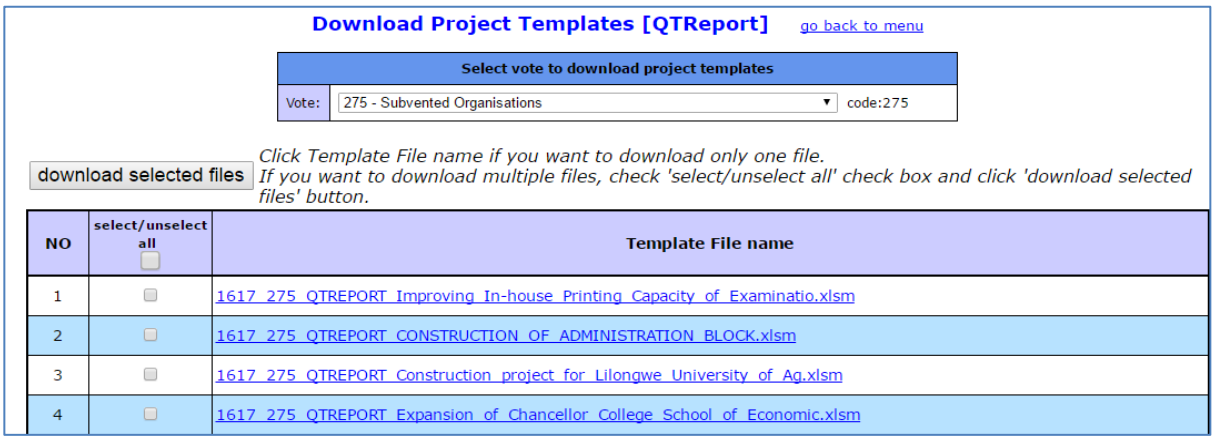
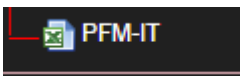


Figure 38: Screen after clicking the quarterly report button

(5) PFM-IT

Clicking on the sub menu navigates to the download window where a vote of choice is selected from the drop-down list. Once the vote is selected then the list of projects appears and download can be done.



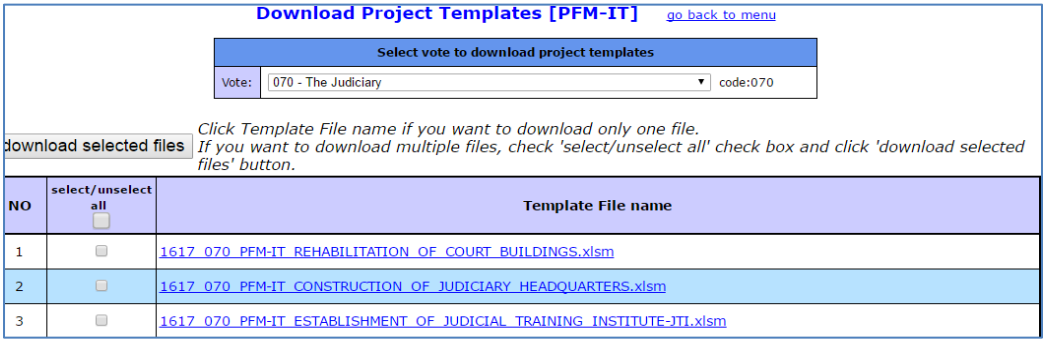
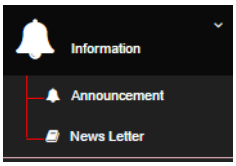


Figure 39: Screen after clicking the PFM-IT button

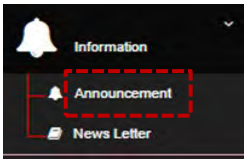
5.7 Information

This is an information function which shows the announcements made by PSIP and PSIP Newsletter.



5.7.1 Announcement

1). Click on the announcements to navigate to the announcements screen



- The announcements Page

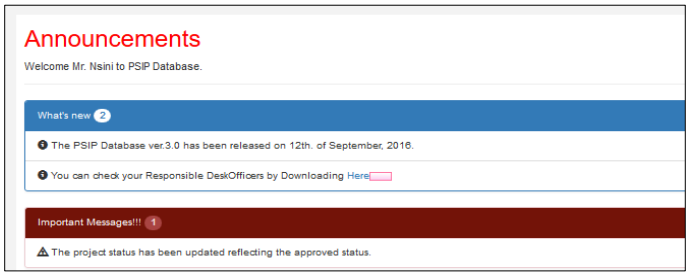
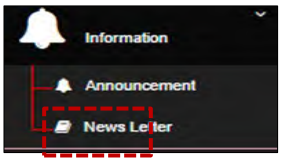


Figure 40: Announcement page

5.7.2 Newsletter



- The newsletter page

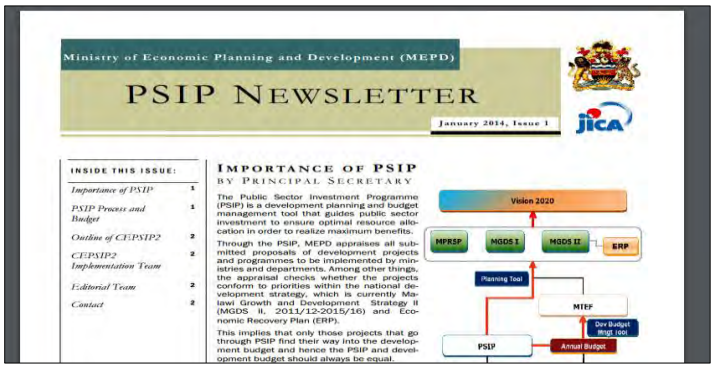


Figure 41: Newsletter Page

5.8 PSIP Management (PSIP/Admin Only)

5.8.1 Template Loader

This is a manual uploading function that loads a project on the PSIP Database.

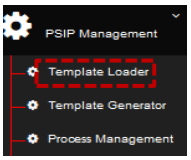


Figure 42: Upload function screen

(1) Click on the choose file which explores you inside computer then select project file and click load the file. Then project navigates to another window

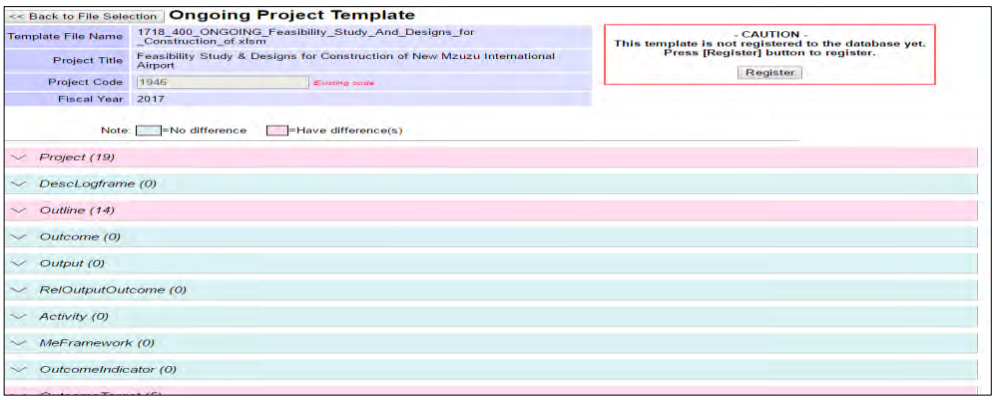


Figure 43: Project loading registration window

(2) Click on Register

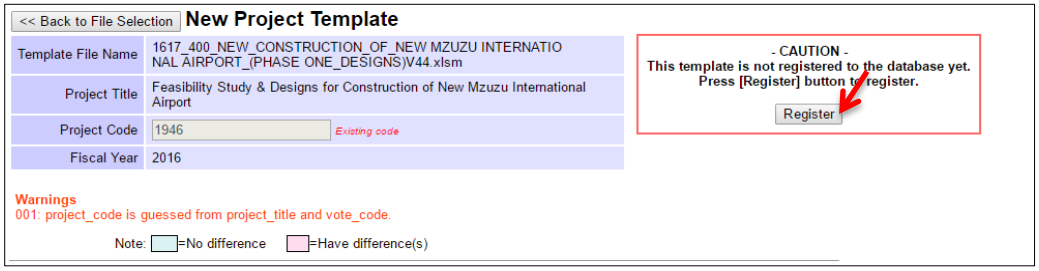
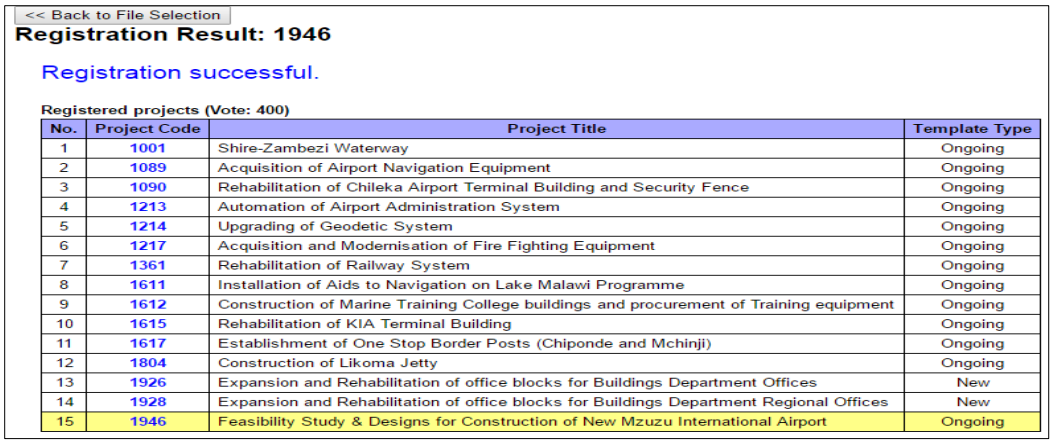


Figure 44: Registering button

- By clicking on the register button then the registered project is shown as below.

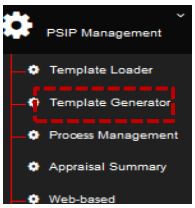


No.	Project Code	Project Title	Template Type
1	1001	Shire-Zambezi Waterway	Ongoing
2	1089	Acquisition of Airport Navigation Equipment	Ongoing
3	1090	Rehabilitation of Chileka Airport Terminal Building and Security Fence	Ongoing
4	1213	Automation of Airport Administration System	Ongoing
5	1214	Upgrading of Geodetic System	Ongoing
6	1217	Acquisition and Modernisation of Fire Fighting Equipment	Ongoing
7	1361	Rehabilitation of Railway System	Ongoing
8	1611	Installation of Aids to Navigation on Lake Malawi Programme	Ongoing
9	1612	Construction of Marine Training College buildings and procurement of Training equipment	Ongoing
10	1615	Rehabilitation of KIA Terminal Building	Ongoing
11	1617	Establishment of One Stop Border Posts (Chiponde and Mchinji)	Ongoing
12	1804	Construction of Likoma Jetty	Ongoing
13	1926	Expansion and Rehabilitation of office blocks for Buildings Department Offices	New
14	1928	Expansion and Rehabilitation of office blocks for Buildings Department Regional Offices	New
15	1946	Feasibility Study & Designs for Construction of New Mzuzu International Airport	Ongoing

Figure 45: Successfully registered project

5.8.2 Template Generator

This shows how to generate new and pre-filled Project Templates Proposals, Quarterly Progress Reports and PFM-IT Tools for use in the next fiscal year and for repairing.



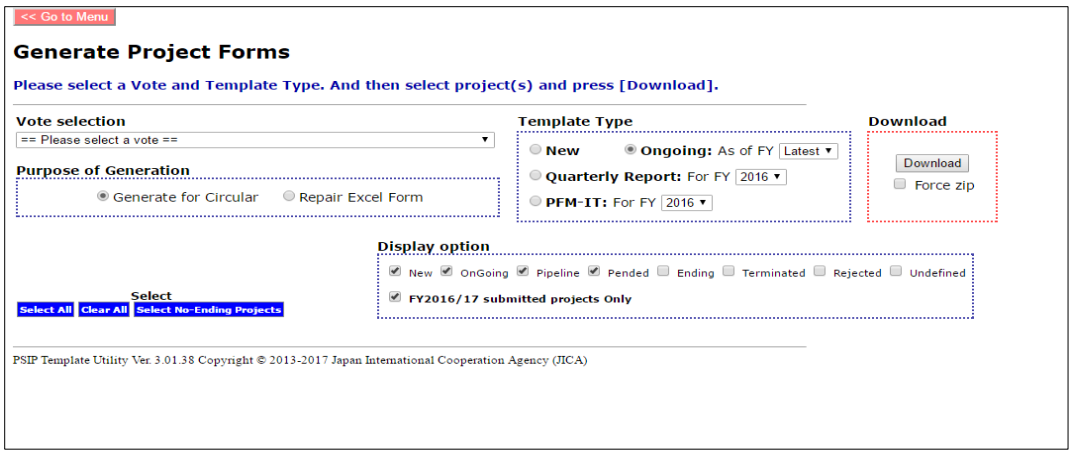


Figure 46: Template generator

To download select the vote of choice, check on the purpose of generating the template, check the template type against the year from which you want to generate the template, check the status to be generated project. Then click on the Download.

5.8.3 Process Management

This is a PSIP process management function where PSIP Staff can input Site validation reports of projects, make project initial and final appraisal and can also input ministerial

minutes. It also shows the state of the proposal by showing number of errors, shows if Quarterly Progress Report was submitted, project proposal transition and budget transition.

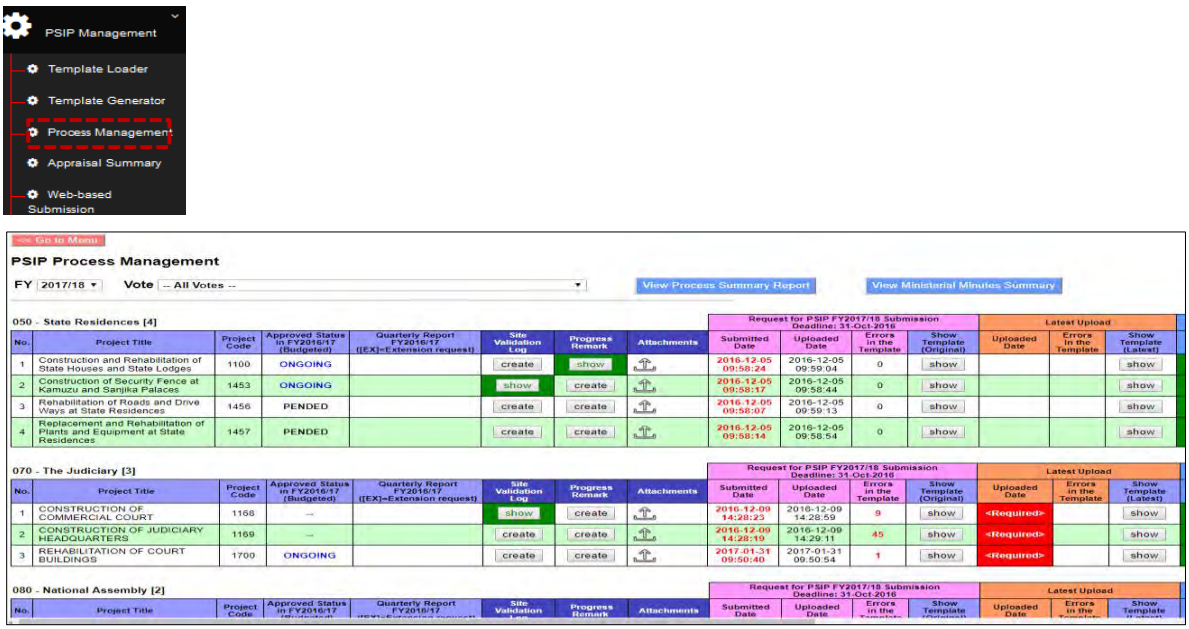
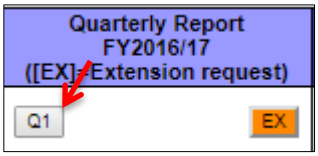


Figure 47: PSIP process management screen

5.8.4 Quarterly Report

(1) Click on the Q1 icon, this will navigate to the quarterly report



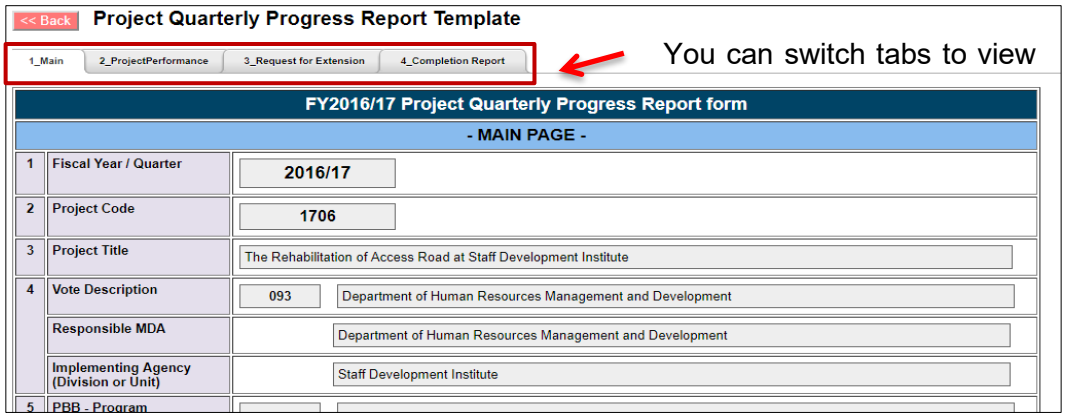


Figure 48: Quarterly report view

(2) To View the Extension request form

An approval decision is made from the proposed extension request form from an MDA. One can reject the request, approve the decision or withdraw the approval decision by further clicking on the Approval Buttons.

Figure 49: Extension approval decision screen

5.8.5 Site Validation Report

(1) To create a field validation report, click on create in the site validation column against the project monitored and once the create button is clicked, a window pops up where the results of site validation are inputted.

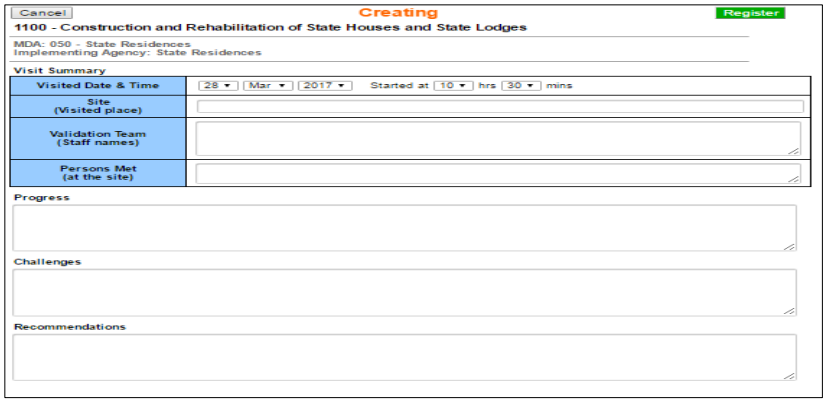
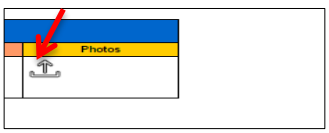


Figure 50: Data input screen for site validation log

(2) After data input register by clicking on the “register button

(3) To input Photos



(4) Drop pictures in the drop files which then will appear in the uploaded.

Figure 51: Site validation pictures upload function

(5) To view the input, click on Show button icon

(6) Upon a click the show button navigates to the registered data screen.

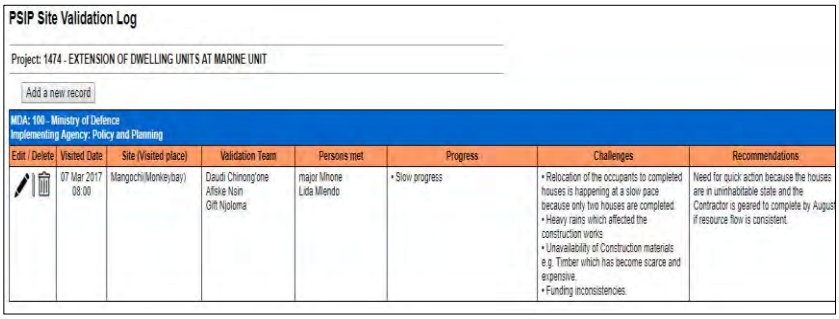


Figure 52: Site log data

(7) To add new data to the Site validation log Screen, click on the add new record.

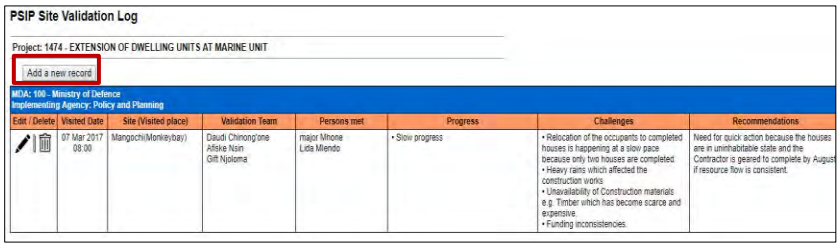


Figure 53: Add new data button

5.8.6 Project Remark

(1) To create any updates on the project and remarks click on the “Create” in the column of project remark in the process management screen.

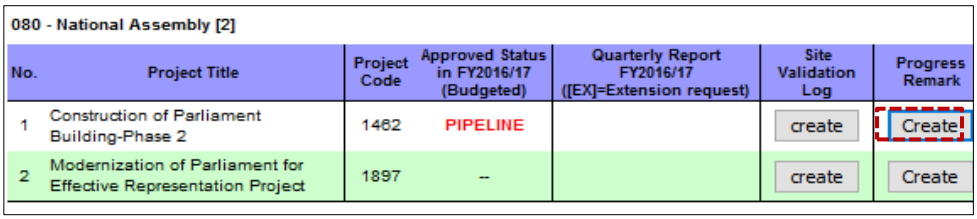


Figure 54: Create button for progress remark

- The click button navigates to the data input screen

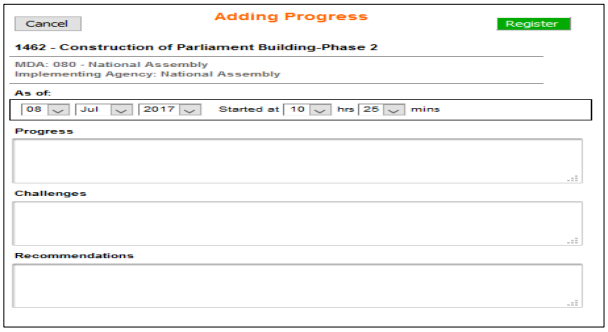
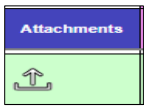


Figure 55: Input progress data screen

(2) After data input register by clicking on the “register button”.

5.8.7 Other relevant attachment

(1) To add attachments pertaining a project click on the attachment icon in the Process Management Screen.



(2) Upon a click to the attachment icon, the Database navigates to Uploading files window. Drop files in the drop files here which then will load automatically, then close the window.

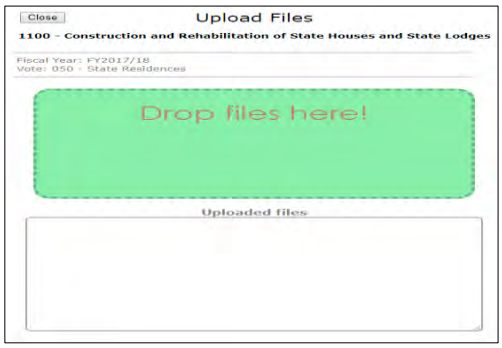


Figure 56: Attachment data input screen

[To view registered data]

(1) Click on the attachment show icon in the attachment column of the Process management screen. From which upon a click on the file link the file opens

(2) Upon a click of the button it navigates to a new window bearing a dialogue box of registered data. Click on the file name to view the content.

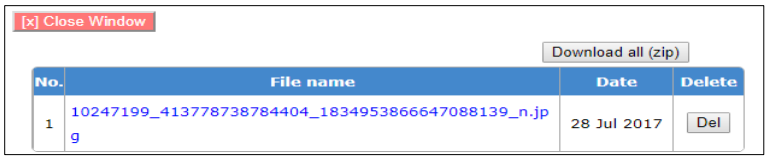


Figure 57: File attachment

(3) To download all files, click on the download button in the registered data window. The files will download

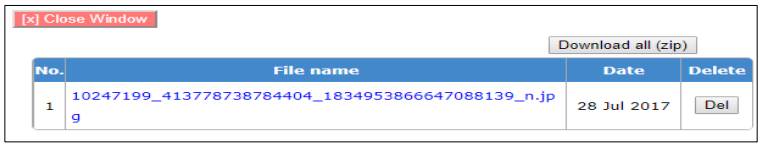


Figure 58: Download attachment button

(4) To delete the file, click on the delete button in the same registered data window.

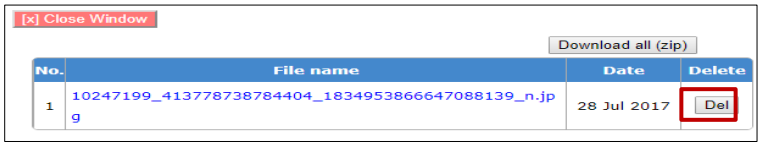


Figure 59: Delete button

5.8.8 Project Template Contents

(1) To show template click on the “show” PSIP Database will navigate to the template

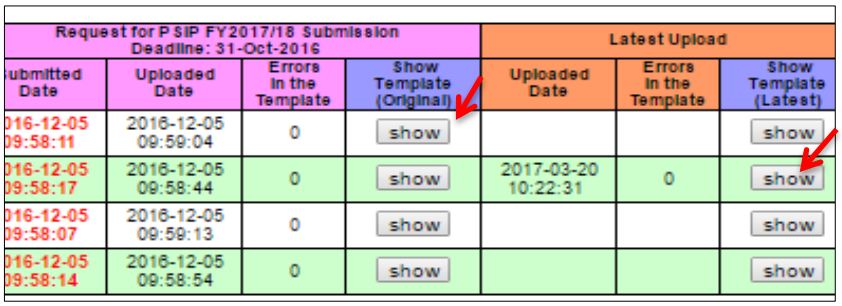


Figure 60: Show project template

5.8.9 Initial Appraisal

(1) To make initial appraisal click on the initial appraisal button, this will navigate to the Appraisal Matrix.

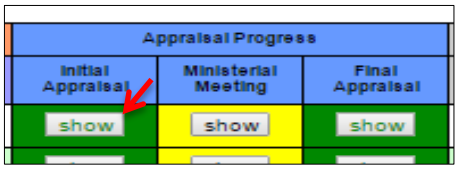


Figure 61: Show appraisal data

(2) Initial Appraisal Screen pops up after clicking on the initial appraisal button as shown below.

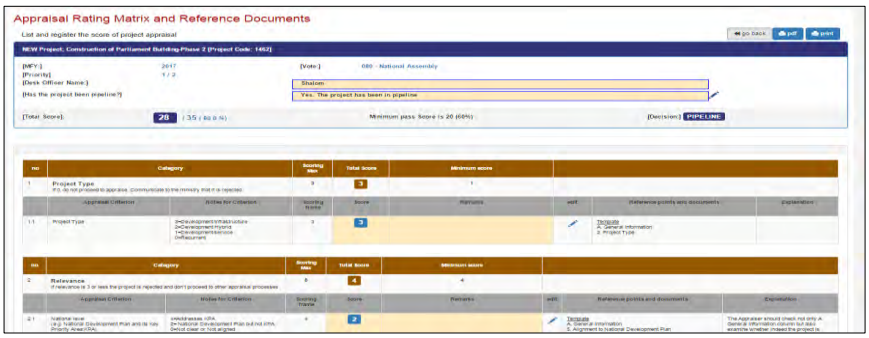


Figure 62: Appraisal rating matrix and reference documents

5.8.10 Final appraisal

This screen shows the final appraisal decision that is made by the desk officer; the desk-officer may score 1 or 0 according to the proposed requirement. This requirement is made complete by checking by summing up the individual scores from the initial appraisal.

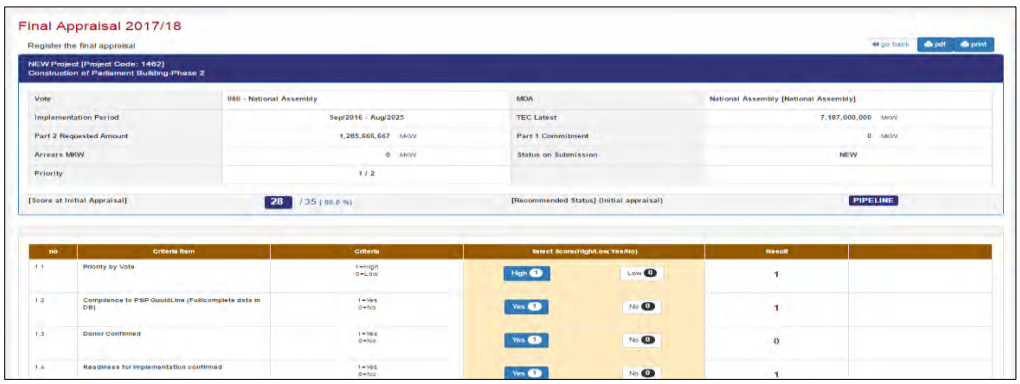
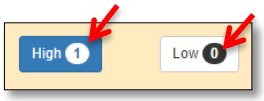


Figure 63: Final appraisal screen:

(1) A score can be given to the requirement by clicking on the High button or low. High gives a score of one and 0 a score of Zero.



(2) Critical information for a project can be typed in the dialogue box by clicking on the edit pen.

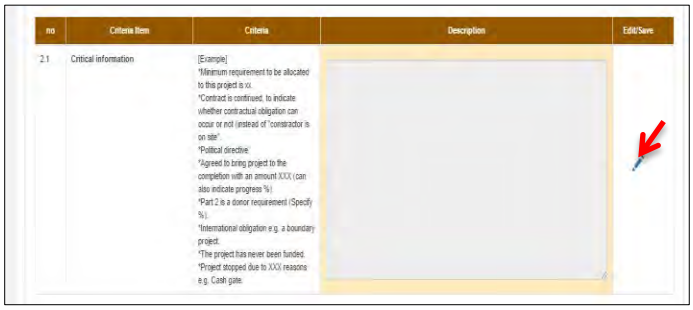


Figure 64: Edit function

(3) Proposed allocations can be placed in the allocations box by clicking in the edit button, which makes the cells editable.

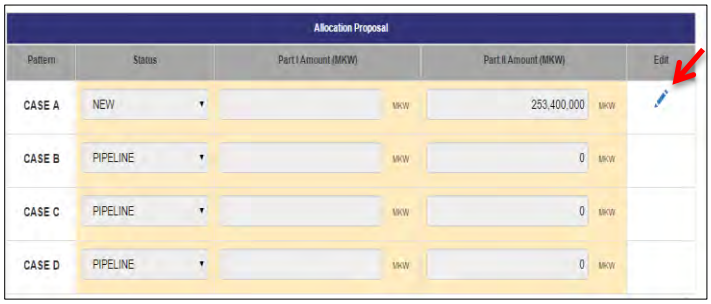


Figure 65: Allocations edit function

5.8.11 Ministerial Meeting Minutes

To input Ministerial Meetings minutes, click on the Show in the Ministerial meeting column, this then navigates to the data input screen.

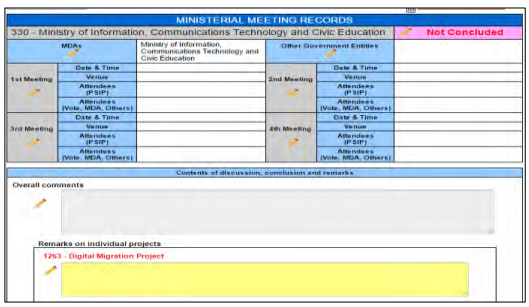


Figure 66: Ministerial minutes data input screen

5.8.12 Summary of Minesterial Minutes

Click on the View Ministerial Minutes Summary in the PSIP process management window.

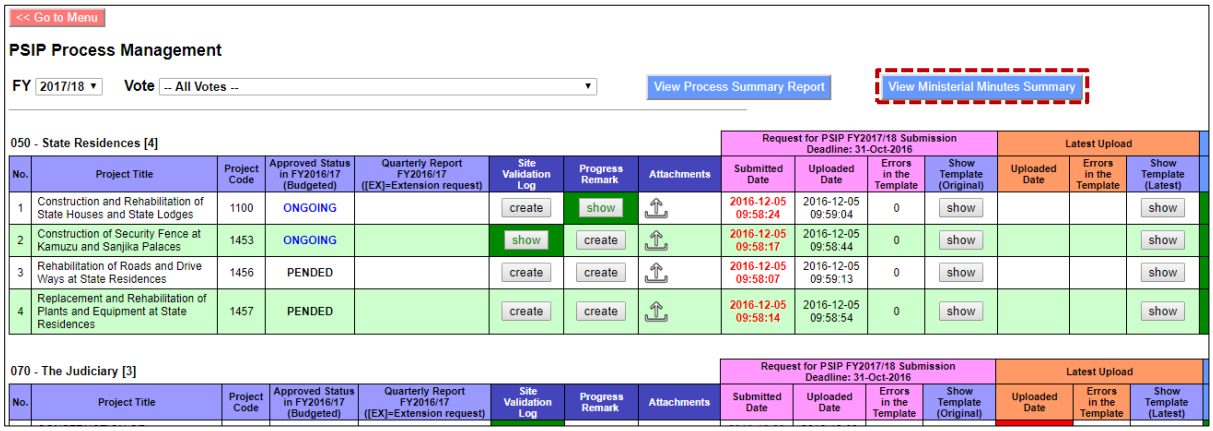
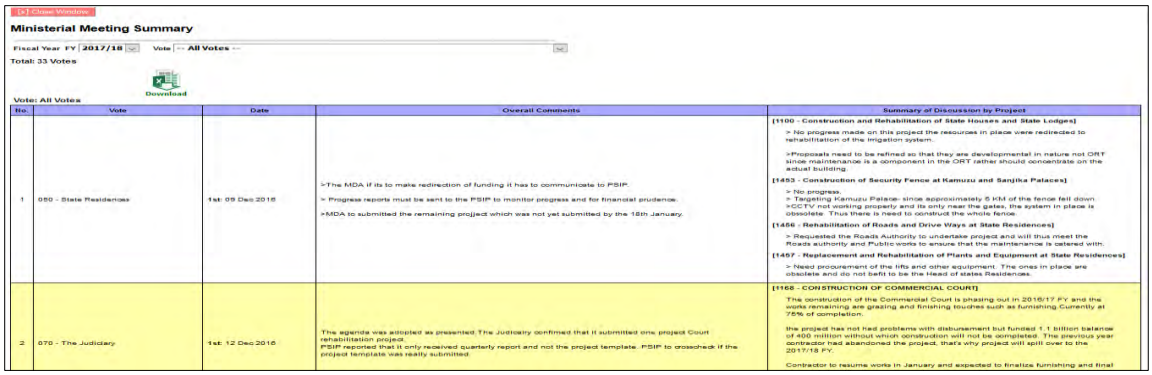
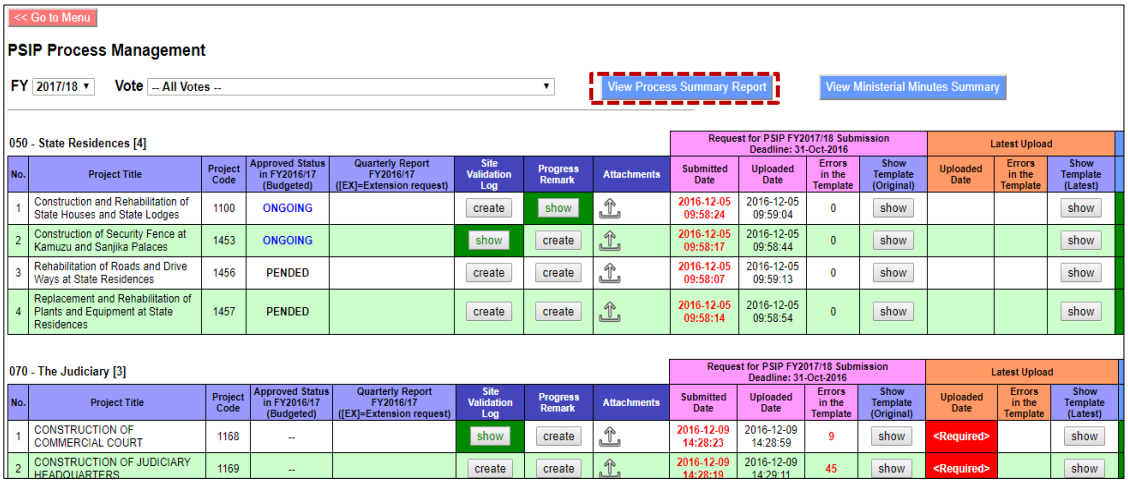


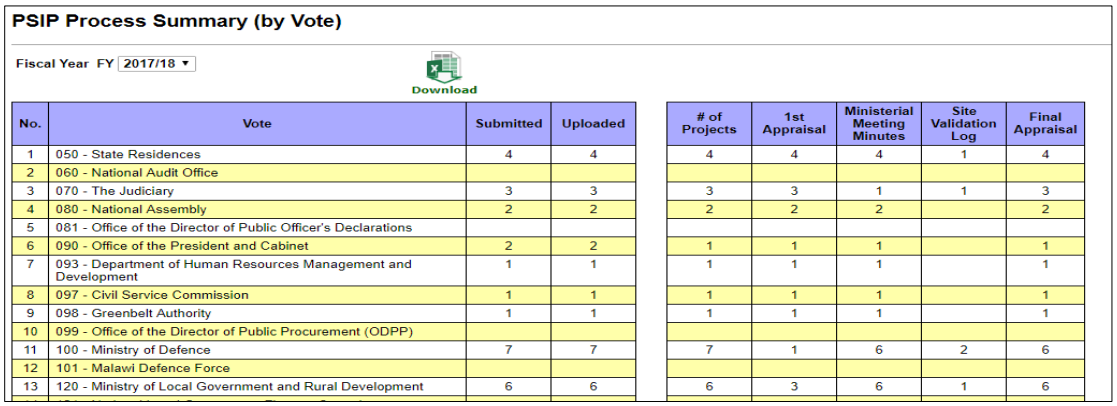
Figure 67: View ministerial minutes button



5.8.13 Process Summary Report

Click on the View process summary report button in the PSIP process management window.





PSIP Process Summary (by Vote)

Fiscal Year FY 2017/18 ▾ Download

No.	Vote	Submitted	Uploaded	# of Projects	1st Appraisal	Ministerial Meeting Minutes	Site Validation Log	Final Appraisal
1	050 - State Residences	4	4	4	4	4	1	4
2	060 - National Audit Office							
3	070 - The Judiciary	3	3	3	3	1	1	3
4	080 - National Assembly	2	2	2	2	2		2
5	081 - Office of the Director of Public Officer's Declarations							
6	090 - Office of the President and Cabinet	2	2	1	1	1		1
7	093 - Department of Human Resources Management and Development	1	1	1	1	1		1
8	097 - Civil Service Commission	1	1	1	1	1		1
9	098 - Greenbelt Authority	1	1	1	1	1		1
10	099 - Office of the Director of Public Procurement (ODPP)							
11	100 - Ministry of Defence	7	7	7	1	6	2	6
12	101 - Malawi Defence Force							
13	120 - Ministry of Local Government and Rural Development	6	6	6	3	6	1	6

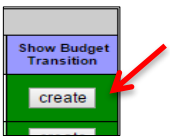
Figure 68: PSIP process Summary screen

5.8.14 Project Transition Screen

(1) To view the Project Transition screen

Project Status Transition			
On Submission	PSIP Recommended	On Budget Approval	Revised in the Mid Year
NEW	--	--	--
NEW	--	--	--

(2) To Create and edit transition budget data.



The create button will navigate to the project status and transition Screen.

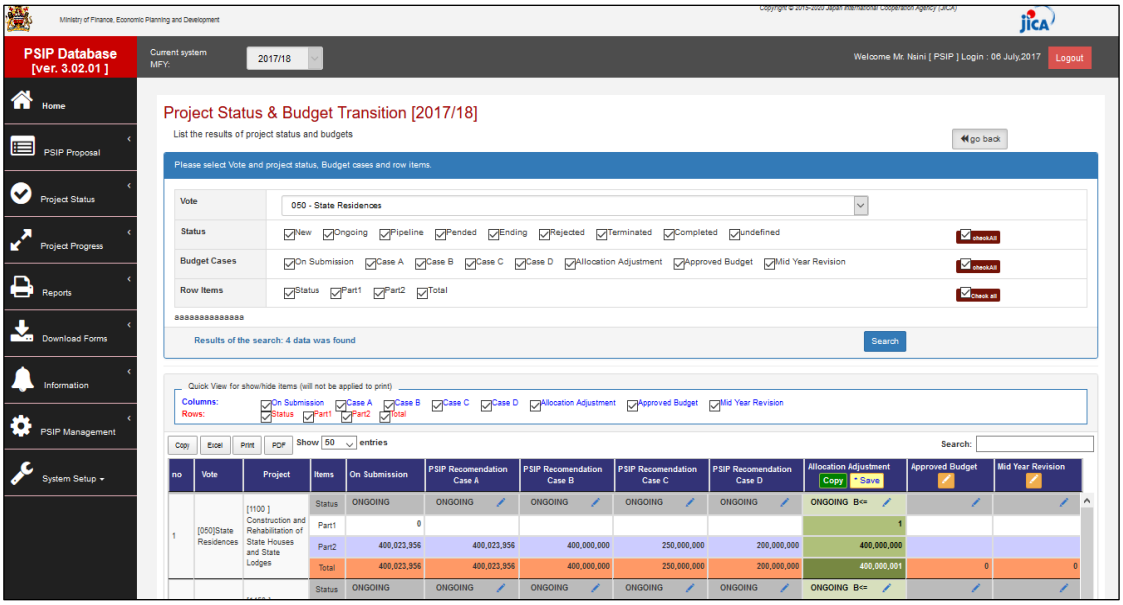


Figure 69: Project status and budget transition screen

5.8.15 Copy Scenario for PSIP Allocation

(1) Click on the copy on the Project Status and Budget Transition to input the proposed status allocation according to the agreed case ceiling allocation afterwards check on the case and click copy on screen.

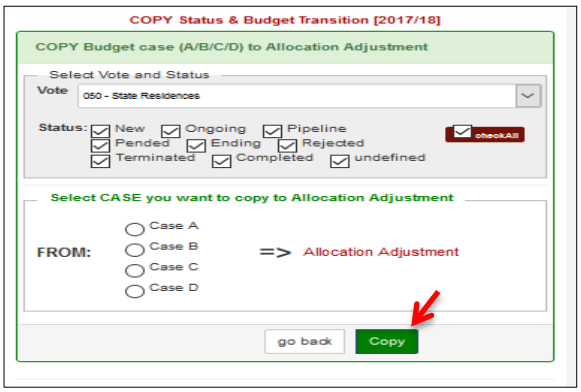


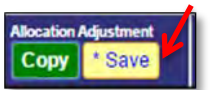
Figure 70: Copy allocation button upon selecting a case

(2) You can change the Vote or Project status to copy all the corresponding information from select case to Allocation Adjustment at once.

[note] When you copy the scenario case from A-D, you are working **in the temporal adjustment** and **it is NOT yet reflected as PSIP decision visible for MDA users** until you save the data in the next step.

5.8.16 Save scenario to Project table

(1) To save the copied case of allocation as PSIP decision, click on save button on the Project Status and Budget Transition (2017/18) then click on save.



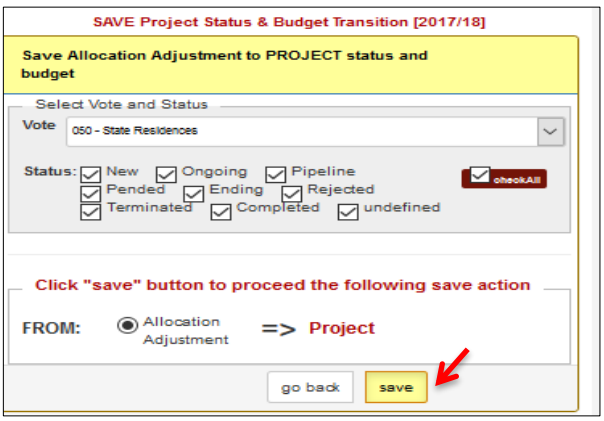


Figure 71: Save allocation adjustment case

After this save operation, the Allocation Adjustment information is reflected to “Project Status” menu and **the status will be visible for MDA users**.

In this page, you can change votes, or select all votes to save all status and budgets from one of four scenarios. It may take few minutes to save all allocation adjustment to the table.

5.8.17 Appraisal Summary Results

(1) This shows the summary of appraisal results of a selected financial year’s submitted projects. It also aggregates requested amount for both Part 1 and Part 2.

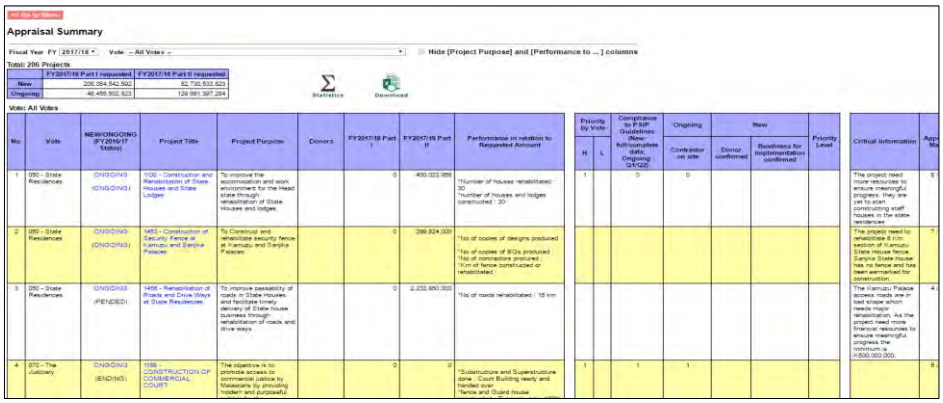


Figure 72: Appraisal summary screen

(2) If you click on the Sigma it navigates you to appraisal statistics for appraised projects.

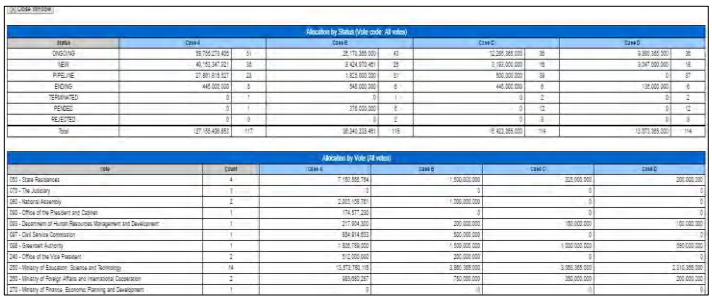


Figure 73: Statistics screen

(3) If you click on the download function the appraisal summary sheet gets downloaded in excel format.

(4) If you click on the project title link, this will navigate to the proposal file.

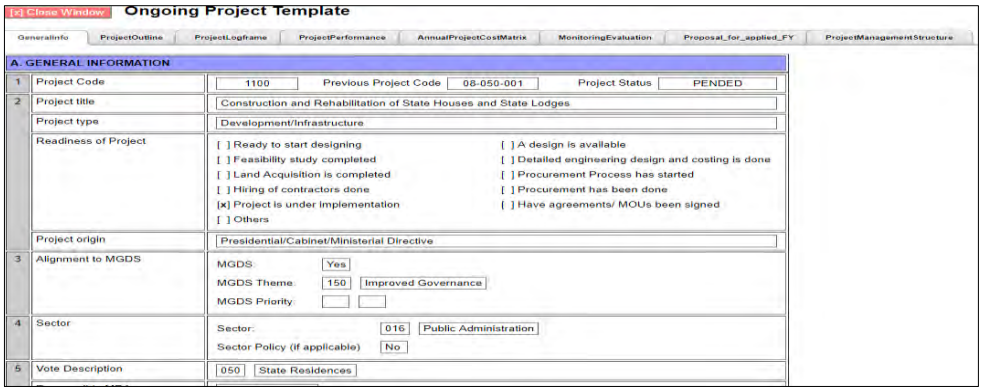
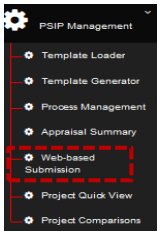


Figure 74: Project proposal file

5.8.18 Web-Based Submission

This is a web based loading function. It loads a Project Template Proposals and Quarterly Progress Reports to the PSIP Database. Open the source project proposal or Quarterly Progress Report folder and drag the Proposal or Report in the Auto in folder. The project then registers automatically.



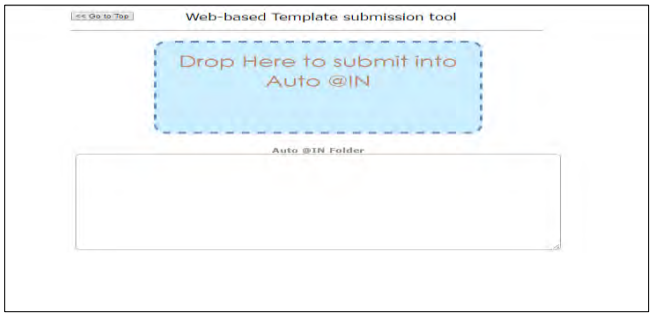
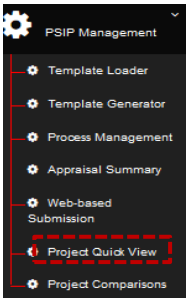


Figure 75: Web based data submission screen

5.8.19 Project Quick View

All projects status can be viewed for current year and proposed next fiscal year, you can also view if the Quarterly Progress Report has been submitted or not by selecting the year and vote. Projects can be viewewed per vote by selecting on the vote list.



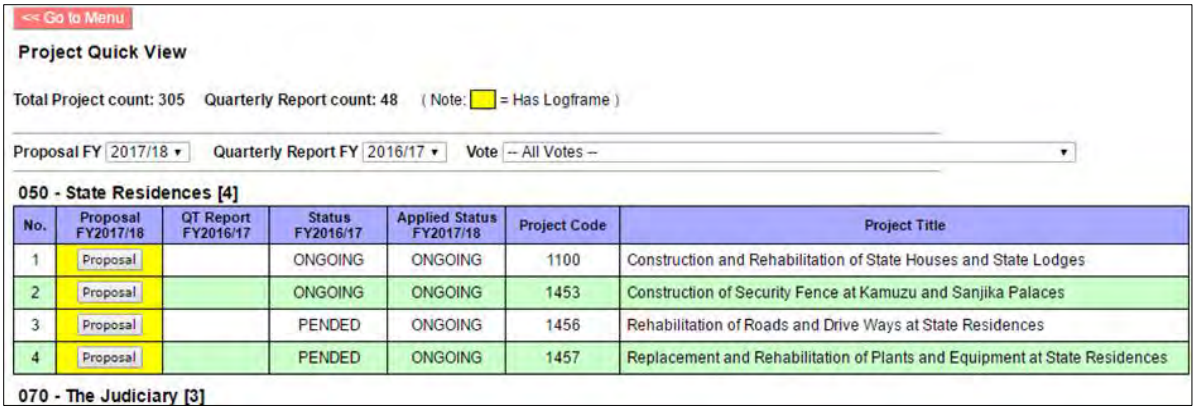
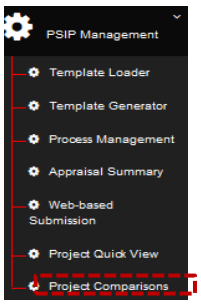


Figure 76: Project Quick View

5.8.20 Project Comparison

A project can be compared in regard of the fiscal year, performance, period of implementation. etc.

(1) To compare project, click on project comparison submenu



(2) The click button for project comparison navigates to a new window

(3) Select vote of choice and select project and fiscal years upon which comparison is made.

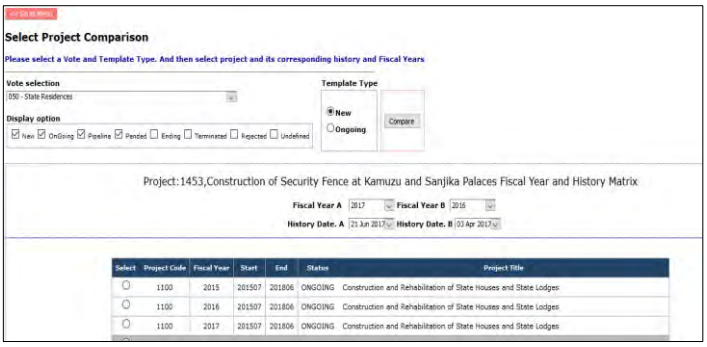


Figure 77: Project comparison screen

(4) Upon selecting the vote, the status and fiscal year click on compare.

(5) Upon the click on the compare button it navigates to a new window with a list of where the comparisons are made

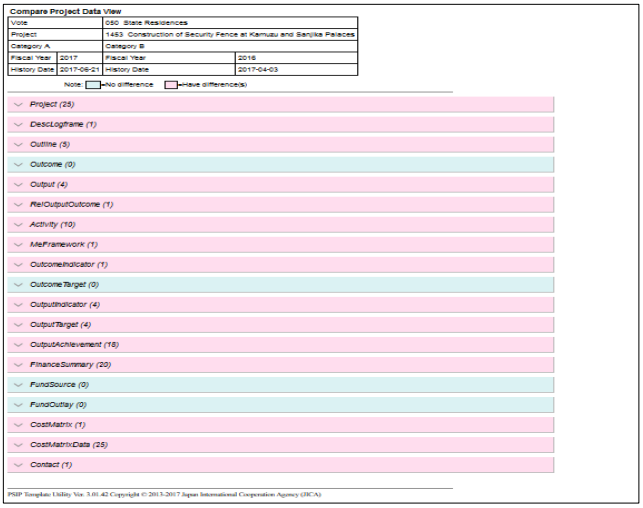


Figure 78: Project data view

(6) Click on any to check the comparisons. E.g. output comparison.

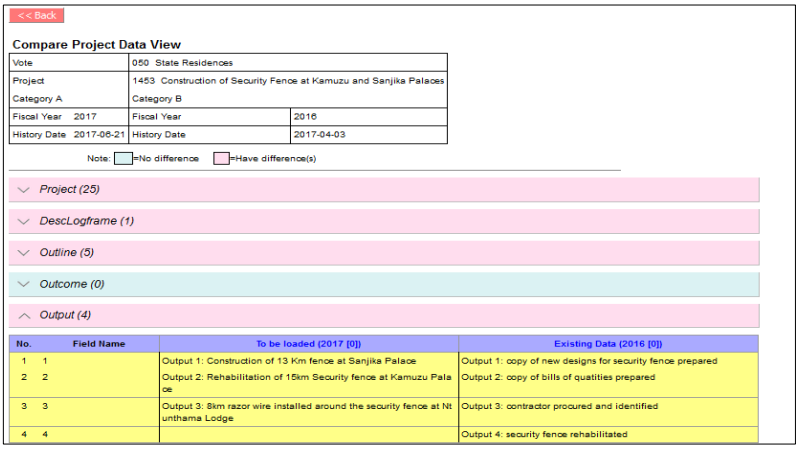
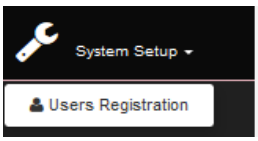


Figure 79: Project data view

6. System Setup

6.1 User Registration (PSIP/Admin Only)

To view the user registration, click on the “system set up” and click user registration. submenu.



(1) This captures all registered users. PSIP staff can only view the user data, while Administrators can edit/delete data.

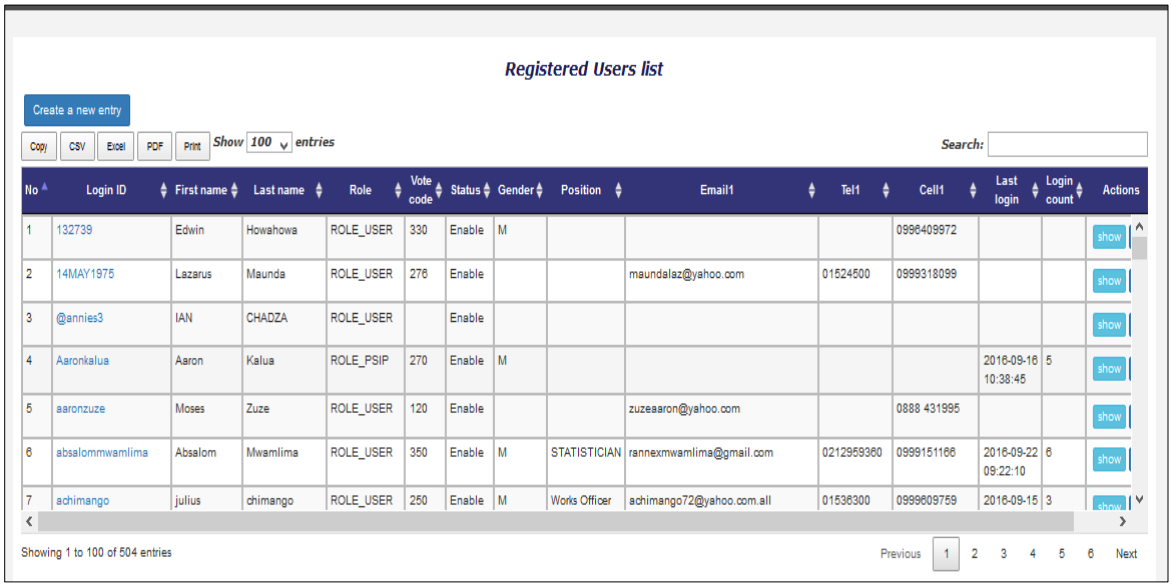


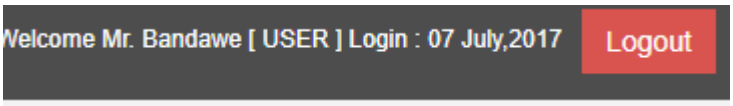
Figure 80: Registered PSIP database users

(2) If you click on the Login Id and Show button in the action Column, it navigates you to the form filled by the user.

Figure 81: Registered users

6.2 Logout

A connection called a session is established each time a user login. To terminate that session the user must logout of the system.



7. User Privileges

7.1 User Roles and privileges

Some restrictions have been placed on the user accounts, which will vary according to the type of user group and the stage of the Public Sector Investment Programming (PSIP) cycle. The access permissions are as follows.

Table 4: Roles and privileges

User Group	Rolls and privileges	Targets
Guests	Guest user can view proposal submissions but cannot download nor view the submission status.	Registered users interested to see the PSIP information including donors
MDA Users	MDA users can view proposal data and download, but no right to edit documents.	MDA users registered to database
PSIP Unit	PSIP officers can edit all Ministries' information such as the project status or appraisal status	The PSIP Officers
Administrator	Administrators will be able to edit all data and manage accounts, database, etc.	IT Officials assigned to maintain the system and database.

7.2 User access authorization

The access control to the Menu and Pages are introduced as shown in the following table.

Table 5: User access authorization

Menu	Submenu	Guest/MDA users	PSIP Unit	Admin	Remark
PSIP Proposal	Submission Status	View except Guest	View	View	
	Project Details	View	View/Edit	View/Edit	

Menu	Submenu	Guest/MDA users	PSIP Unit	Admin	Remark
	Show Summary	View	View	View	Excel download allowed to all
Project Status	Status & Approved Budget	View	View/ update status	View/ update status	Display Approved budget and status
Project Performance	Quarterly Progress Report list	View	Edit Extension Request	Edit Extension Request	
	Quarterly Progress Report detail	View	View	View	
Reports	Project List	View	View	View	Excel download to all allowed
Download Forms	New/ Pipeline/ On-going/QT/ PFM-IT	Download except Guest	Download	Download	
Information	Announcement/ News Letter	View	View	View	
PSIP Tools	Loader/Generator/Process Management/Appraisal Summary/Web based Submission/Project Quick View	N/A (not shown)	Right to execute	Right to execute	
System Setup	Users (Users registration management)	N/A (not shown)	View	All rights to edit/delete	All user master Database Maintenance
	PSIP Admin Tool	N/A (not shown)	N/A (not shown)	All rights to edit/delete	All master Database Maintenance
	Template Generator(Batch)	N/A (not shown)	N/A (not shown)	Can generate	

8. Proposal submission and PSIP Process

8.1 Proposal Submission flow

Most information of the Proposal and Quarterly Report is “Read only” with a few editable areas in the proposal on the PSIP Database. The original Project Proposal and Quarterly Report are filled in Excel file which MDA users send to the PSIP unit by mail. The PSIP Unit is responsible for the registration of the sent information into the database. If MDA users need to modify the information, they change the contents of the Excel Template and send it again to the PSIP unit.

The following figure represents the proposal submission flow.

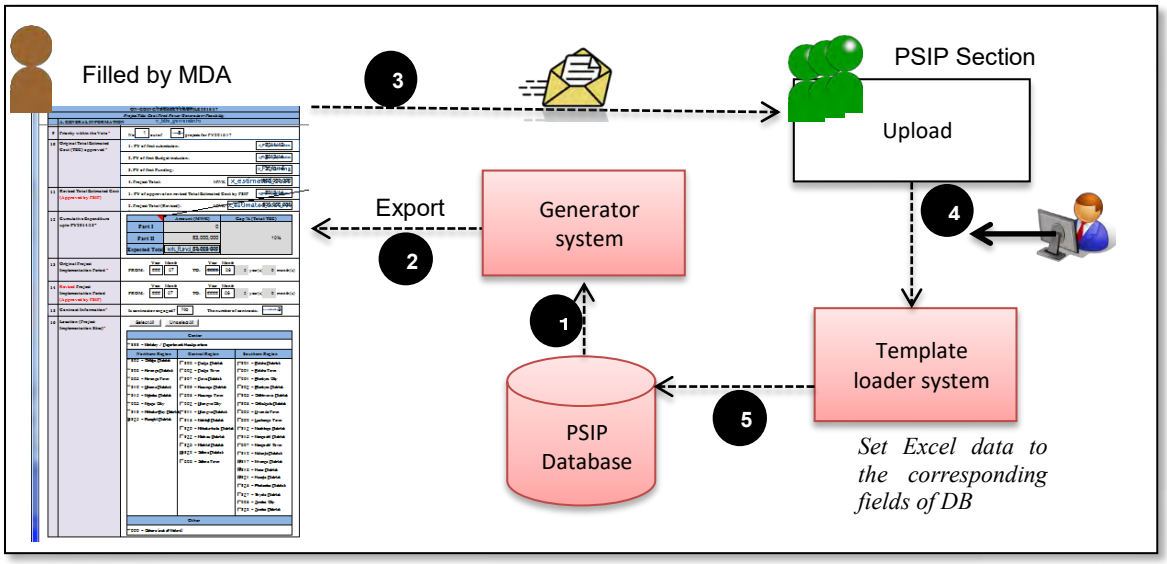


Figure 82: Proposal Submission flow

1) The proposal information already registered to the database is retrieved from the system (in case of On-going).
2) The retrieved data is exported to the corresponding fields of Excel Template (in case of On-going).
3) After MDA users fill in the information in Excel Template, they send it to PSIP Unit.
4) At PSIP Unit, the Excel Template is loaded to the system.
5) The system finally registers the proposal information to the PSIP Database.

8.2 During PSIP Process

As described above, MDA users can create information by Excel Template for New and On-going Projects after the announcement of Circular No1 and for a certain period until the project submission deadline. If a user needs to change project details of the already submitted project, it is required to contact the PSIP Unit and justify their reason for change. Changing

project life span will need authorization by way of Extension Request from MFEPD and hence data revision will be approved by MFEPD.

The MDA users will be given about one month to prepare their proposals. During this period, the PSIP Unit will give them technical assistance on how to fill in the template where necessary. To secure enough time for the proposal appraisal by the PSIP Unit, the proposals must be submitted on time.

9. Questions and Answers

Below is a list of questions that a user might ask. If MDA users encounter any problem beyond their control, they will contact the PSIP Unit on **01 788 888 (Ext: 150/164) or psipsubmissions@gmail.com.**.

9.1 System

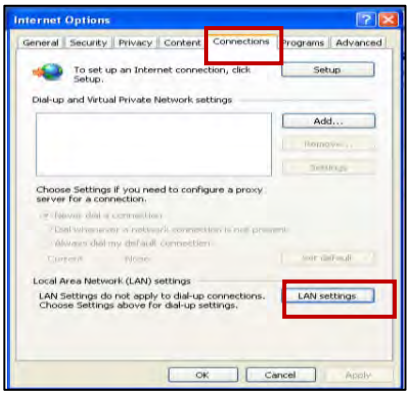
Q1. I cannot connect to the Intranet Database
A: Firstly, confirm that you are on the GWAN network with your Network Administrator. If you are on the GWAN network, check if your network cable is properly connected. If your cable is connected, check if there is a connection by looking for an icon of two computers at the bottom right corner of your screen (in Windows 7). If you are connected and still cannot access the database, call the PSIP Unit to inform that the database is not connected.

Q2. My connection is slow (Only for GWAN Users)

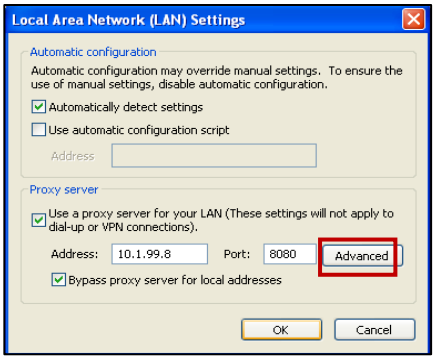
A: On the GWAN Network each command goes via the Proxy Server. This sometimes slows the speed with which the user accesses the database.

The users can bypass the GWAN Proxy server for the PSIP Database which allows them a direct connection to the database. This will also enable them to access to the database even when the Proxy Server is down. To bypass the Proxy you can configure the following settings (in case of Internet Explorer):

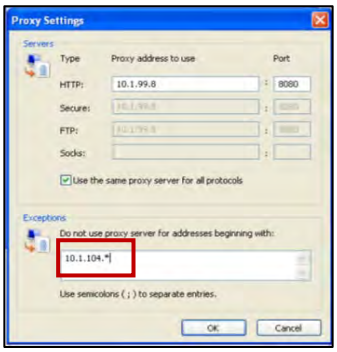
1) Go to Tools on the Internet Explorer menu bar.
2) On the Drop down list select Internet Options.
3) From the window click on Connections on the tabs at the top of the window
4) Click on LAN Settings on the window



5) For the GWAN connection, you may have already proxy setting with the proxy IP address.
6) Click on Advanced.



7) Type “10.1.99.*” on the Exceptions box under "Do not use proxy for addresses beginning with:" which will allow you to bypass the proxy Server.

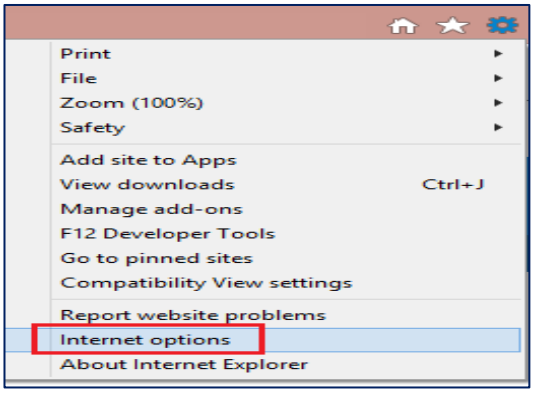


8) Click **OK** on the three pages to activate the settings.

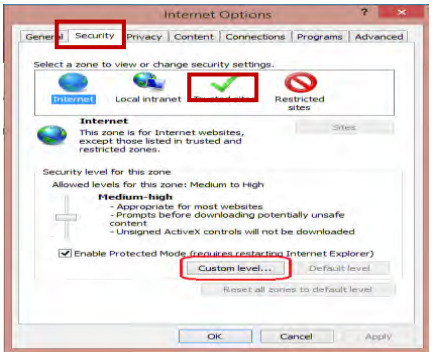
Q3. How can I enable JavaScript in internet explorer

A: The system requires JavaScript enabled since in some pages the JavaScript function is applied. The following procedure explains how to enable JavaScript in Internet Explorer.

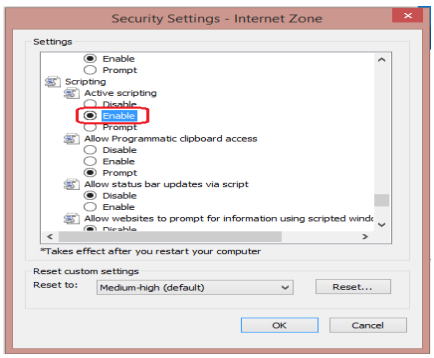
1) On the web browser menu, click Tools or the "Tools" icon (which looks like a gear), and select Internet Options.



2) When the "Internet Options" window opens, select the Security tab.
3) On the "Security" tab, make sure the Internet zone is selected, and then click on the "Custom level..." button



4) In the Security Settings – Internet Zone dialog box, click Enable for Active Scripting in the Scripting section.



5) When the "Warning!" window opens and asks, "Are you sure you want to change the settings for this zone?" select Yes.
6) Click OK at the bottom of the Internet Options window to close the dialog.
7) Click the Refresh button to refresh the page and run scripts.

10. Definitions and acronyms

Below is a list of definitions, acronyms and abbreviations that have been used in this document.

10.1 Definitions

Table 6: Definitions and Acronym

Word	Definition
MySQL	An open source database engine used to manage data in a relational database management system.
PHP	Is a scripting language used to write web applications.
User	A person who makes use of a system.
Database	Consists of an organized collection of data for one or more multiple uses.

10.2 Acronyms and abbreviations

Table 7: Acronyms and abbreviation

Acronyms and abbreviations	Definitions
Admin	Administrator of the system
CEPSIP	Capacity Enhancement in Public Sector Investment Programming
DAS	Development Assistance Strategy
GWAN	Government Wide Area Network
JICA	Japan International Cooperation Agency
MFEPD	Ministry of Finance, Economic Planning and Development
PSIP	Public Sector Investment Program
URL	Unified Resource Locater

11. Annexes

11.1 Annex1: Registration Form

PSIP Database User Account Registration Form	
If users need an account they are required to fill in the form bellow and hand it in to the PSIP Unit.	
Date:	
User ID: (Up to 20 characters)	
First Name:	
Last Name:	
Ministry:	
Position:	
Office Location:	
P.O Box:	
E-mail 1:	
E-mail 2:	
TEL 1:	
TEL 2:	
Fax:	
Cell 1:	
Cell 2:	
Signature	

Official Use only

Approved:	☐ **Yes** ☐ **No** **[Reason:]**
Approved Date	
Initial Password:	
Approved By:	
Registered By:	
Signature:	

Government of Malawi

Public Sector Investment Programme (PSIP)

PSIP DATABASE (Ver.4)

USER MANUAL

For Administrators

The Ministry of Finance, Economic Planning and Development
Department of Economic Planning and Development
P. O. Box 30136
Lilongwe 3, Malawi

July 2017

Supported by

Project for Capacity Enhancement in Public Sector Investment Programming II (CEPSIP II)

Japan International Cooperation Agency

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Document History for PSIP Database (Ver.4)

Date	Revision	By	Remarks
20 May, 2016	2.0	Yuko Shiraishi	Initial version
31 Mar, 2017	3.0	Yuko Shiraishi	PSIP Database 3 new aspects included
17 Apr, 2017	3.04	Yuko Shiraishi	Layout adjusted
25 July 2017	4.00	Afiske Benjamin Nsini	PSIP Database Ver 4 new aspects included
25 July 2017	4.00	Thokozani Bandawe	PSIP Database Ver 4 new aspects included
25 July 2017	4.00.01	Gift Njoloma	PSIP Database Ver 4 new aspects checked
10 Aug 2017	4.00.02	Afiske Benjamin Nsini Thokozani Bandawe	New screenshot and functions included
17 Aug 2017	4.00.03	Ishikawa	Add new features of Submission status and Template Generation (Batch)

1. Introduction

As part of the implementation of the Capacity Enhancement for Public Sector Investment Programming, a Public-Sector Investment Programming (PSIP) database was firstly developed in the CEPSIP-1 Project[1]. The database system is custom web-based software solution using PHP and MySQL database with a Web front-end. Being web-based, the system is accessible to all on the Government Wide Area Network (GWAN) and Internet users. Actually, the database serves as a platform for submitting project documents and handling other PSIP management processes.

The next phase of CEPSIP-2 project[2] started aiming at the improvement of Database and Manuals/Handbook for PSIP, further harmonization of the process of PSIP, and the capacity building to use improved Database and Manuals/Handbook for PSIP. As one of the activities to attain those purposes, the system was upgraded to Ver.1.1 to reflect the modification of proposal templates for fiscal year 2014/15, as well as the several environmental changes. The second edition covered those system modifications applied until March of 2014, where the submission of Word Proposal Template was employed.

The next version 1.5 was launched after the proposal templates for fiscal year 2015/16 was released. The design and system structure followed the ver.1.1, developing new mechanism of Excel Template Proposal for the submission together with other new functions.

The PSIP Database was upgraded to ver.2.0 released on December 2015, in line with the new proposal templates fiscal year 2016/17 where the additional new features to support appraisal decision procedures and quarterly report managements were introduced. This version applies the whole refactoring of the system (mainly database and program structure), to be able to get the better maintainability, scalability and flexibility, which means that the upgraded version enables to respond to the flexible and quick modifications according to the organizations or business requirements. The design of the screens on the Web has been completely renewed as well for the better user interface.

On September 2016, the version was upgraded to 3.0 after the Excel Proposal Template ver.3.0 was released. In new version, the information that had been managed until then individually or somewhere in local storage was integrated into the centralized database. This centralized management of information dynamically improved the PSIP staff's

[1] CEPSIP 1; Capacity Enhancement in Public Sector Investment Programming Phase I (from July 2009 to July 2011)
[2] CEPSIP 2; Capacity Enhancement in Public Sector Investment Programming Phase II (from March 2013 to September 2017)

business process by hand to systematic one. With this version, the submitted proposal by MDA user is appraised on the Web to make quick decision, what was discussed in the ministerial meeting is all recorded in the database effectively to support the appraisal and the ability to make budgetary transitions. Further, as an MDA user support, the extension request submitted by MDA user or feedback of the appraisal is visible on the Web.

In the 2018/19 fiscal year, the database will now start using the new version 4.0, released on August 2017. This latest version focuses on providing better feedback to the MDA users with the valuable information such as the result of the requested project extension. The submitted reports by MDA users such as Project Extension Request or Completion Report is displayed as well on the Web page with the same Excel format. Regarding the budget, the requested amount and approved budget can be traced on the Status & Budget screen for your reference. On the other hand, the powerful management tool has been provided for PSIP Unit where all the process of each project can be managed and controlled from its submission until approval of the budget.

2. What is PSIP Database

2.1 Overview of PSIP Database

The overall objective of the PSIP is to facilitate efficient utilization of Malawi's human, natural, physical and social resources to improve the country's economic prospects and further development of public services. This objective is attained through a careful and thoughtful process of planning and management of development projects across the sectors.

To achieve this objective, PSIP provides a mechanism that screens and confirms public investments projects to ensure that they are in line with the priority areas of the MGDS and that the implementation of such projects is done in the most cost effective and efficient manner. The PSIP Database tool was developed to contribute to the PSIP Unit and stake holders to achieve this goal.

All MDA users are required to submit their proposed development projects to the PSIP Unit under Development Planning Division of the Ministry of Finance Economic Planning and Development (MFEPD) during the budget preparation process. The PSIP unit validates these project proposals. After the deadline of PSIP proposal submission, a series of a ministerial meeting is convened where Ministries present their project proposals. The proposals are screened by MFEPD; this process involves discussions with line ministries so that programs/projects that do not conform to ministerial, sectoral, or national goals and objectives are not accepted for inclusion in the PSIP. The project proposals are analyzed

and then are judged to be approved, rejected or referred back to line Ministries for further refinement.

The database system allows MDA users to submit their proposals electronically through an Excel Template file which data is later stored systematically to the Database by PSIP Unit staff. The submitted proposal is expected to permit MDA users to search and list all the projects that are presented to the PSIP Unit and even view details pertaining to projects that are implemented, ended, rejected, pipelined or terminated including the information in the past. The Monitoring and Evaluation Unit will easily link and correspond with the Development Planning Division since they can all access and refer to the same database. This will minimize problems that may arise due to lack of adequate information when monitoring and evaluating projects by the Malawi Government. Furthermore, this process will not only reduce the time it takes to submit, approve and monitor projects, but also decrease a lot of redundancies and human errors that were found in the previous manual system.

2.2 The roles of MDA

The planning section of each ministry plays a leading role in PSIP formulation at the line ministry level. By following the PSIP guidance, the planning section facilitates the compilation of data through the pre-designed template on the PSIP database, consolidates and submits the proposals to MFEPD. Then the MFEPD and the planning section of each line ministry have meetings to decide the project list to be included in the PSIP while considering the allocation amount of the development budget to each project within a given ceiling figure. The compiled data from line ministries is then submitted to MFEPD.

3. System Requirements

The following table shows supported versions and conditions of the system.

Table 1: System Requirements

System	version	Remarks
Excel Proposal Template	ver. 4.0 or higher version	
Operating System	Windows 7 or later version	
PSIP Database Web	ver. 4.0 or higher version	
Proposal Loader system	ver. 4.0 or higher version	
Proposal Generator system	ver. 4.0 or higher version	

System	version	Remarks
Browser	• Internet Explorer 10 or later • FireFox higher than ver.45 • Chrome higher than 49	- JavaScript must be enabled. - Pop up windows should be enabled.

This document assumes that the computer system has connection to the GWAN network or has direct internet connection to use PSIP Database application.

3.1 Intended Audience

This document is intended for those who have IT administrator role in the database.

4. Access to the System

You can access to the system by the following URL address.

Table 2: Access to the system

	URL address	Type of connection	Who can connect	Observations
1	http://psip.malawi.gov.mw	- Internet - GWAN intranet connection	- who has Internet connection - who connects to the GWAN network with Intranet connection - who connects to the JICA network at PSIP office	If your network is GWAN or JICA Wi-Fi connected, the connection will be made by Intranet. If you are out of GWAN having your own Internet connection from outside (such as Airtel Malawi), the connection will be by Internet.

4.1 How to access to the PSIP Home Page

Enter the above URL address to your browser either by Internet or Intranet connection according to your environment.

1) Open your browser (Internet Explorer, Firefox or Chrome)
2) In the address bar of the browser, type in;

http://psip.malawi.gov.mw

This will be immediately redirected to the secure page “https://psip.malawi.gov.mw”as seen in the Figure below.

Figure 1: Address bar

[Note] The difference is that what you enter is normal http protocol. The system immediately redirects to “https” secure protocol where all the information is encrypted.

3) This address takes you to the PSIP home page as seen below.

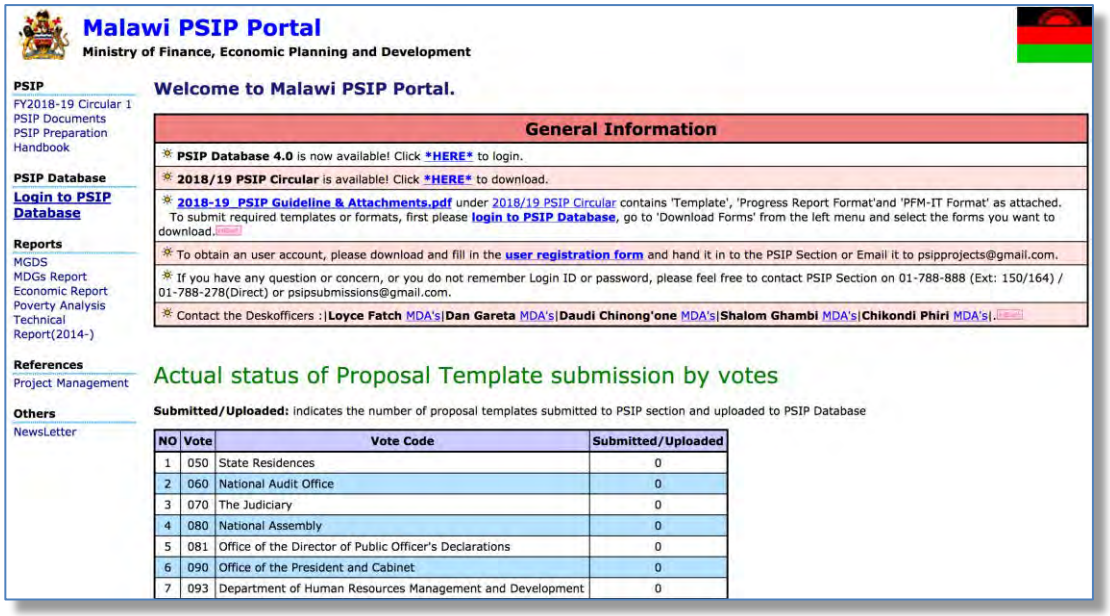


Figure 2: PSIP Home Page

This page has a menu on the left pane which will allow users to navigate easily from one page to the other. The home page is available for all users; in fact, no authentication is required to be able to obtain useful public information such as several manuals, reports and handbooks.

On the main page, the general information also shows some messages to the visitors.

Below the general information, actual status of current Fiscal Year Proposal Template submission by votes can be viewed by all visitors. This represents the number of projects proposals sent by each vote.

4.2 How to access to the PSIP Database

To use the PSIP Database system, you are supposed to be authenticated in the database as a user having Login ID and password registered beforehand.

1) To enter the database, click on 'Login to PSIP Database' from the left menu.

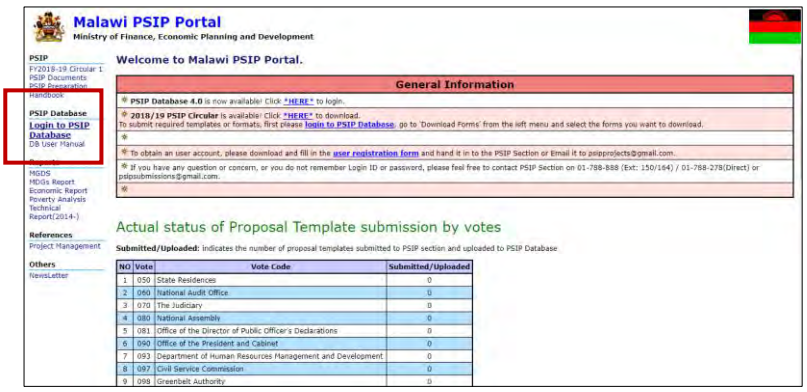


Figure 3: How to access to the PSIP Database

2) A page will pop up requesting them to enter a password and username.

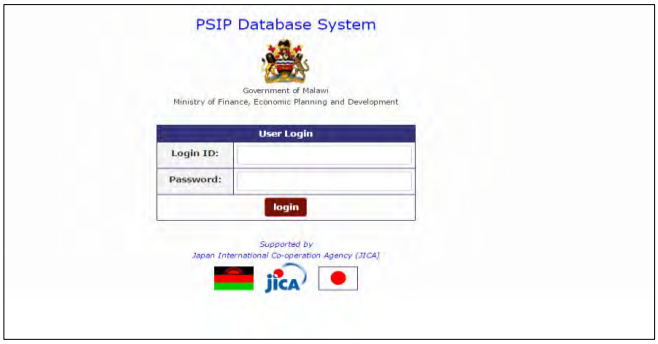


Figure 4: PSIP Database Login Screen

All users of the system are required to input Login ID and Password. When a user logs in, a connection called a session will be created. The session will be expired and require the user to log in again, if the user stays idle, that means, if the user does not click the submit button nor react for certain session maximum time.

[Note] Be careful that Login ID and Password are case sensitive, i.e. "**U**ser" and "**u**ser" are not the same.

If the login authentication is successful, it takes you to the top page of announcement of PSIP Database.

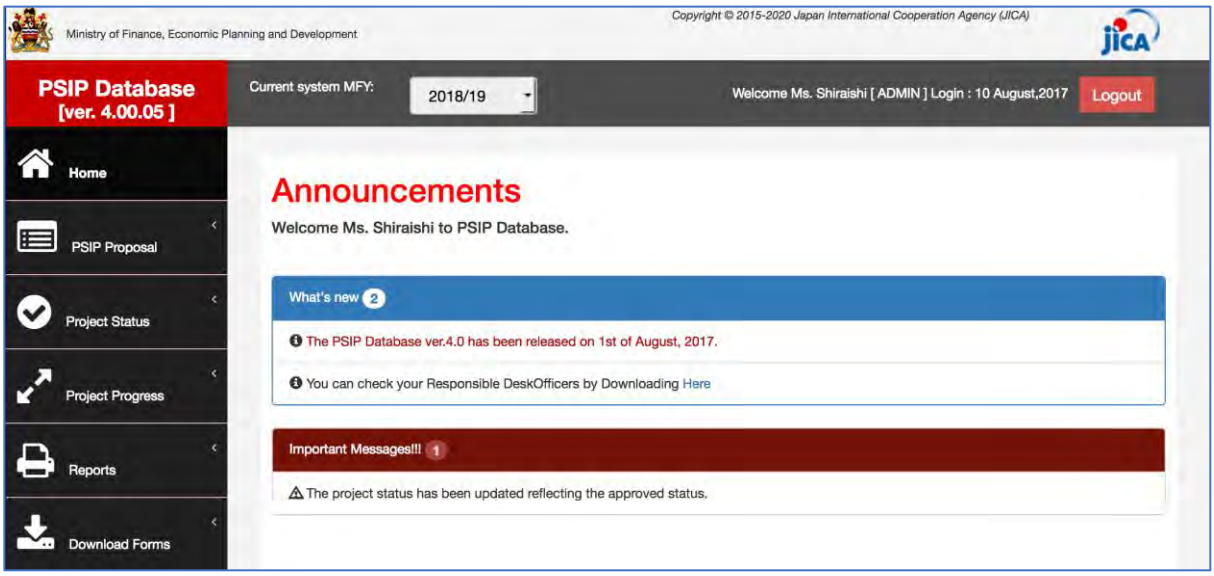


Figure 5: Announcements screen

4.3 How to obtain Login ID

A user is required to submit a User Registration form in Annex 1 to the PSIP Unit to obtain the Login ID. This form can be downloaded from the PSIP portal top page. After you fill in your profile and password, send it to the PSIP Unit who will register your account to the Database and provide you the temporary password. The first time your login, you are required to enter this temporary password and change it to new password.

5. PSIP Database features and functions

Let's see the main functions displayed on the menu of the left pain of the window. The menu has the submenus shown when you click the item.

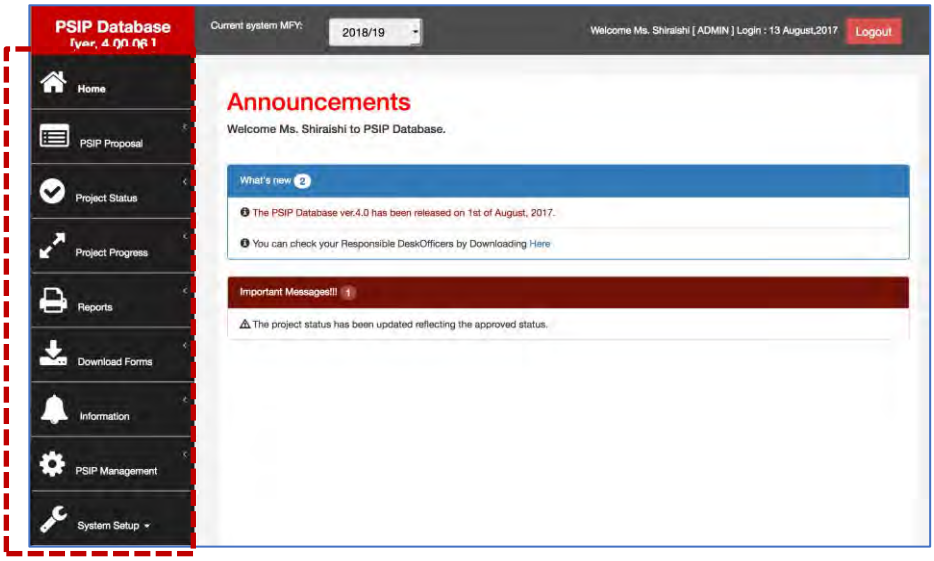


Figure 6: Database Menu

5.1 Home/Announcements

After your successful login to the system, the Announcement page of PSIP Database is on top. It displays the latest news and useful information regarding the PSIP activities and the system. It may sometimes display warning messages individually to your Ministry. It is therefore recommendable for the user to every time check the announcements before using the system. The page also displays a feature of Desk Officers where you can download and see your PSIP desk officer.

5.11 View names of PSIP Desk-officers and their rensponsible MDA Portifolio

To view the names of PSIP Desk-officers and their MDA portfolio, click on the pop up in the announcements screen, which will navigate to matrix window of desk officers.

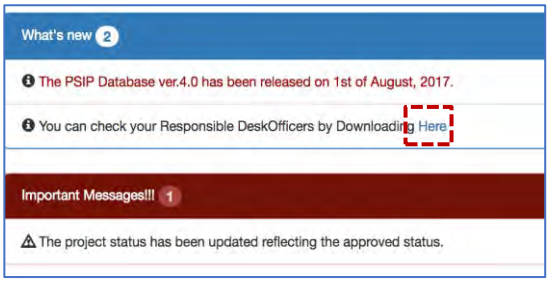


Figure 7: Announcements Screen

5.2 PSIP Proposal

PSIP Proposal menu contains the information regarding proposals, such as Project Proposal details, Summary of the submitted projects and Submission status of the proposals by MDAs.

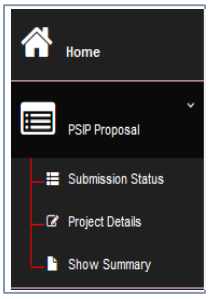


Figure 8: PSIP Proposal submenu

5.2.1 Submission Status

All the projects are shown in the Submission Status list presenting the submission and uploaded status.

Figure 9: Submission Status screen

The number "1" on the corresponding column means that it is registered successfully on each status. The following are the two status of the submission:

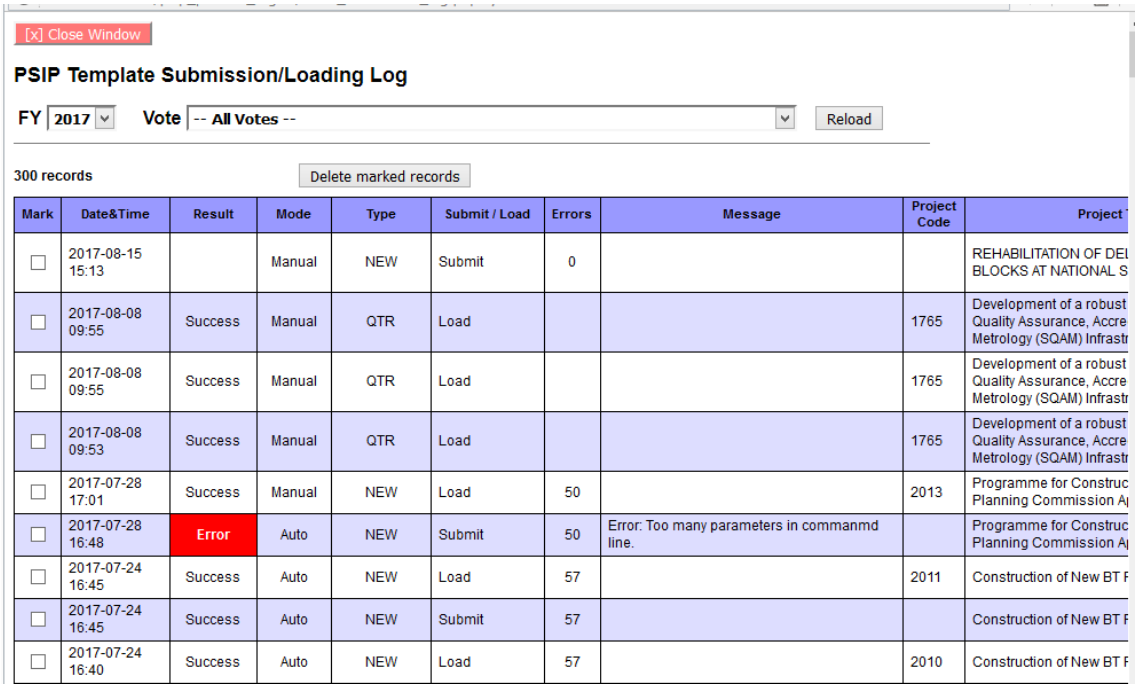
Table 3: Status of the submission

Submission Status	Meaning	Remarks
Submitted	The proposal is submitted by the vote.	
Loaded	The proposal is uploaded to the database by the PSIP unit.	

This list can be used for confirmation if proposal is in the PSIP database.

[Note] This screen is visible for MDA users, but not available for GUEST users.

There is a button at the right upper corner named "Show submission log". This is to see the detail result of submission and uploading. The screen sample is as below.


[x] Close Window

PSIP Template Submission/Loading Log

FY 2017 Vote -- All Votes -- Reload

300 records Delete marked records

Mark	Date&Time	Result	Mode	Type	Submit / Load	Errors	Message	Project Code	Project
☐	2017-08-15 15:13		Manual	NEW	Submit	0			REHABILITATION OF DEL BLOCKS AT NATIONAL S
☐	2017-08-08 09:55	Success	Manual	QTR	Load			1765	Development of a robust Quality Assurance, Accre Metrology (SQAM) Infrastr
☐	2017-08-08 09:55	Success	Manual	QTR	Load			1765	Development of a robust Quality Assurance, Accre Metrology (SQAM) Infrastr
☐	2017-08-08 09:53	Success	Manual	QTR	Load			1765	Development of a robust Quality Assurance, Accre Metrology (SQAM) Infrastr
☐	2017-07-28 17:01	Success	Manual	NEW	Load	50		2013	Programme for Construc Planning Commission A
☐	2017-07-28 16:48	Error	Auto	NEW	Submit	50	Error: Too many parameters in commanmd line.		Programme for Construc Planning Commission A
☐	2017-07-24 16:45	Success	Auto	NEW	Load	57		2011	Construction of New BT F
☐	2017-07-24 16:45	Success	Auto	NEW	Submit	57			Construction of New BT F
☐	2017-07-24 16:40	Success	Auto	NEW	Load	57		2010	Construction of New BT F

Figure 10: Submission Log screen

5.2.2 Project Details

Project details will list you the submitted project proposals, by selecting FY, Vote in a drop-down list or project status.

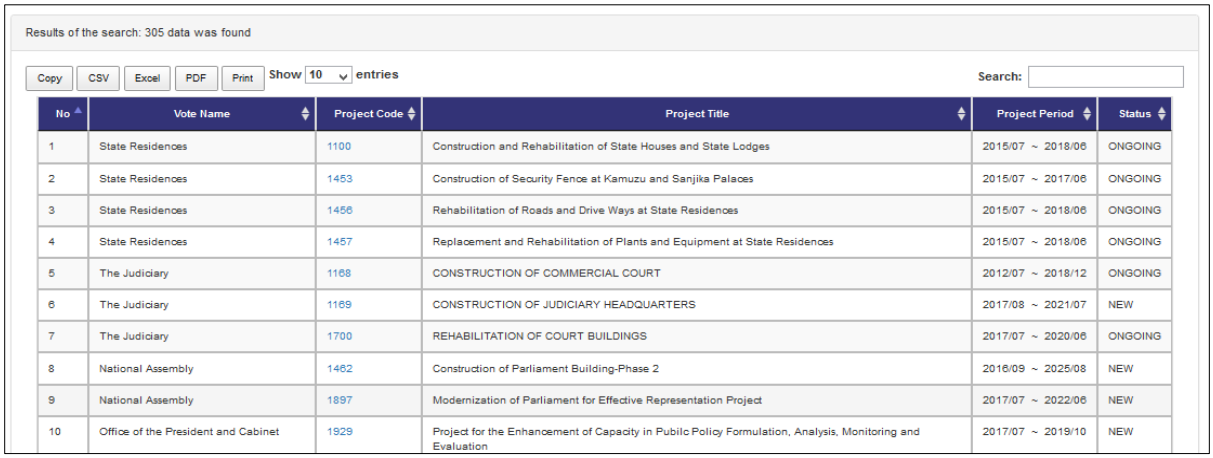
1) Select the conditions to list the projects

MFY; select the FY you are interested in. You can select not only corresponding year, but past proposals are also available.

Vote; choose the vote which project you want to filter.

Status; check/uncheck the project status to filter the projects.

2) Press the Search button and the corresponding projects are shown according to your conditions with the number of rows. The project status is also displayed in the list.



Results of the search: 305 data was found

Copy CSV Excel PDF Print Show 10 entries Search:

No	Vote Name	Project Code	Project Title	Project Period	Status
1	State Residences	1100	Construction and Rehabilitation of State Houses and State Lodges	2015/07 ~ 2018/06	ONGOING
2	State Residences	1453	Construction of Security Fence at Kamuzu and Sanjika Palaces	2015/07 ~ 2017/06	ONGOING
3	State Residences	1456	Rehabilitation of Roads and Drive Ways at State Residences	2015/07 ~ 2018/06	ONGOING
4	State Residences	1457	Replacement and Rehabilitation of Plants and Equipment at State Residences	2015/07 ~ 2018/06	ONGOING
5	The Judiciary	1168	CONSTRUCTION OF COMMERCIAL COURT	2012/07 ~ 2018/12	ONGOING
6	The Judiciary	1169	CONSTRUCTION OF JUDICIARY HEADQUARTERS	2017/08 ~ 2021/07	NEW
7	The Judiciary	1700	REHABILITATION OF COURT BUILDINGS	2017/07 ~ 2020/06	ONGOING
8	National Assembly	1462	Construction of Parliament Building-Phase 2	2016/09 ~ 2025/08	NEW
9	National Assembly	1897	Modernization of Parliament for Effective Representation Project	2017/07 ~ 2022/06	NEW
10	Office of the President and Cabinet	1929	Project for the Enhancement of Capacity in Pubilc Policy Formulation, Analysis, Monitoring and Evaluation	2017/07 ~ 2019/10	NEW

Figure 11: Project Proposal List

[Note] As a default, all the status is selected. If you want to unselect all, uncheck the "Check all" checkbox. If no status is selected, anyway all the projects of any status will be shown including the projects without status.

[Note] Project Status for "coming FY" indicates requested status by MDAs (before approval), while those for other FYs indicate approved ones.

3) Other useful functions

- Search by keyword

After you list all the projects, if you want to filter more in detail with some keywords, enter the word into the "Search" textbox, and only the projects that hit with the corresponding keyword will be listed on the table.

Figure 12 : Search by keyword

- Sort on the title of the table

You can sort the list table clicking the title (No, PSIP Code, Title, Type, etc.).

Figure 13: Sort function

- Print function

By clicking the printing function button, you can print the filtered table to print image, PDF, CSV (Excel) or “Copy and Paste” to where you want.

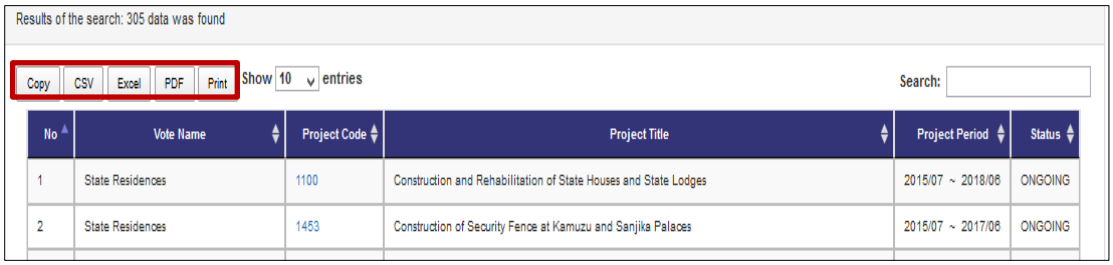


Figure 14: Print function

- Show entries function

By selecting the Show entries button, you can specify the number of projects appearing on screen e.g. 50,100,200 or all

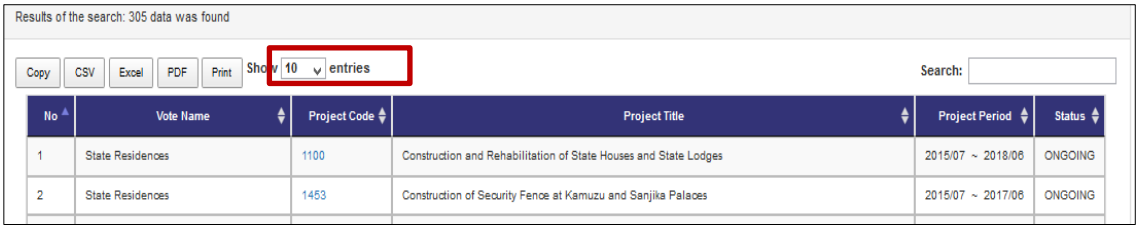


Figure 15: Show entries function

5.2.3 Project Detail Information

By selecting the Project Code on the list, it takes you to the project detail information page. Project Detail Information is grouped into several tabs. Clicking on the tabs will open a corresponding page according to the project status. New Project Registration has tabs namely General Info / Outline / Total Project Cost Matrix / Annual Project Cost Matrix / Financing/ Monitoring Evaluation/Proposal Applied FY/Project Management Structure, while On-going project has tabs; General Info / Outline/Project Performance / Annual Project Cost Matrix / Monitoring Evaluation / Proposal Applied FY/ Project Management Structure.

Basically, the contents displayed in the Project Details are the same as Excel Template format. On the top of the page the title, the status and selected year are always visible.

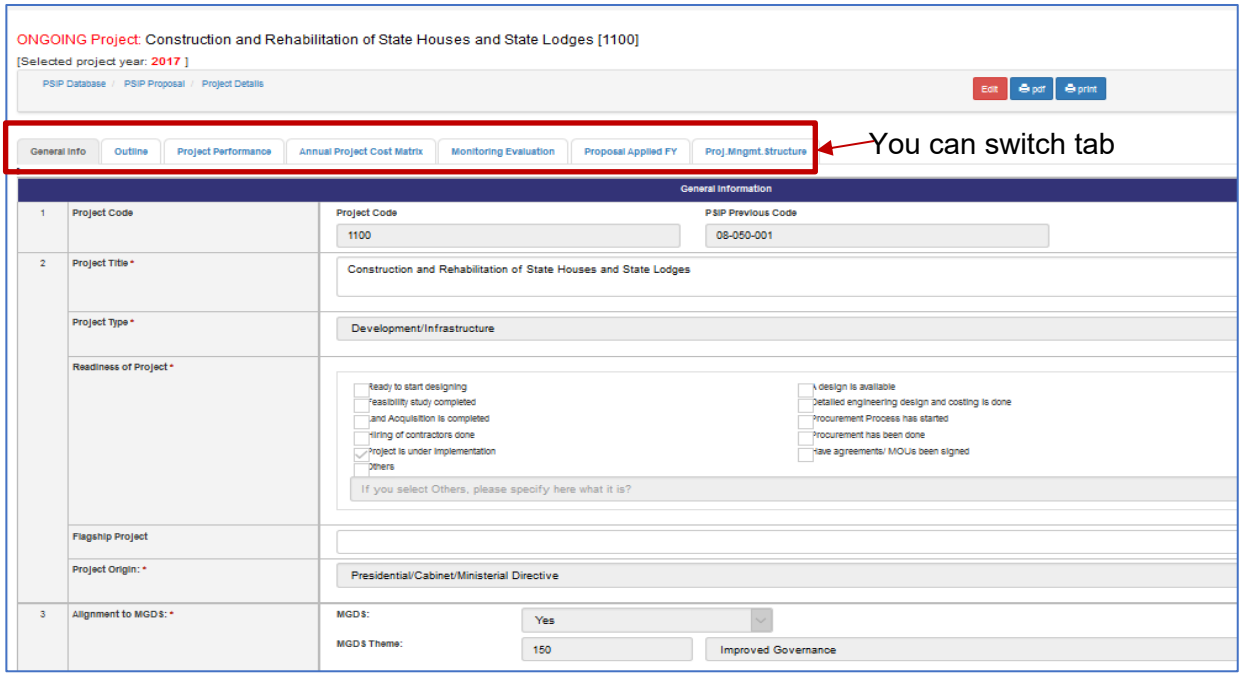


Figure 16: Project Detail screen

- Save function

PSIP staff and Administrators can edit some parts of the template and save by clicking on save button. These are the Original TEC of Project, if project is a flagship and period of implementation.

Figure 17: Save function

- Print output function

Print function is available in each page and PDF button that downloads the template into PDF format.

Figure 18: Print function

5.2.4 Show summary

Instead of displaying the specific proposal information one by one, you can list all the projects in one table summarizing the submitted proposal information.

1) Go to PSIP Proposal-> Show summary from the left pain menu.

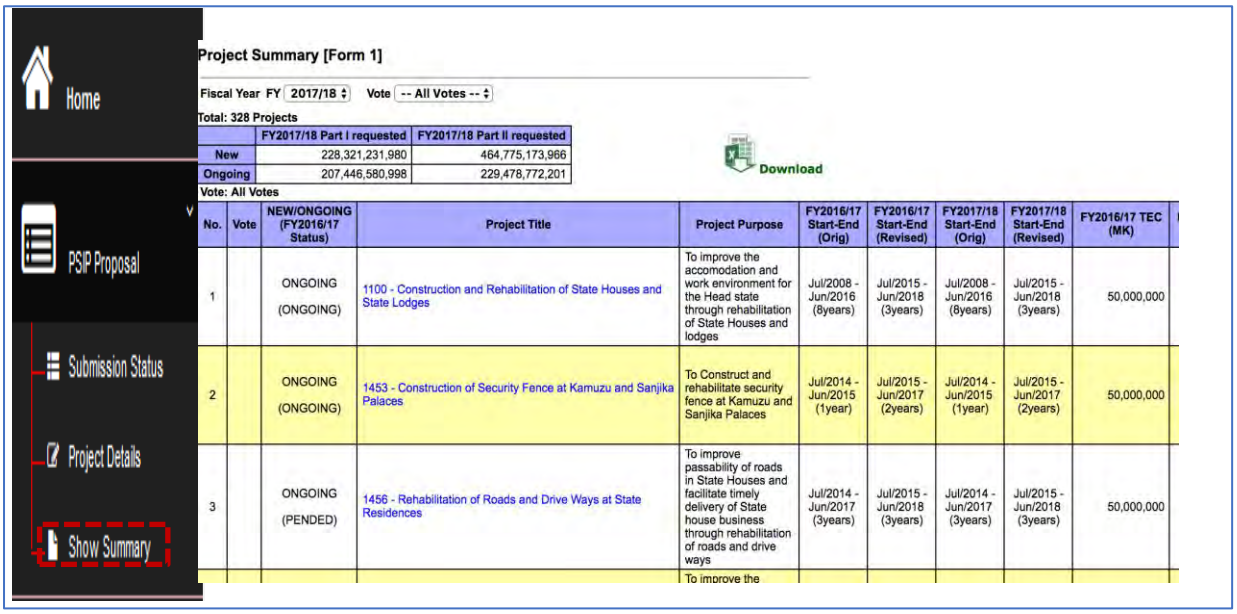


Figure 19: Summary screen

This summary list is quite useful to compare all the projects since it shows TEC, Funding of the recent two years, information of donors and contacts at once.

2) To get the summary list in Excel format, you can click “Download” icon.

[Note] The project summary is one of the main tools for the appraisal. Be careful that if your proposal is not found here, it means that the project may be excluded from the appraisal. If your submitted project is not found in spite you have sent it to the PSIP unit, please contact to the PSIP staff.

5.3 Project Status Menu

5.3.1 Status & approved Budget

The Status and approved Budget submenu shows the list of results of project status and approved budget and the appraisal decision.

(1) Specify the financial Year FY, Vote and Status as search conditions

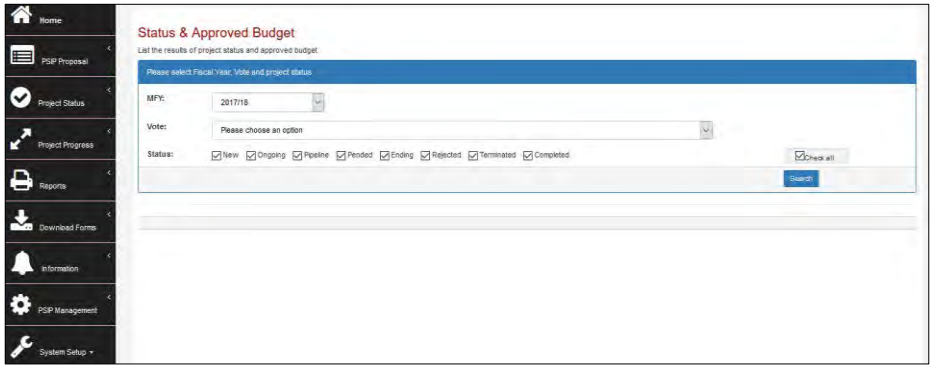


Figure 20: Status & Approved Budget

(2) The projects that meet the search conditions are listed in the table.

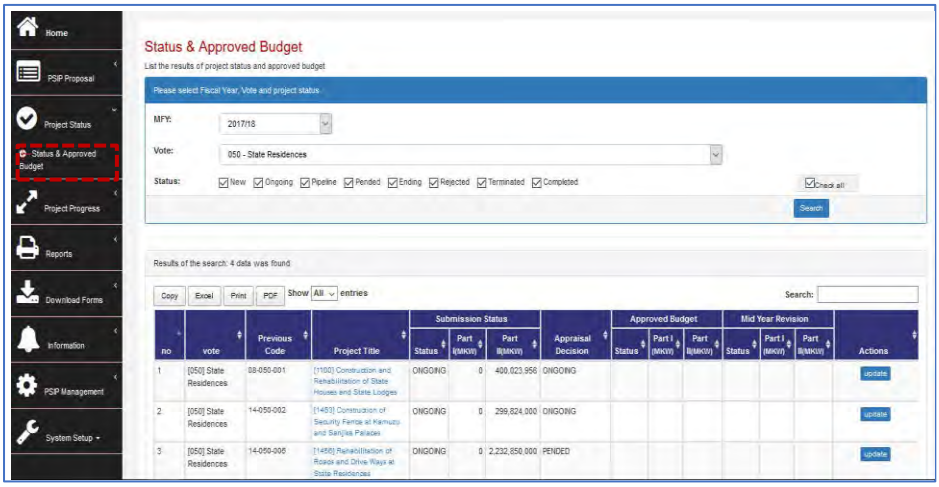


Figure 21: Status and Approved Budgeted list

The appraisal decision made by PSIP desk officer is shown in the appraisal decision column. The project has the proposed status submitted by MDA users through Excel Proposal Template. Then the status will have the result of appraisal. The following figure shows how the transition of the status of New, On-going and Pipeline goes.

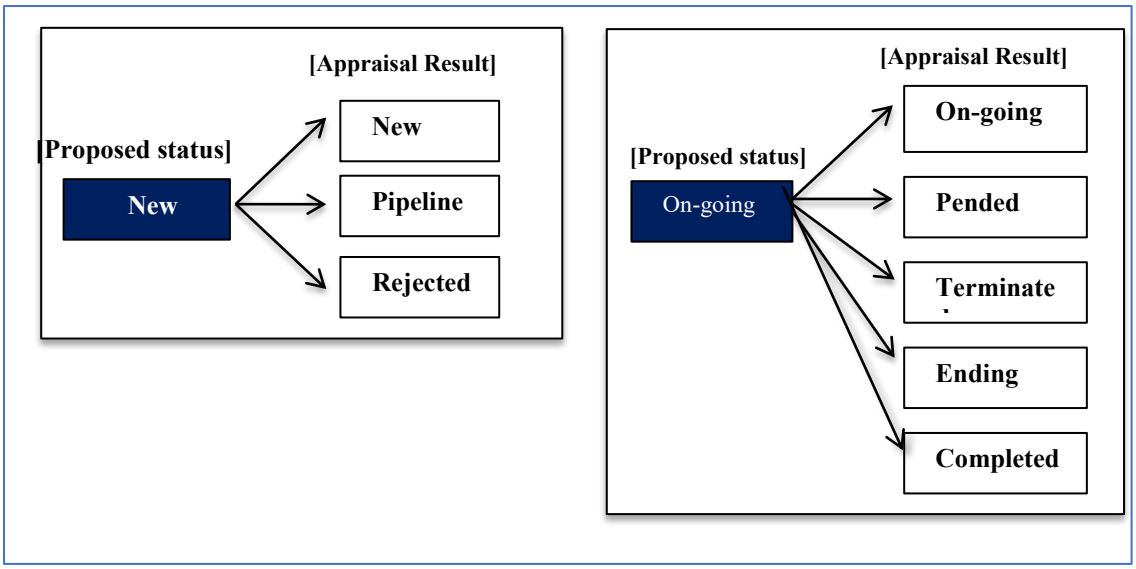


Figure 22: Transition of Project Status

The Proposed status by submission is set as project status after the proposal submission of the projects by MDA users. After the appraisal, its decision is set around mid-February overwriting the original status. The approved status column after the Parliament is inserted in the table as shown in the figure below. This means that the approved status column represents the final decision of the project which will be set around August.

no	vote	Previous Code	Project Title	Submission Status			Appraisal Decision	Approved Budget			Mid Year Revision			Actions
				Status	Part I(MKW)	Part II(MKW)		Status	Part I (MKW)	Part II(MKW)	Status	Part I (MKW)	Part II(MKW)	
1	[050] State Residences	08-050-001	[1100] Construction and Rehabilitation of State Houses and State Lodges	ONGOING	0	400,023,956	ONGOING	PENDED						update
2	[050] State Residences	14-050-002	[1453] Construction of Security Fence at Kamuzu and Sanjika Palaces	ONGOING	0	299,824,000	ONGOING	ONGOING		100,000,000	ONGOING			update
3	[050] State Residences	14-050-005	[1456] Rehabilitation of Roads and Drive Ways at State Residences	ONGOING	0	2,232,850,000	ONGOING	ENDING	1,456	1,456				update
4	[050] State Residences	14-050-006	[1457] Replacement and Rehabilitation of Plants and Equipment at State Residences	ONGOING	0	887,723,364	ONGOING	ONGOING		300,000,000	ONGOING		1	update
5	[060] National Audit Office		[1951] Capacity Building Programme	NEW	0	0		NEW	380,000,000					update
6	[070] The Judiciary	09-070-004	[1168] CONSTRUCTION OF COMMERCIAL COURT	ONGOING	0	0	ONGOING	ONGOING		600,000,000				update

Figure 23: Four status of the project

[Note] the “Project Status” is always reflecting the most actual status.

5.3.2 Edit Appraisal Results of Proposals

By clicking the “update” button, it takes you the Edit Appraisal Results of Proposals screen. The status can be adjusted by clicking on the pointers in the status bar which then shows a dropdown list of the status.

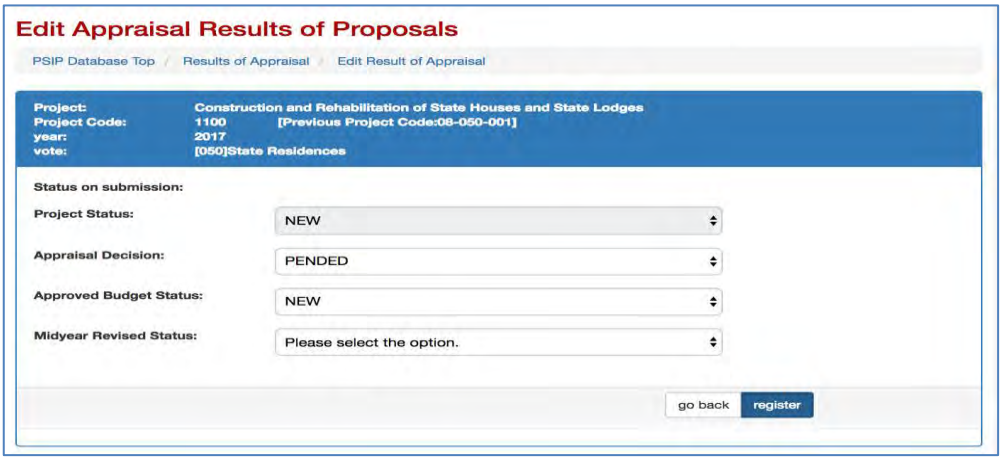


Figure 24: Edit appraisal results of proposal

5.4 Project Progress

5.4.1 Project Quarterly Progress Report Status

As a reporting function, you can list all the status of Project Quarterly Progress Report selecting the year and vote. All the projects with project status “On-going” or “NEW” is retrieved according to your specified filter showing which quarterly period of the report is already submitted and which is yet pending.

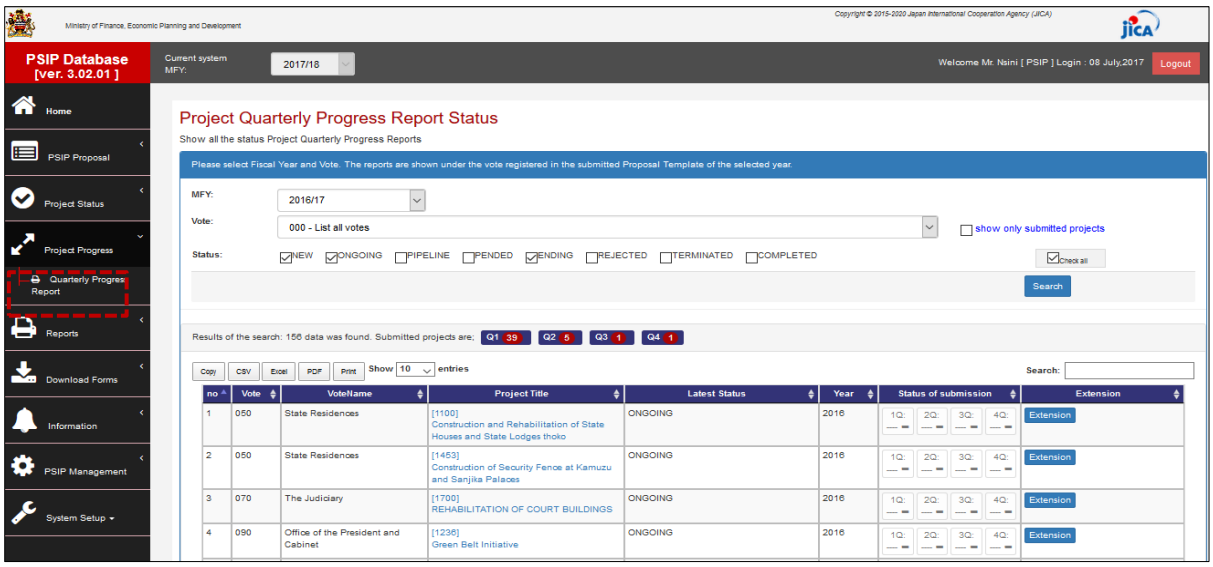


Figure 25: Quarterly Progress Report screen

[Note] The MFY will be selected with the year of the project which Quarterly Progress Report corresponds to. For example, if MDA users submit the report for year 2016/17 project, select the year 2016/17 and the table shows all the 2016/17 projects that are supposed to submit report with project status New, Ongoing, Ending checked as a default.

If “show only submitted projects” checkbox is checked, only project who submitted Quarterly Progress Report will be listed.

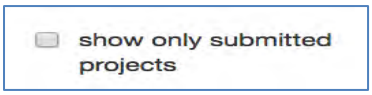


Figure 26: Check button for submitted projects

The result of the search will be displayed after the search button is clicked with the specified conditions. The red number in the square represents the number of submitted reports each quarter.

Figure 27: Results for all votes search

5.4.2 Report Detail

If the report is submitted, you can click the blue OK butt

to see the detail of the report corresponding to the project. There are tabs such as Main, Project Performance, which information is exactly the same as Excel Project Quarterly Report. Please refer the Excel Manual for the detail information.

5.4.3 How does the system decide if the report is submitted or not

The system employs the following two conditions to see if the quarterly report is submitted.

- It checks if information on finance issues/ performance issues/ actions/ others is/are not empty.
- All above issues are empty but performance is not empty.

5.4.4 Extension Request

The submitted Extension Request information is available selecting "Extension Request" tab on the Quarterly Progress tab. The content is displayed with the same information as Excel Format.

Figure 28: Extension Tab

5.4.5 Completion Report

If the project is completed and the report is submitted by Excel format, the content is also displayed on the "Completion Report" tag.

Figure 29: Completion report tab

5.4.6 Feedback of Extension Request

On the Extension Request column, the "Requested" or "Show Result" button is displayed if the project has submitted the extension request.

The red "Requested" means that the project has submitted the request, while the green "Show Result" represents that the result is already done.

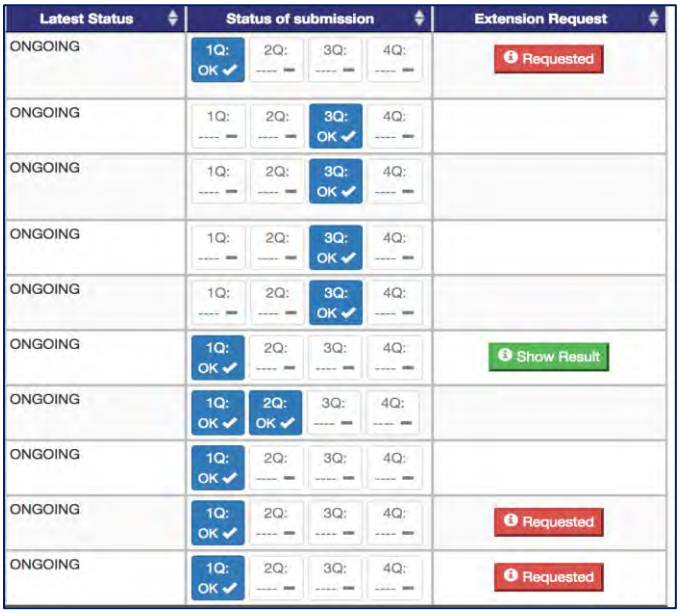


Figure 30: Quarterly report submission status and feedback screen

Clicking the button shows popup window where you can edit the detail of the request and approval/withdrawal.

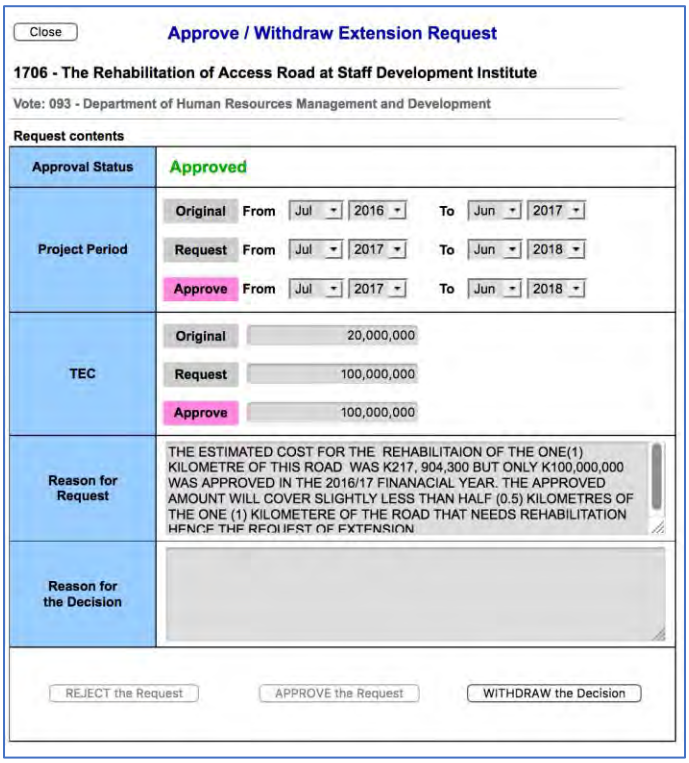


Figure 31: Detail of the extension request

5.5 Reports

5.5.1 Project List

This function shows the project summary based on the TEC and Donor by specifying the responsible ministry and MDA.

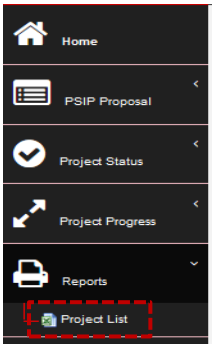


Figure 32: Reports sub-menu

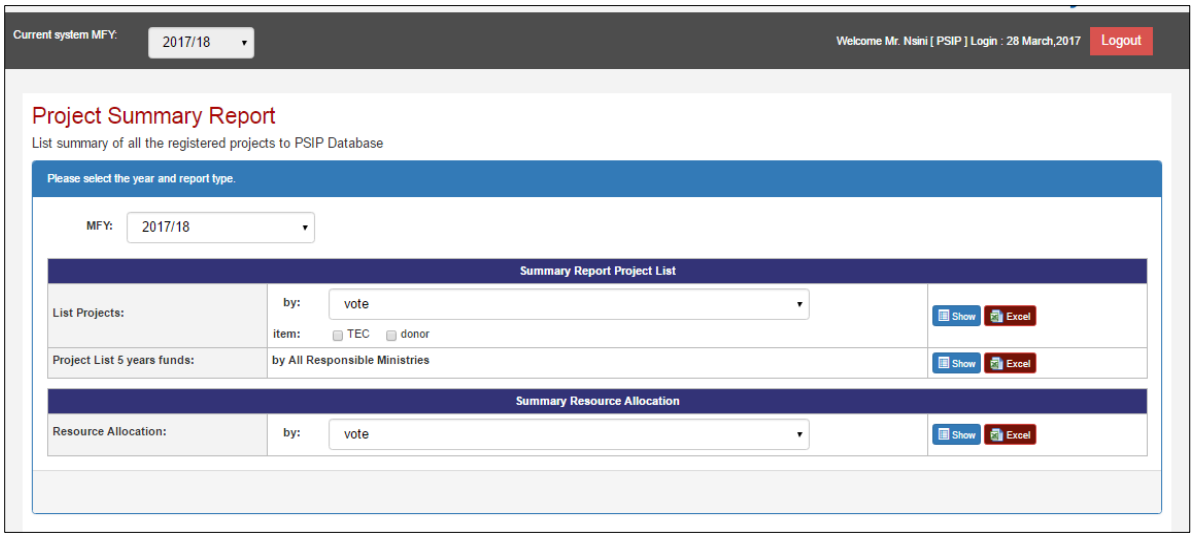
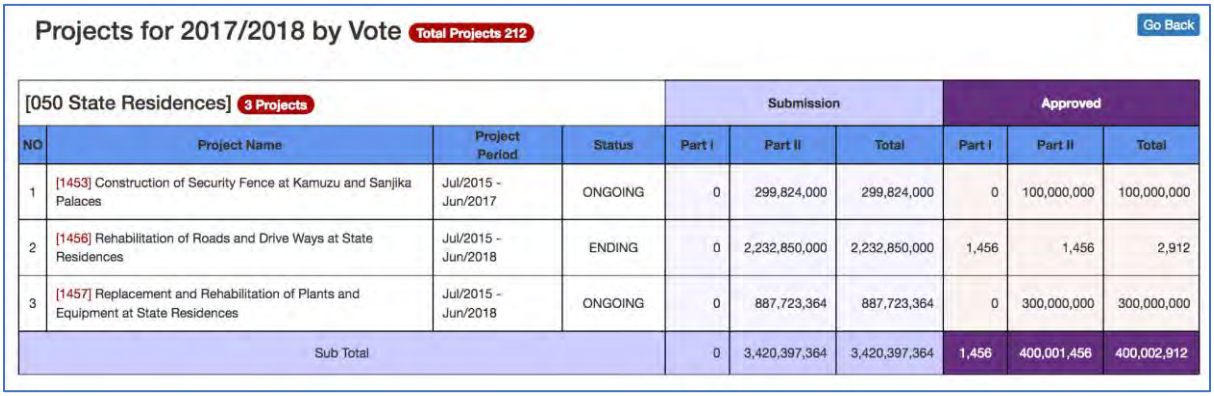


Figure 33: Show project summary report

- To view by Vote, Select MFY, the vote then check on the TEC or donor then click show button. Once that is done then the table below is shown.



Projects for 2017/2018 by Vote — Total Projects 212 — Go Back

[050 State Residences] 3 Projects				Submission			Approved		
NO	Project Name	Project Period	Status	Part I	Part II	Total	Part I	Part II	Total
1	[1453] Construction of Security Fence at Kamuzu and Sanjika Palaces	Jul/2015 - Jun/2017	ONGOING	0	299,824,000	299,824,000	0	100,000,000	100,000,000
2	[1456] Rehabilitation of Roads and Drive Ways at State Residences	Jul/2015 - Jun/2018	ENDING	0	2,232,850,000	2,232,850,000	1,456	1,456	2,912
3	[1457] Replacement and Rehabilitation of Plants and Equipment at State Residences	Jul/2015 - Jun/2018	ONGOING	0	887,723,364	887,723,364	0	300,000,000	300,000,000
Sub Total				0	3,420,397,364	3,420,397,364	1,456	400,001,456	400,002,912

Figure 34: Project summary

[Note]

When the MGDS Theme or Priority is selected by user, the grand total does not match as the whole project grand total, since there are projects which does not have the MGDS Theme or Priority

[Note]

If you are using **Microsoft Office higher than Office 2010** versions, when downloading the report, you might have noticed the problem of protected mode which disable to display the contents. Whenever you try to open an Office document (Word, Excel or PowerPoint file) which was downloaded from Internet or was attached in an email, Microsoft Office program opens it in **Protected View** which is also known as **Read Mode** or **Restricted Mode**.

You can turn off Protected View feature, following simple steps:

1. First launch any Office program such as Microsoft Word and then click on File menu present in the ribbon.
2. Now click on Options tab present in the left sidebar.
3. It'll open Options window. Now click on "Trust Center" tab given at the end in left-side pane and then click on "Trust Center Settings" button.

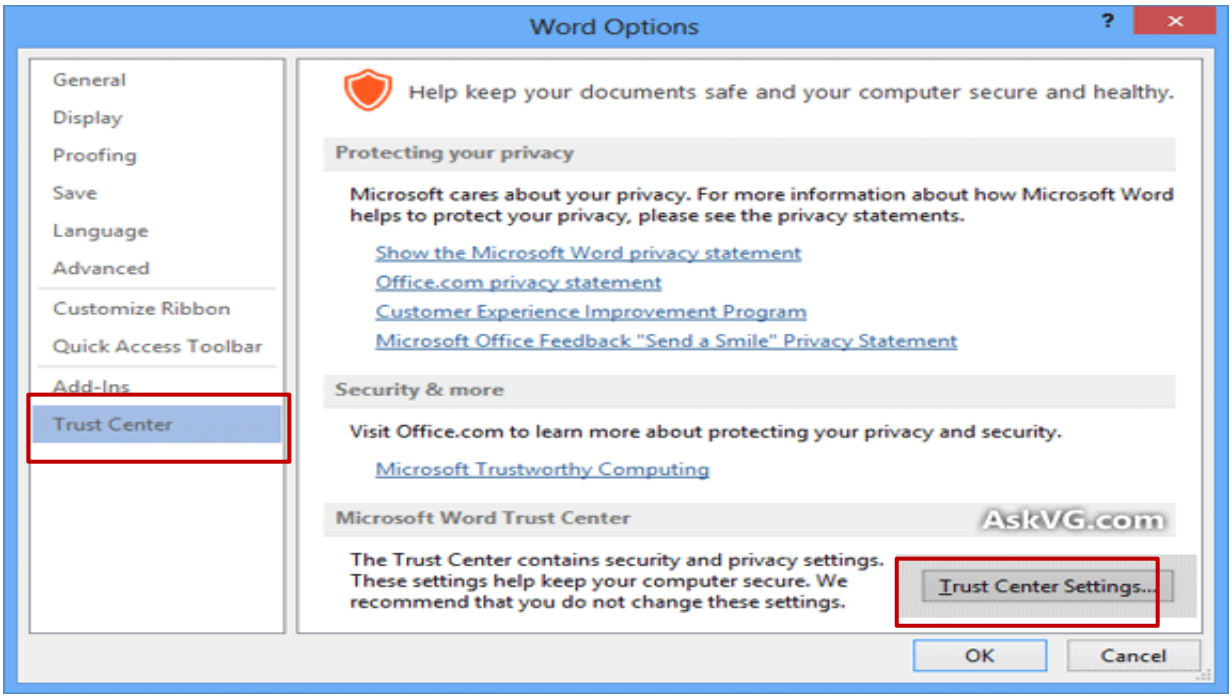


Figure 35: Protected view window

4. Click on "Protected View" tab and in right-side pane, you'll see following options:

Enable Protected View for files originating from the Internet

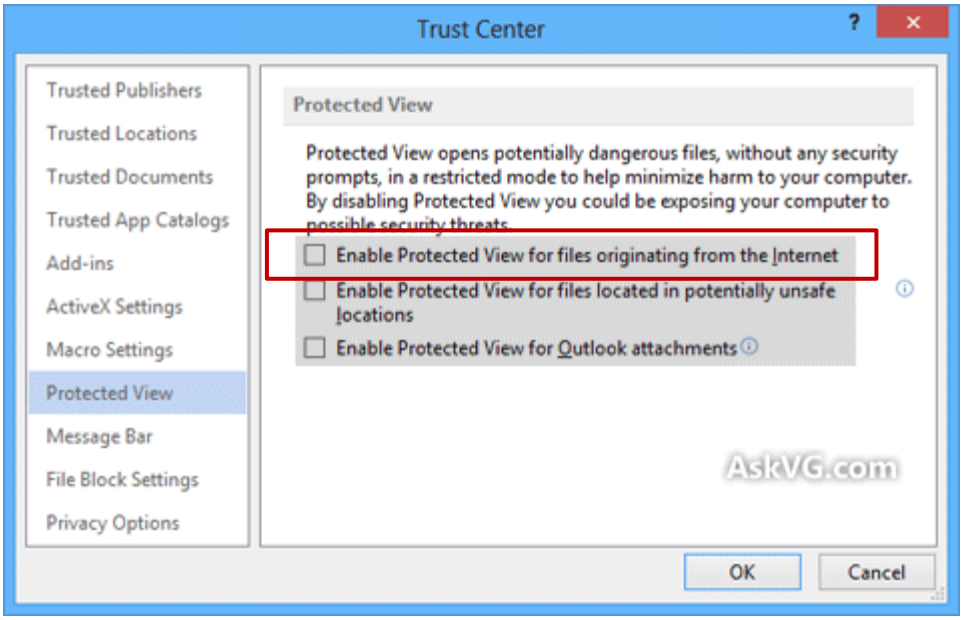


Figure 36: Trust center window

5.6 Download Forms

MDA/PSIP/Admin users can download Project Proposal for;

- New Project Proposal (Blank format)
- New Project Proposal (Pipeline project)
- On-going Project Proposal
- Quarterly Progress Report
- PFM-IT

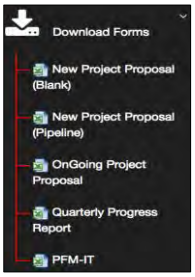


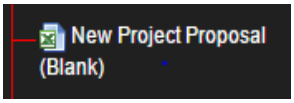
Figure 37: Download sub-menu

[Note] The download menu is invisible for GUEST role users.

5.6.1 How to download the PSIP templates

(1) New project proposal (Blank)

Once the sub menu of download new project proposal (Blank) is clicked then the save as window pops up and then the file can be saved.



(2) New project proposal (Pipeline)

Clicking on the sub menu navigates to the download window where a vote of choice is selected from the drop-down list. Once the vote is selected then the list of projects appears and download can be done.

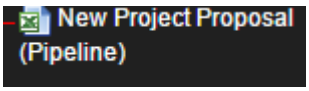
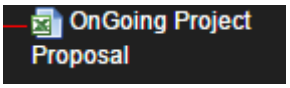


Figure 38: Shows download function for pipeline project

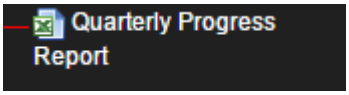
(3) Ongoing project proposal

Clicking on the sub menu navigates to the download window where a vote of choice is selected from the drop-down list. Once the vote is selected then the list of projects appears and download can be done.



(4) Quarterly progress reports

Clicking on the sub menu navigates to the download window where a vote of choice is selected from the drop-down list. Once the vote is selected then the list of projects appears and download can be done.



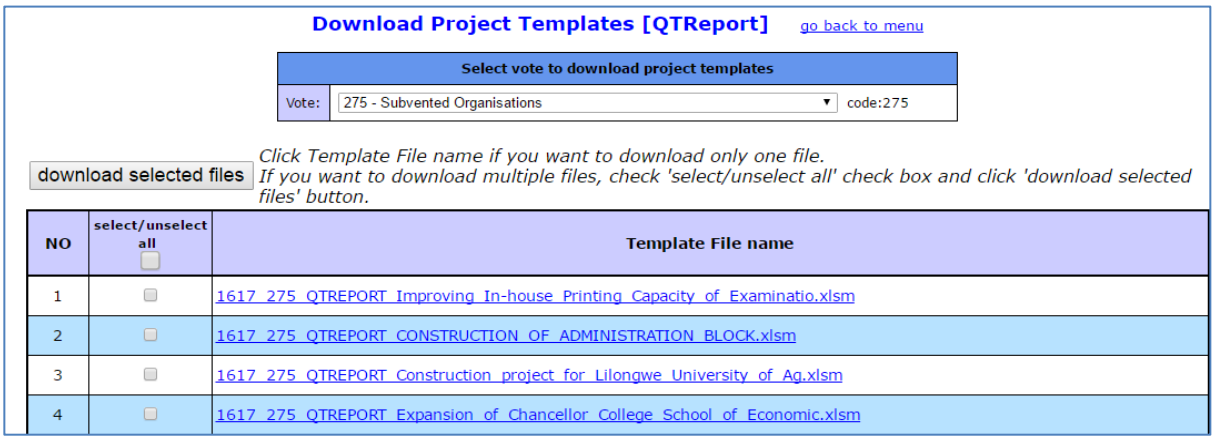
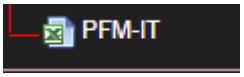


Figure 39: Screen after clicking the quarterly report button

(5) PFM-IT

Clicking on the sub menu navigates to the download window where a vote of choice is selected from the drop-down list. Once the vote is selected then the list of projects appears and download can be done.



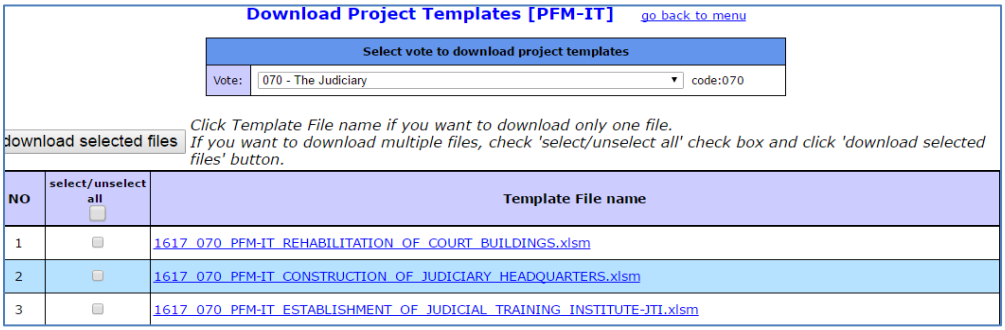
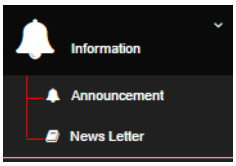


Figure 40: Screen after clicking the PFM-IT button

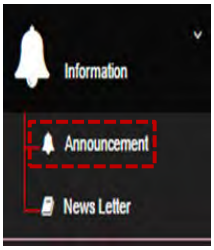
5.7 Information

This is an information function which shows the announcements made by PSIP and PSIP Newsletter.



5.7.1 Announcement

1). Click on the announcements to navigate to the announcements screen



- The announcements Page

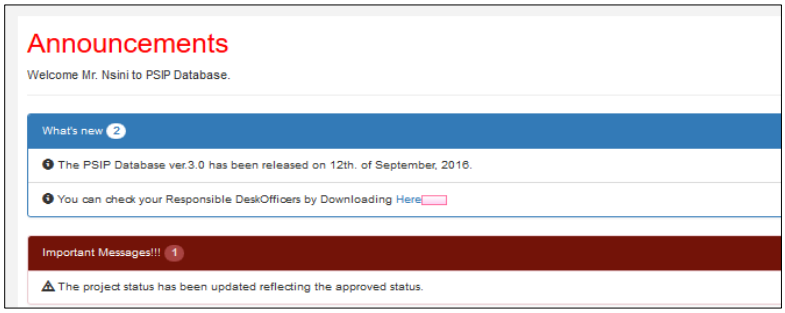


Figure 41: Announcement page

5.7.2 How to edit Announcement

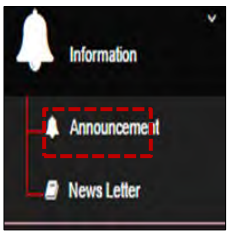
The content of Announcement is managed in Announcement table of Database. The table is editable only by Administrators.

The following figure shows the Announcement table in AdminTool.

Figure 42: Announcement table in Admin Tool

- Value I; Important message
- Value N; New message
- Remark; The content of message

5.7.3 Newsletter



- The newsletter page

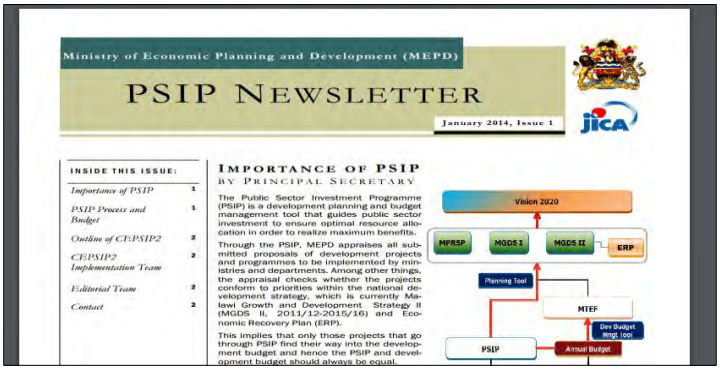


Figure 43: Newsletter Page

5.8 PSIP Management (PSIP/Admin Only)

5.8.1 Template Loader

This is a manual uploading function that loads a project on the PSIP Database.

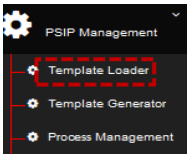


Figure 44: Upload function screen

(1) Click on the choose file which explores you inside computer then select project file and click load the file. Then project navigates to another window

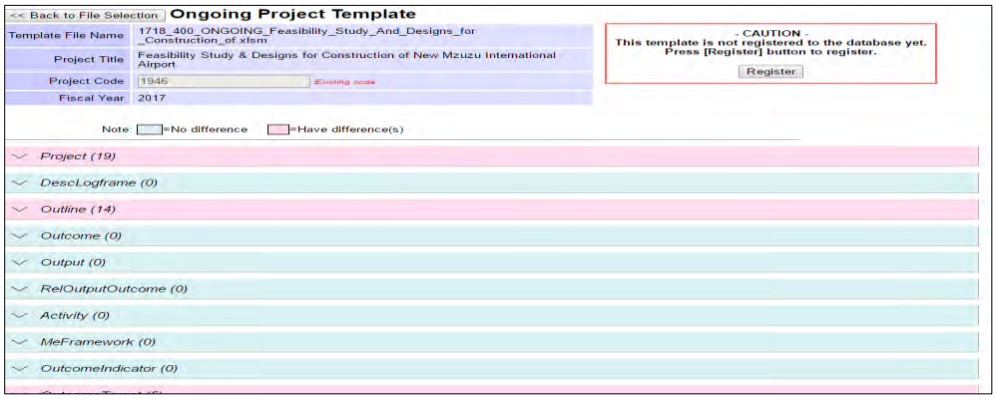


Figure 45: Project loading registration window

(2) Click on Register

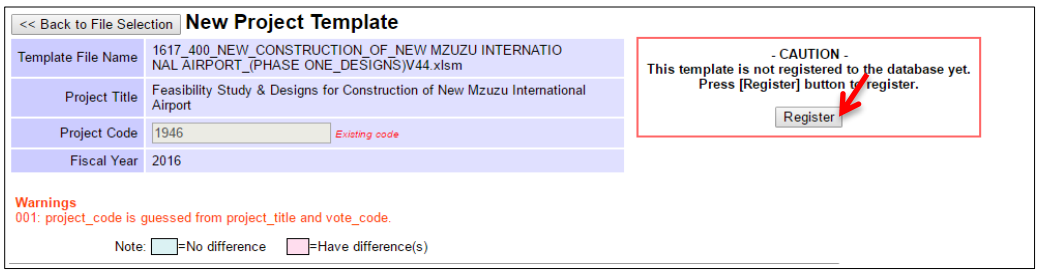
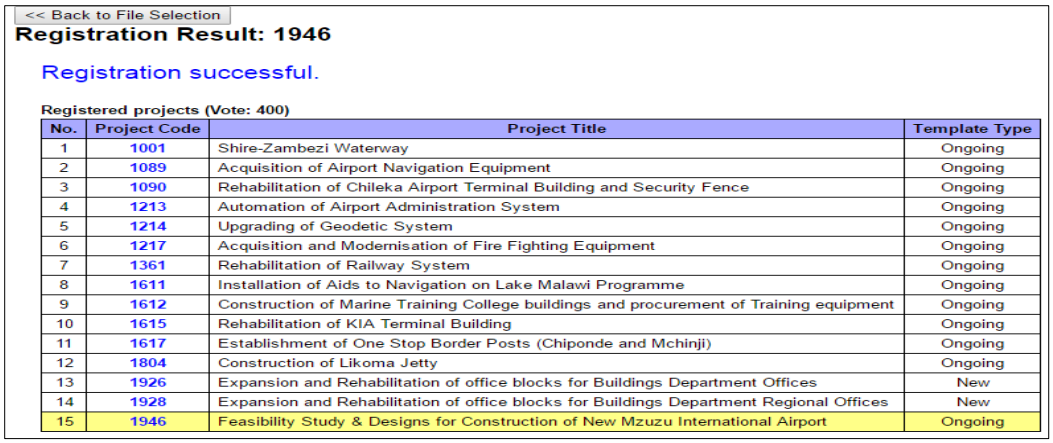


Figure 46: Registering button

- By clicking on the register button then the registered project is shown as below.

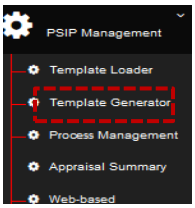


No.	Project Code	Project Title	Template Type
1	1001	Shire-Zambezi Waterway	Ongoing
2	1089	Acquisition of Airport Navigation Equipment	Ongoing
3	1090	Rehabilitation of Chileka Airport Terminal Building and Security Fence	Ongoing
4	1213	Automation of Airport Administration System	Ongoing
5	1214	Upgrading of Geodetic System	Ongoing
6	1217	Acquisition and Modernisation of Fire Fighting Equipment	Ongoing
7	1361	Rehabilitation of Railway System	Ongoing
8	1611	Installation of Aids to Navigation on Lake Malawi Programme	Ongoing
9	1612	Construction of Marine Training College buildings and procurement of Training equipment	Ongoing
10	1615	Rehabilitation of KIA Terminal Building	Ongoing
11	1617	Establishment of One Stop Border Posts (Chiponde and Mchinji)	Ongoing
12	1804	Construction of Likoma Jetty	Ongoing
13	1926	Expansion and Rehabilitation of office blocks for Buildings Department Offices	New
14	1928	Expansion and Rehabilitation of office blocks for Buildings Department Regional Offices	New
15	1946	Feasibility Study & Designs for Construction of New Mzuzu International Airport	Ongoing

Figure 47: Successfully registered project

5.8.2 Template Generator

This shows how to generate new and pre-filled Project Templates Proposals, Quarterly Progress Reports and PFM-IT Tools for use in the next fiscal year and for repairing.



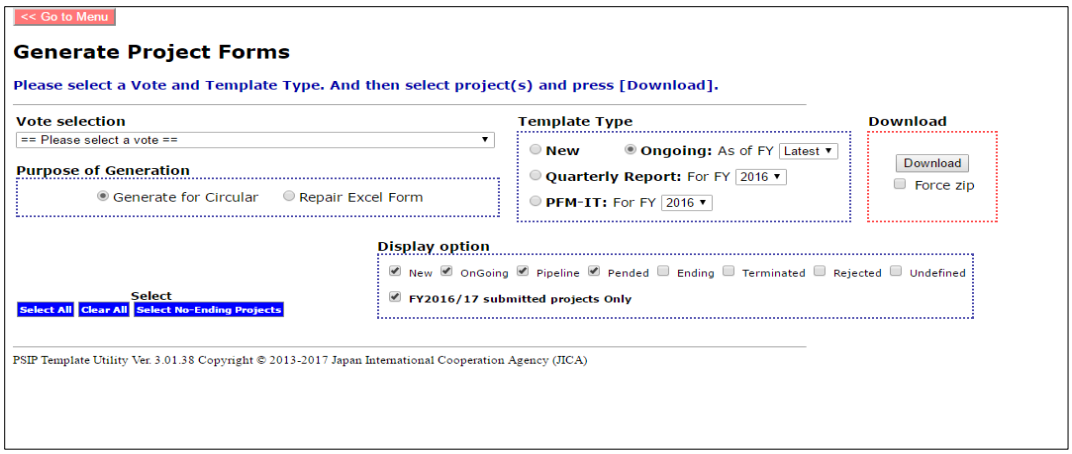


Figure 48: Template generator

To download select the vote of choice, check on the purpose of generating the template, check the template type against the year from which you want to generate the template, check the status to be generated project. Then click on the Download.

5.8.3 Process Management

This is a PSIP process management function where PSIP Staff can input Site validation reports of projects, make project initial and final appraisal and can also input ministerial

minutes. It also shows the state of the proposal by showing number of errors, shows if Quarterly Progress Report was submitted, project proposal transition and budget transition.

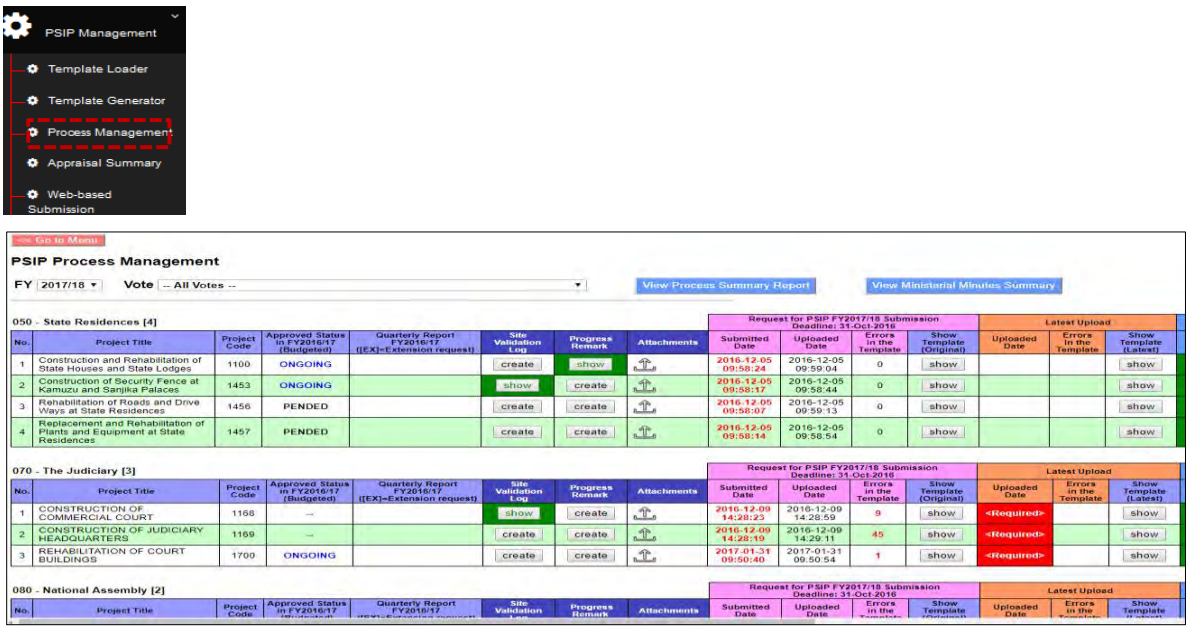
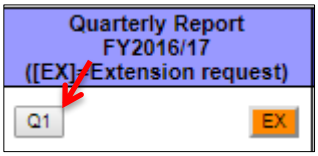


Figure 49: PSIP process management screen

5.8.4 Quarterly Report

(1) Click on the Q1 icon, this will navigate to the quarterly report



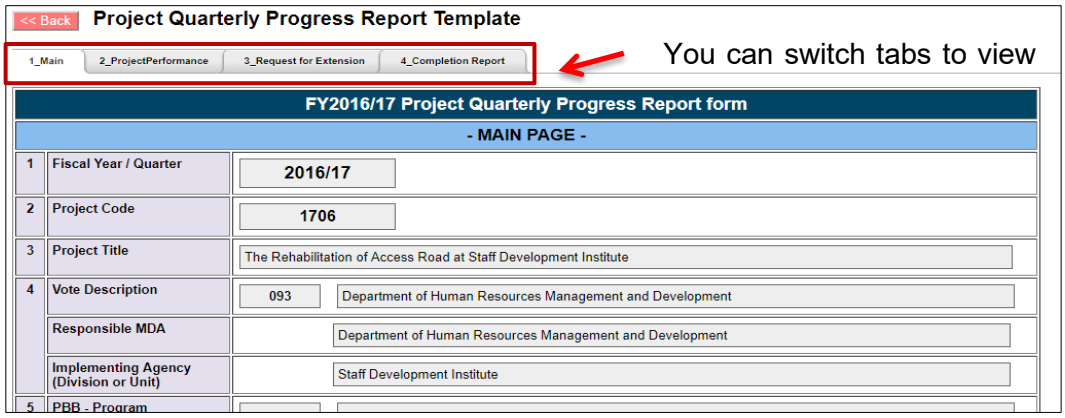


Figure 50: Quarterly report view

(2) To View the Extension request form

An approval decision is made from the proposed extension request form from an MDA. One can reject the request, approve the decision or withdraw the approval decision by further clicking on the Approval Buttons.

Figure 51: Extension approval decision screen

5.8.5 Site Validation Report

(1) To create a field validation report, click on create in the site validation column against the project monitored and once the create button is clicked, a window pops up where the results of site validation are inputted.

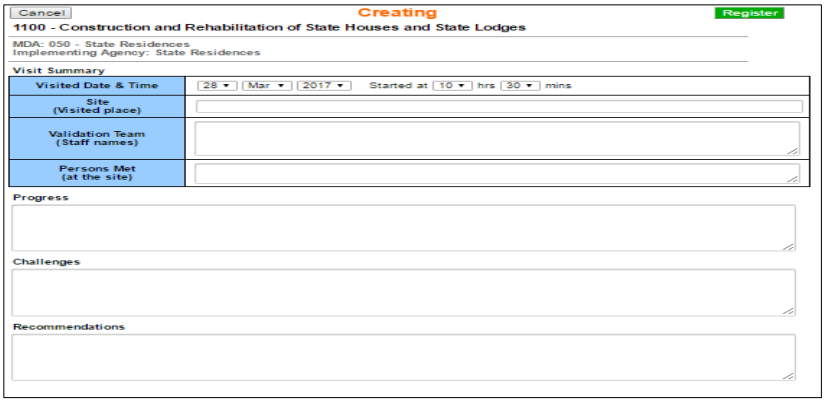
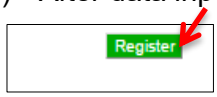
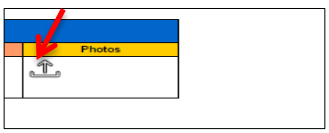


Figure 52: Data input screen for site validation log

(2) After data input register by clicking on the “register button



(3) To input Photos



(4) Drop pictures in the drop files which then will appear in the uploaded.

Figure 53: Site validation pictures upload function

(5) To view the input, click on Show button icon

(6) Upon a click the show button navigates to the registered data screen.

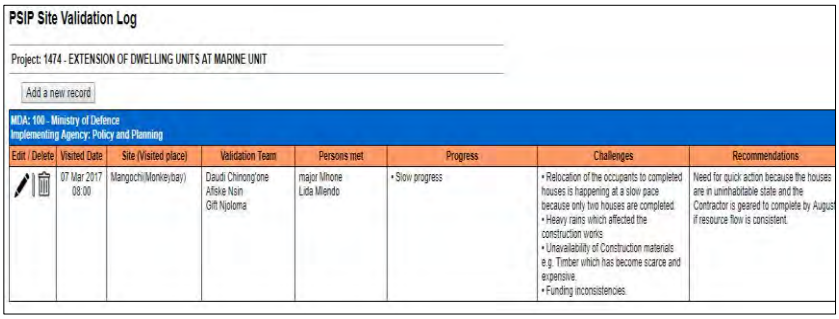


Figure 54: Site log data

(7) To add new data to the Site validation log Screen, click on the add new record.

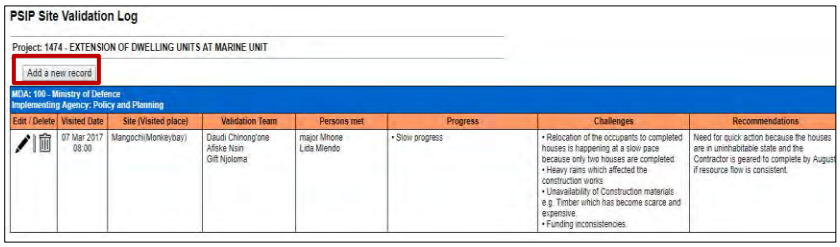


Figure 55: Add new data button

5.8.6 Project Remark

(1) To create any updates on the project and remarks click on the “Create” in the column of project remark in the process management screen.

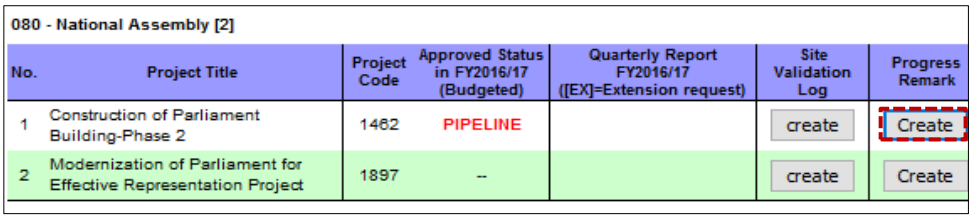


Figure 56: Create button for progress remark

- The click button navigates to the data input screen

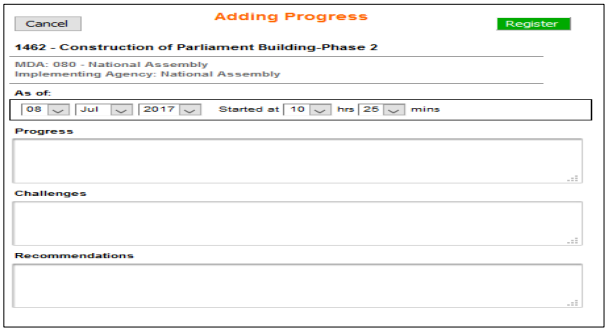
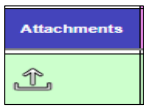


Figure 57: Input progress data screen

(2) After data input register by clicking on the “register button”.

5.8.7 Other relevant attachment

(1) To add attachments pertaining a project click on the attachment icon in the Process Management Screen.



(2) Upon a click to the attachment icon, the Database navigates to Uploading files window. Drop files in the drop files here which then will load automatically, then close the window.

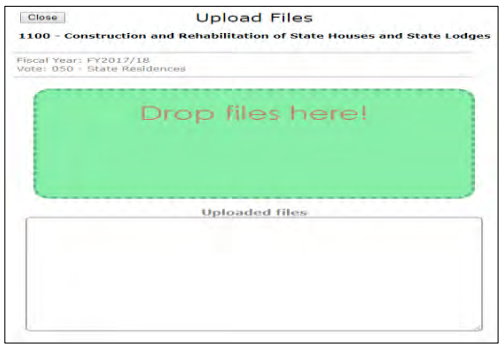


Figure 58: Attachment data input screen

[To view registered data]

(1) Click on the attachment show icon in the attachment column of the Process management screen. From which upon a click on the file link the file opens

(2) Upon a click of the button it navigates to a new window bearing a dialogue box of registered data. Click on the file name to view the content.

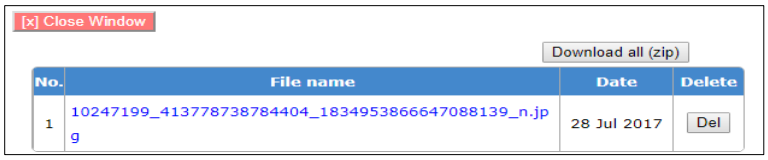


Figure 59: File attachment

(3) To download all files, click on the download button in the registered data window. The files will download

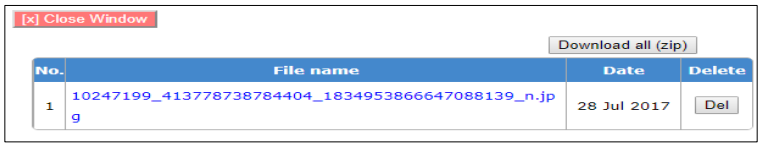


Figure 60: Download attachment button

(4) To delete the file, click on the delete button in the same registered data window.

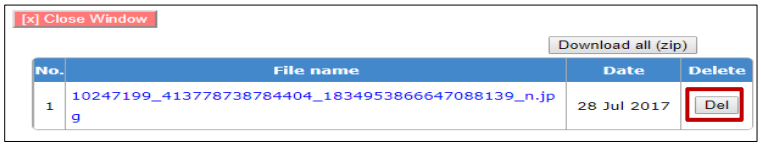


Figure 61: Delete button

5.8.8 Project Template Contents

(1) To show template click on the “show” PSIP Database will navigate to the template

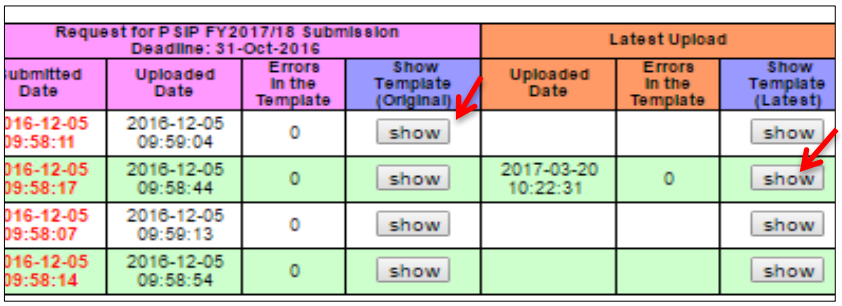


Figure 62: Show project template

5.8.9 Initial Appraisal

(1) To make initial appraisal click on the initial appraisal button, this will navigate to the Appraisal Matrix.

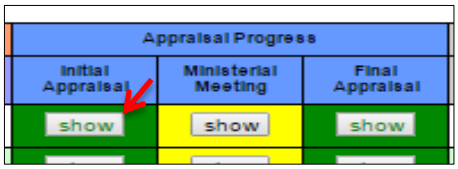


Figure 63: Show appraisal data

(2) Initial Appraisal Screen pops up after clicking on the initial appraisal button as shown below.

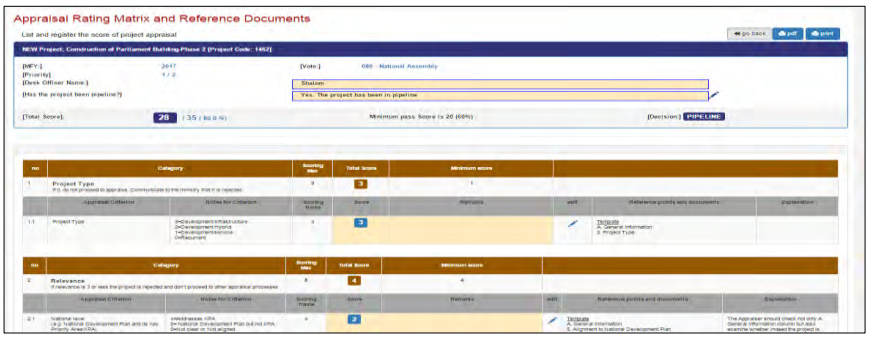


Figure 64: Appraisal rating matrix and reference documents

5.8.10 Final appraisal

This screen shows the final appraisal decision that is made by the desk officer; the desk-officer may score 1 or 0 according to the proposed requirement. This requirement is made complete by checking by summing up the individual scores from the initial appraisal.

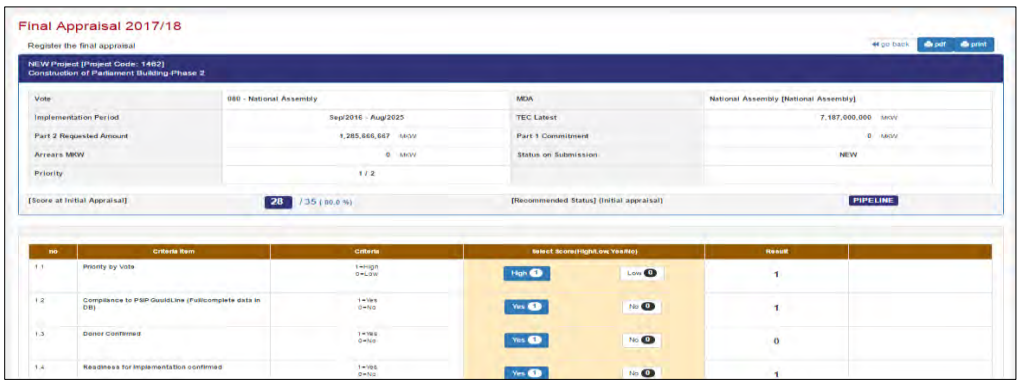
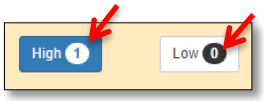


Figure 65: Final appraisal screen:

(1) A score can be given to the requirement by clicking on the High button or low. High gives a score of one and 0 a score of Zero.



(2) Critical information for a project can be typed in the dialogue box by clicking on the edit pen.

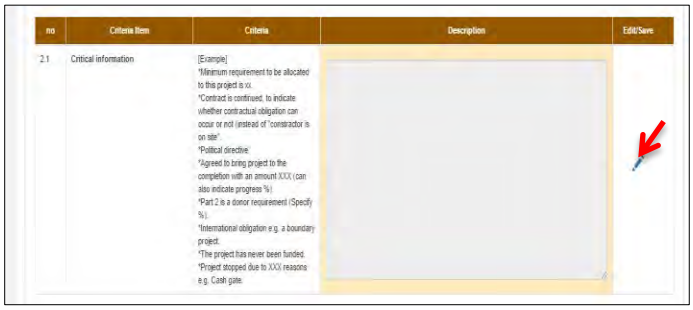


Figure 66: Edit function

(3) Proposed allocations can be placed in the allocations box by clicking in the edit button, which makes the cells editable.

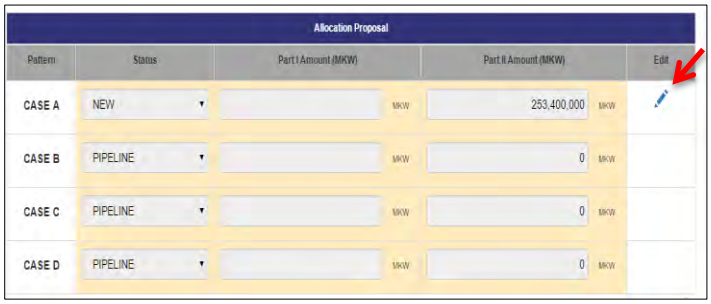


Figure 67: Allocations edit function

5.8.11 Ministerial Meeting Minutes

To input Ministerial Meetings minutes, click on the Show in the Ministerial meeting column, this then navigates to the data input screen.

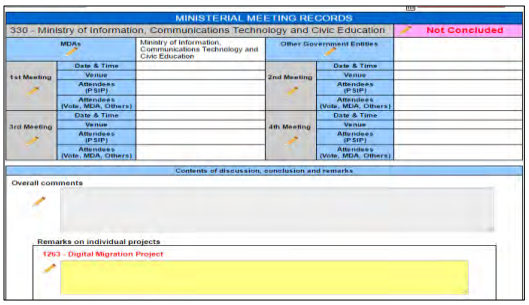


Figure 68: Ministerial minutes data input screen

5.8.12 Summary of Minesterial Minutes

Click on the View Ministerial Minutes Summary in the PSIP process management window.

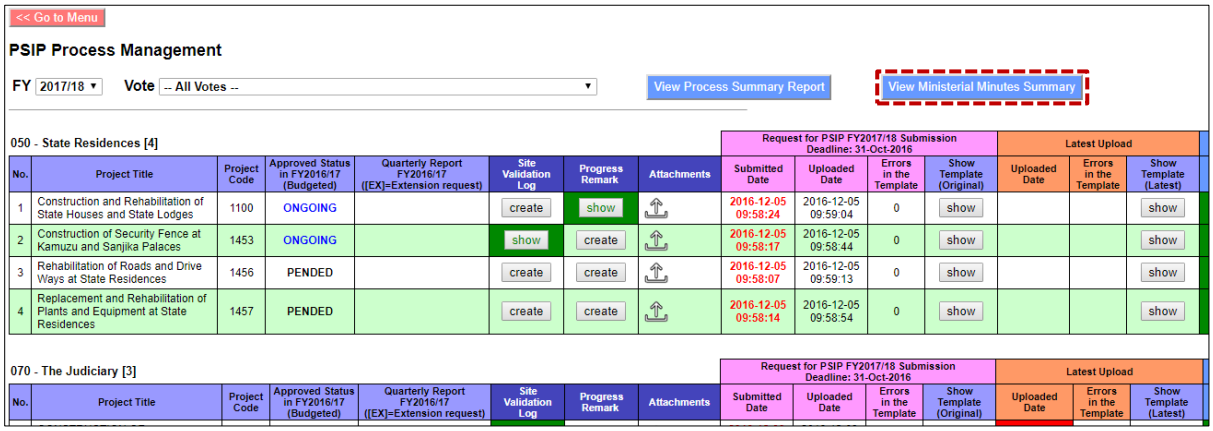
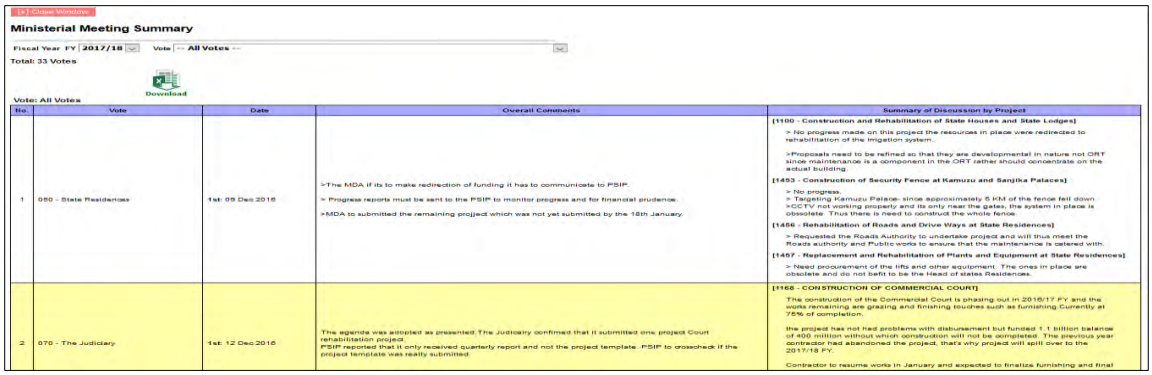
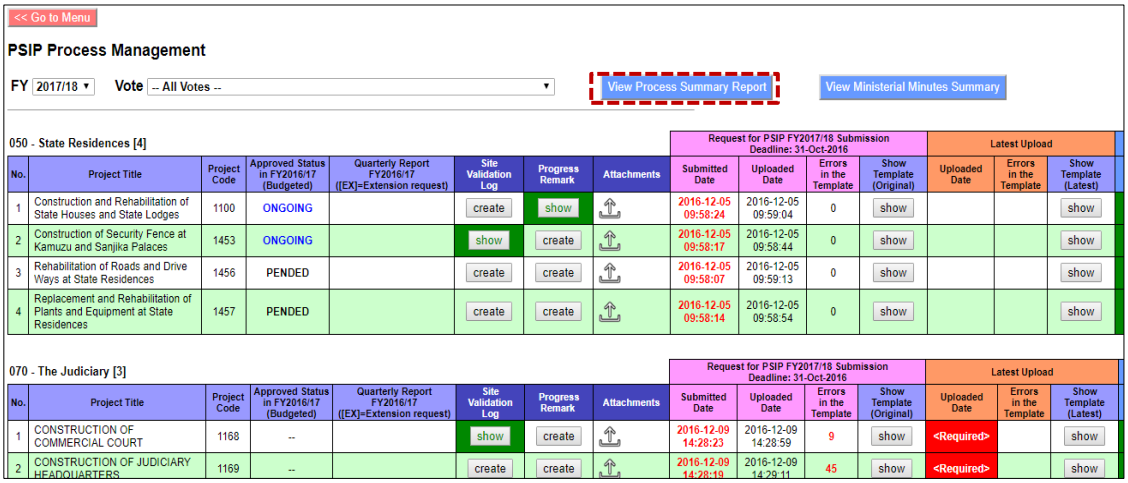


Figure 69: View ministerial minutes button



5.8.13 Process Summary Report

Click on the View process summary report button in the PSIP process management window.



PSIP Process Summary (by Vote)

Fiscal Year FY 2017/18 ▾ Download

No.	Vote	Submitted	Uploaded	# of Projects	1st Appraisal	Ministerial Meeting Minutes	Site Validation Log	Final Appraisal
1	050 - State Residences	4	4	4	4	4	1	4
2	060 - National Audit Office							
3	070 - The Judiciary	3	3	3	3	1	1	3
4	080 - National Assembly	2	2	2	2	2		2
5	081 - Office of the Director of Public Officer's Declarations							
6	090 - Office of the President and Cabinet	2	2	1	1	1		1
7	093 - Department of Human Resources Management and Development	1	1	1	1	1		1
8	097 - Civil Service Commission	1	1	1	1	1		1
9	098 - Greenbelt Authority	1	1	1	1	1		1
10	099 - Office of the Director of Public Procurement (ODPP)							
11	100 - Ministry of Defence	7	7	7	1	6	2	6
12	101 - Malawi Defence Force							
13	120 - Ministry of Local Government and Rural Development	6	6	6	3	6	1	6

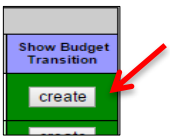
Figure 70: PSIP process Summary screen

5.8.14 Project Transition Screen

(1) To view the Project Transition screen

Project Status Transition			
On Submission	PSIP Recommended	On Budget Approval	Revised in the Mid Year
NEW	--	--	--
NEW	--	--	--

(2) To Create and edit transition budget data.



The create button will navigate to the project status and transition Screen.

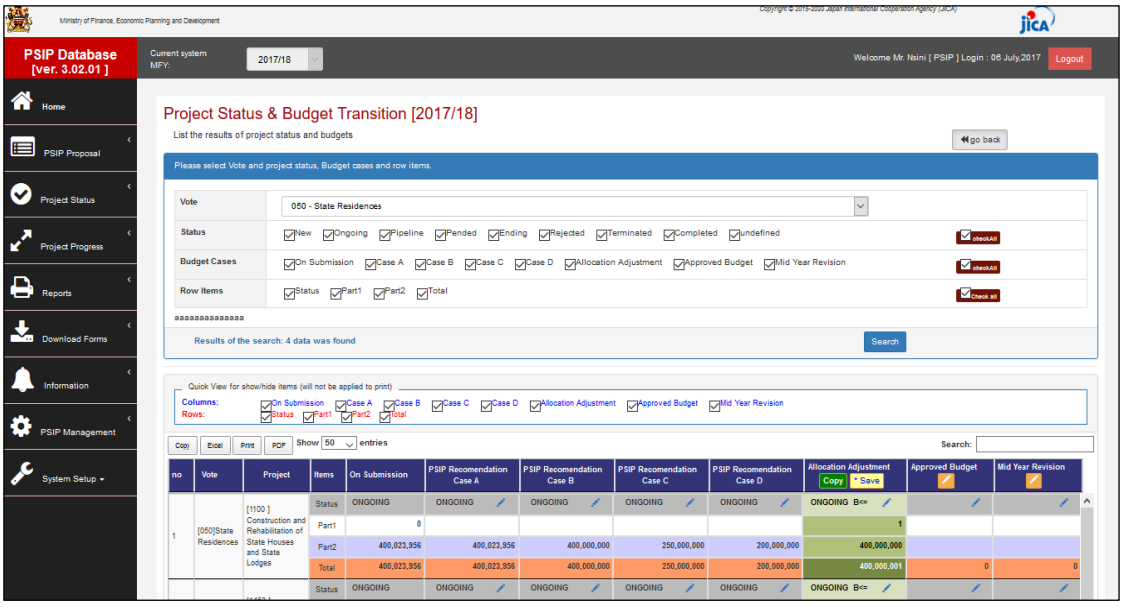


Figure 71: Project status and budget transition screen

5.8.15 Copy Scenario for PSIP Allocation

(1) Click on the copy on the Project Status and Budget Transition to input the proposed status allocation according to the agreed case ceiling allocation afterwards check on the case and click copy on screen.

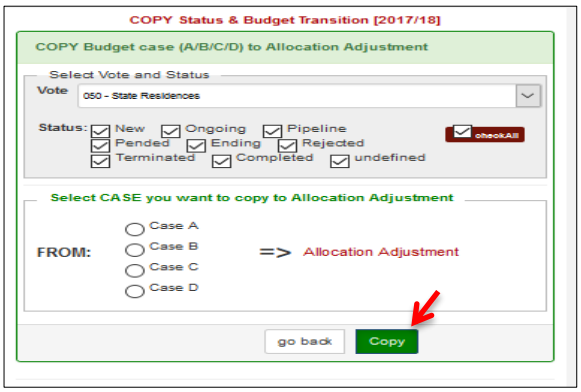


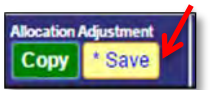
Figure 72: Copy allocation button upon selecting a case

(2) You can change the Vote or Project status to copy all the corresponding information from select case to Allocation Adjustment at once.

[Note] When you copy the scenario case from A-D, you are working **in the temporal adjustment** and **it is NOT yet reflected as PSIP decision visible for MDA users** until you save the data in the next step.

5.8.16 Save scenario to Project table

(1) To save the copied case of allocation as PSIP decision, click on save button on the Project Status and Budget Transition (2017/18) then click on save.



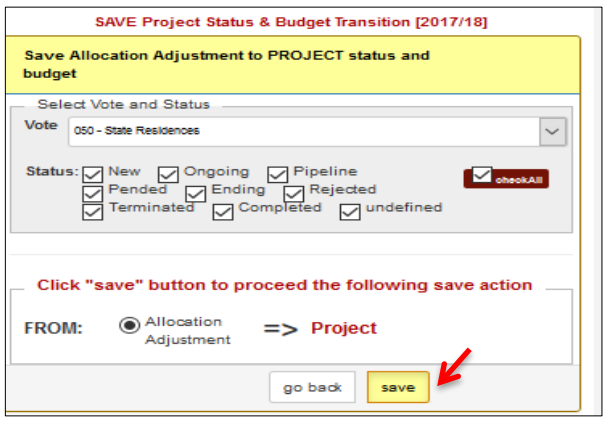


Figure 73: Save allocation adjustment case

After this save operation, the Allocation Adjustment information is reflected to “Project Status” menu and **the status will be visible for MDA users**.

In this page, you can change votes, or select all votes to save all status and budgets from one of four scenarios. It may take few minutes to save all allocation adjustment to the table.

5.8.17 Appraisal Summary Results

(1) This shows the summary of appraisal results of a selected financial year’s submitted projects. It also aggregates requested amount for both Part 1 and Part 2.

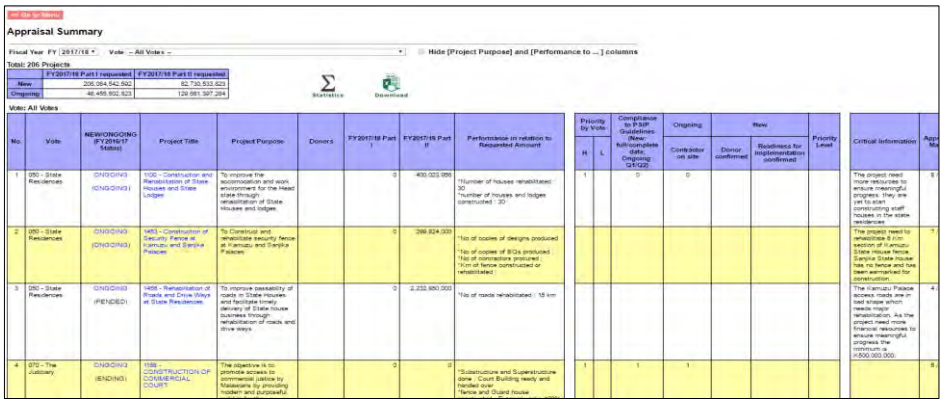


Figure 74 : Appraisal summary screen

(2) If you click on the Sigma it navigates you to appraisal statistics for appraised projects.

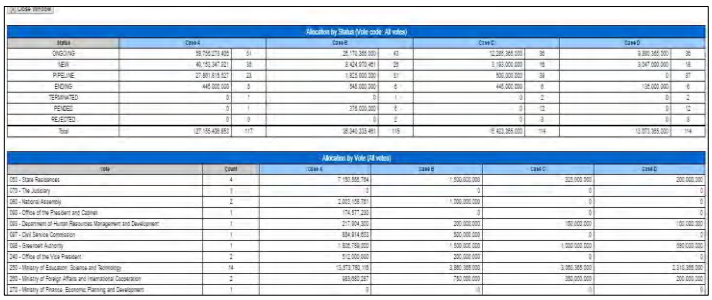


Figure 75: Statistics screen

(3) If you click on the download function the appraisal summary sheet gets downloaded in excel format.

(4) If you click on the project title link, this will navigate to the proposal file.

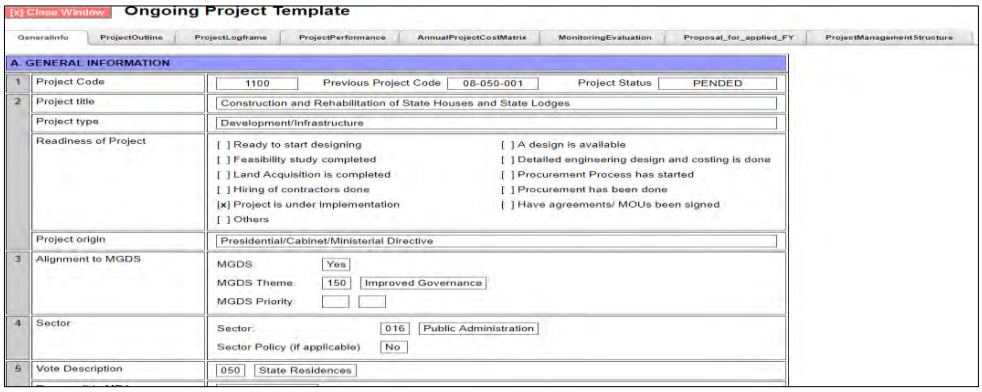


Figure 76: Project proposal file

5.8.18 Web-Based Submission

This is a web based loading function. It loads a Project Template Proposals and Quarterly Progress Reports to the PSIP Database. Open the source project proposal or Quarterly Progress Report folder and drag the Proposal or Report in the Auto in folder. The project then registers automatically.

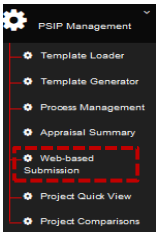
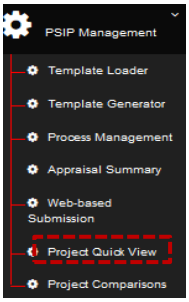


Figure 77: Web based data submission screen

5.8.19 Project Quick View

All projects status can be viewed for current year and proposed next fiscal year, you can also view if the Quarterly Progress Report has been submitted or not by selecting the year and vote. Projects can be viewewed per vote by selecting on the vote list.



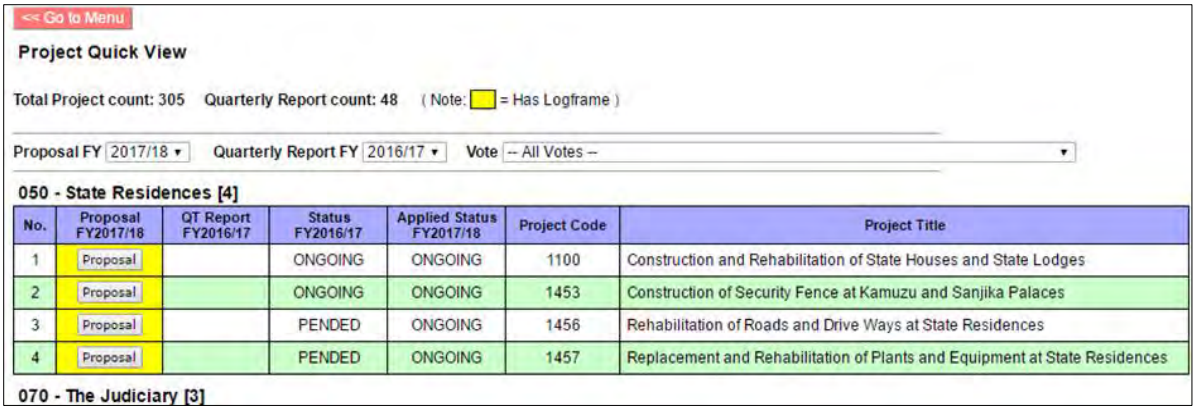
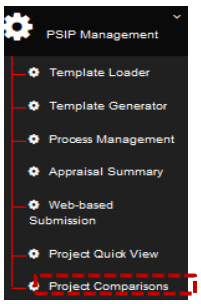


Figure 78: Project Quick View

5.8.20 Project Comparison

A project can be compared in regard of the fiscal year, performance, period of implementation. etc.

(1) To compare project, click on project comparison submenu



(2) The click button for project comparison navigates to a new window

(3) Select vote of choice and select project and fiscal years upon which comparison is made.

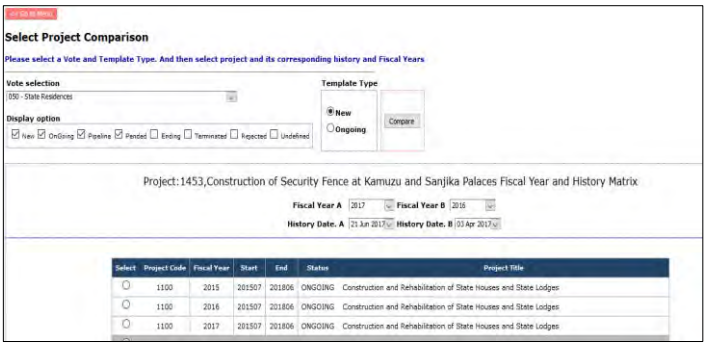


Figure 79: Project comparison screen

(4) Upon selecting the vote, the status and fiscal year click on compare.

(5) Upon the click on the compare button it navigates to a new window with a list of where the comparisons are made

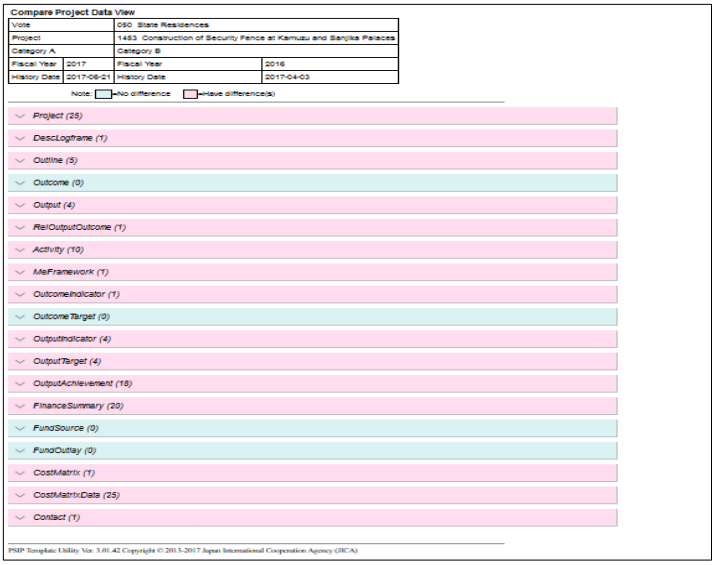


Figure 80: Project data view

(6) Click on any to check the comparisons. E.g. output comparison.

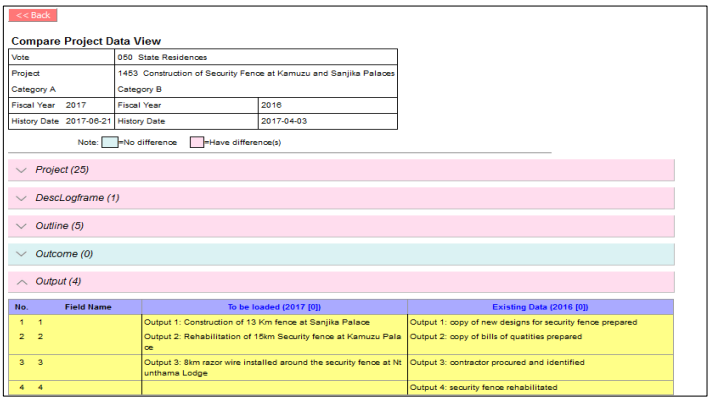
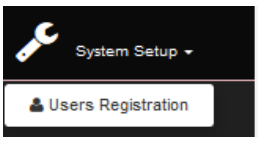


Figure 81: Project data view

6. System Setup

6.1 User Registration (PSIP/Admin Only)

To view the user registration, click on the "system set up" and click user registration. submenu.



(1) This captures all registered users.

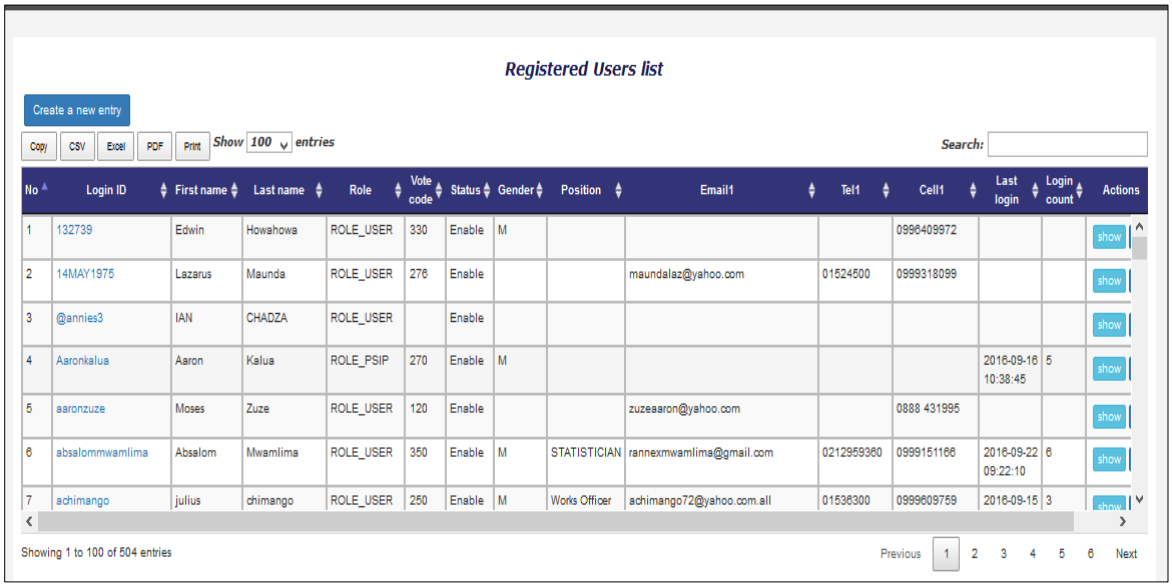


Figure 82: Registered PSIP database users

(2) If you click on the Login Id and Show button in the action Column, it navigates you to the form filled by the user.

Figure 83: Registered users

(3) To create a new entry, click on the “Create new entry” this navigates you to a blank format.

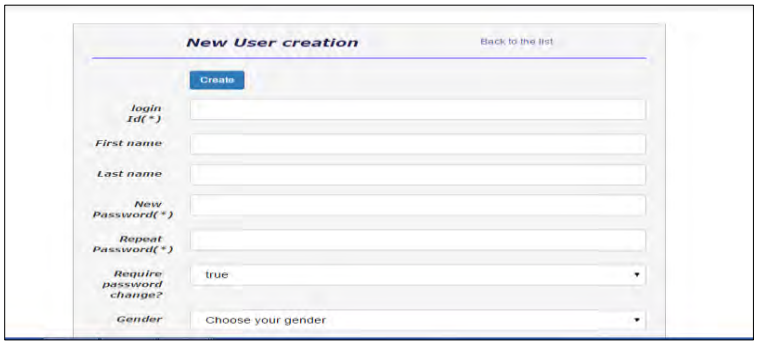


Figure 84: user account creation screen

6.2 PSIP Admin Tool

This shows Master data for PSIP Database maintenance

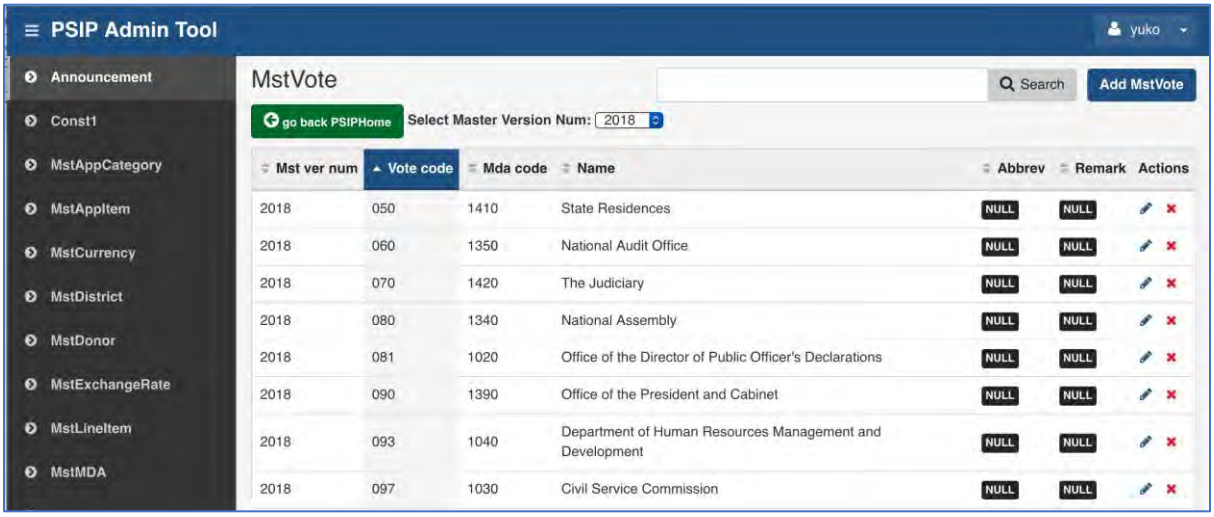


Figure 85: Master data screen

The dropdown list for Master Version Number for all the master data which name starts with “Mst” is displayed. As a default, the current year’s master version is selected and the specified master data is shown on the list.

On the left menu the master names are listed. They are configured in the Symfony config file;

psips/app/config/config.yml

[example of configuration]

```
easy_admin:
    design:
        menu:
- { entity: 'MstVote', default = true}
```

← *Show menu for MstVote*

```
entities:
  MstVote:                                    <-- Define MstVote
    class: Jica\PsipBundle\Entity\MstVote
    list:
      fields: [{property:'mstVerNum', type:'text'}, 'voteCode', 'mdaCode', 'name',
'abbrev', 'remark']
      sort: ['voteCode', 'ASC']
```

6.2.1 Template Generator Batch

This tool generates Excel templates for specified F/Y. Select/set the items (Fiscal year, Destination, Deadline), select template type and status. The system will generate all the Excel Template for specified projects. The default settings are just fit for full set of Templates/Forms generation. In normal case, any change from default settings are needed and the expected action is to press [Submit] button.

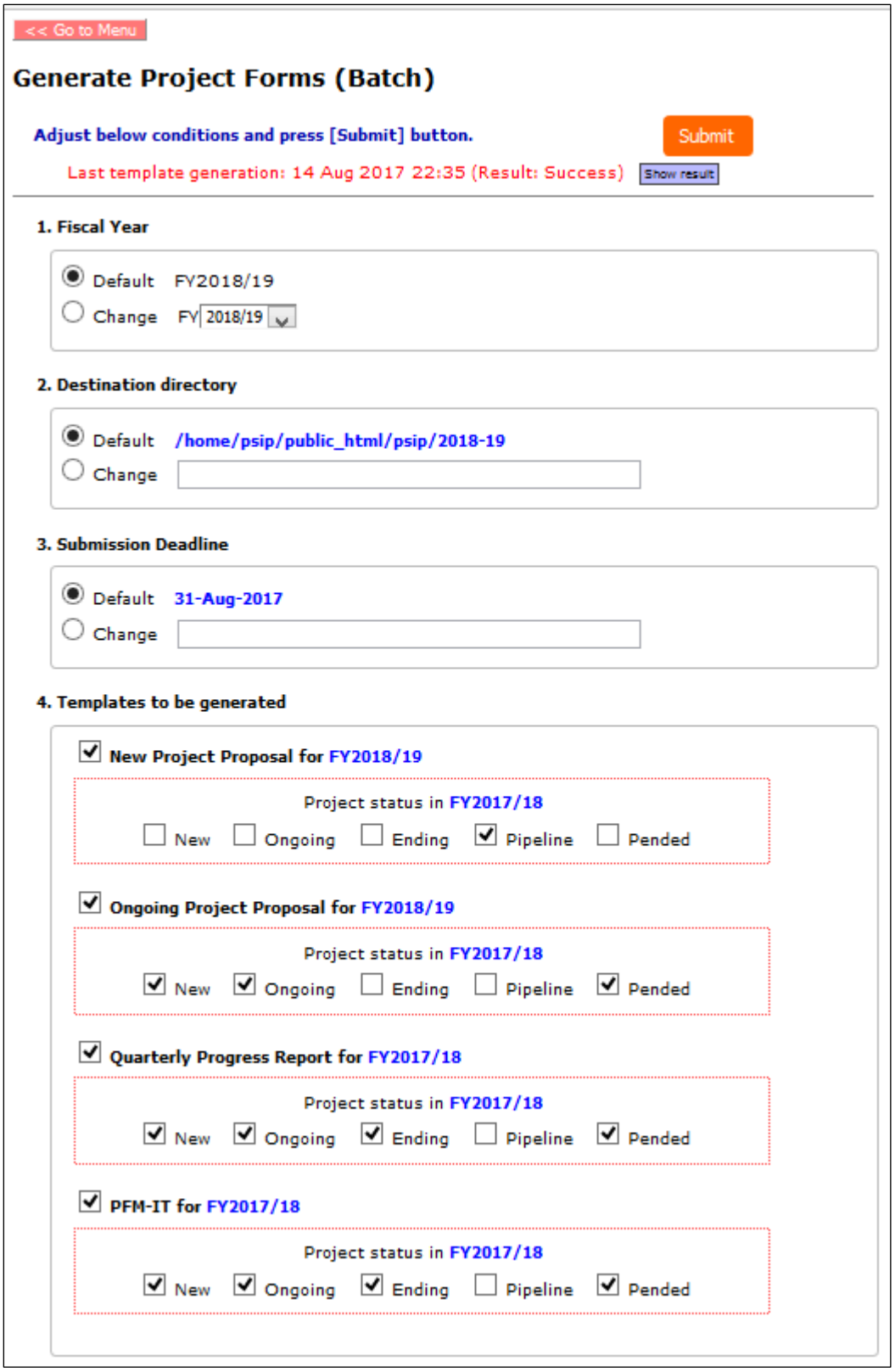


Figure 86: Template Generator Batch

After pressing [Submit] button, the screen is automatically changed to “Generate Project Forms (Monitor)”. The screen indicates the generation job summary and its progress with a progress bar as seen below.

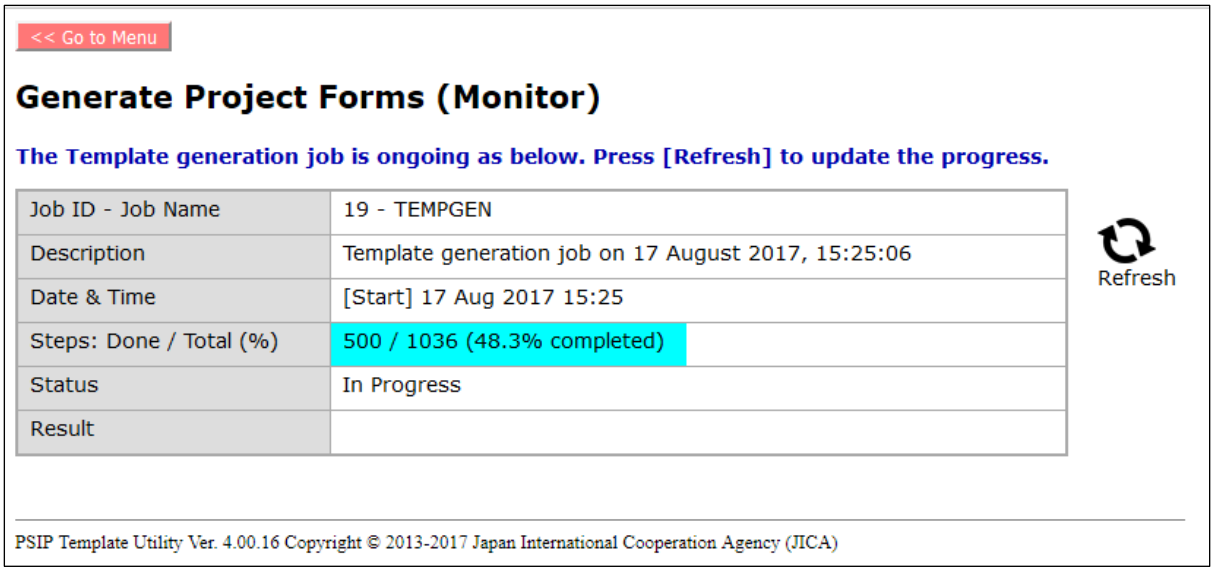
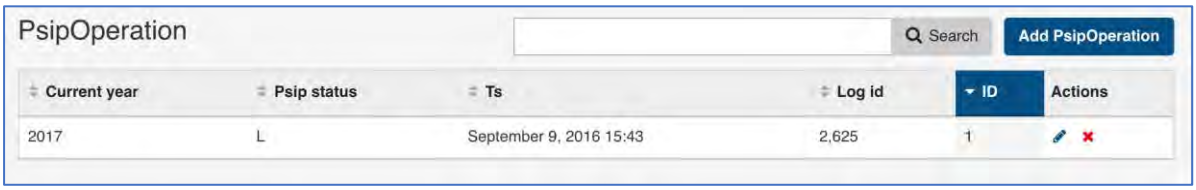


Figure 87: Template Generator Batch

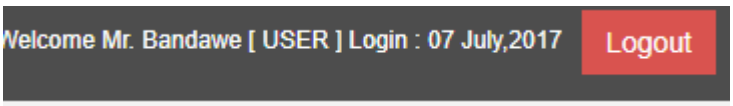
6.3 PSIP Operation (IMPORTANT)

The PSIP Operation is a table where the PSIP base FY is controlled. When Circular #1 is released and the FY is changed to New Year, you have to change the Current year of this table. The PSIP Database system refers this year to determine the current FY.



6.4 Logout

A connection called a session is established each time a user login. To terminate that session the user must logout of the system.



7. User Privileges

7.1 User Roles and privileges

Some restrictions have been placed on the user accounts, which will vary according to the type of user group and the stage of the Public Sector Investment Programming (PSIP) cycle. The access permissions are as follows.

Table 4: Roles and privileges

User Group	Rolls and privileges	Targets
Guests	Guest user can view proposal submissions but cannot download nor view the submission status.	Registered users interested to see the PSIP information including donors
MDA Users	MDA users can view proposal data and download, but no right to edit documents.	MDA users registered to database
PSIP Unit	PSIP officers can edit all Ministries' information such as the project status or appraisal status	The PSIP Officers
Administrator	Administrators will be able to edit all data and manage accounts, database, etc.	IT Officials assigned to maintain the system and database.

7.2 User access authorization

The access control to the Menu and Pages are introduced as shown in the following table.

Table 5: User access authorization

Menu	Submenu	Guest/MDA users	PSIP Unit	Admin	Remark
PSIP Proposal	Submission Status	View except Guest	View	View	
	Project Details	View	View/Edit	View/Edit	
	Show Summary	View	View	View	Excel download allowed to all
Project Status	Status & Approved Budget	View	View/ update status	View/ update status	Display Approved budget and status
Project Performance	Quarterly Progress Report list	View	Edit Extension Request	Edit Extension Request	
	Quarterly Progress Report detail	View	View	View	
Reports	Project List	View	View	View	Excel download to all allowed

Menu	Submenu	Guest/MDA users	PSIP Unit	Admin	Remark
Download Forms	New/ Pipeline/ On-going/QT/ PFM-IT	Download except Guest	Download	Download	
Information	Announcement/ News Letter	View	View	View	
PSIP Tools	Loader/Generator/Process Management/Appraisal Summary/Web based Submission/ Project Quick View	N/A (not shown)	Right to execute	Right to execute	
System Setup	Users (Users registration management)	N/A (not shown)	View	All rights to edit/delete	All user master Database Maintenance
	PSIP Admin Tool	N/A (not shown)	N/A (not shown)	All rights to edit/delete	All master Database Maintenance
	Template Generator(Batch)	N/A (not shown)	N/A (not shown)	Can generate	

8. Proposal submission and PSIP Process

8.1 Proposal Submission flow

Most information of the Proposal and Quarterly Report is “Read only” with a few editable areas in the proposal on the PSIP Database. The original Project Proposal and Quarterly Report are filled in Excel file which MDA users send to the PSIP unit by mail. The PSIP Unit is responsible for the registration of the sent information into the database. If MDA users need to modify the information, they change the contents of the Excel Template and send it again to the PSIP unit.

The following figure represents the proposal submission flow.

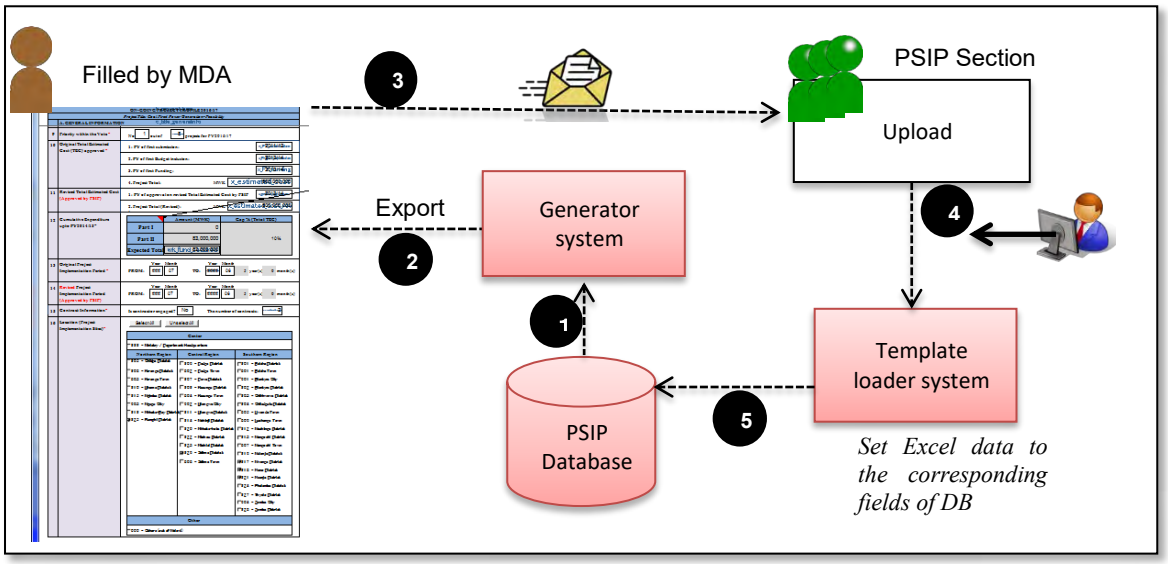


Figure 88: Proposal Submission flow

1) The proposal information already registered to the database is retrieved from the system (in case of On-going).
2) The retrieved data is exported to the corresponding fields of Excel Template (in case of On-going).
3) After MDA users fill in the information in Excel Template, they send it to PSIP Unit.
4) At PSIP Unit, the Excel Template is loaded to the system.
5) The system finally registers the proposal information to the PSIP Database.

8.2 During PSIP Process

As described above, MDA users can create information by Excel Template for New and On-going Projects after the announcement of Circular No1 and for a certain period until the project submission deadline. If a user needs to change project details of the already submitted project, it is required to contact the PSIP Unit and justify their reason for change. Changing project life span will need authorization by way of Extension Request from MFEPD and hence data revision will be approved by MFEPD.

The MDA users will be given about one month to prepare their proposals. During this period, the PSIP Unit will give them technical assistance on how to fill in the template where necessary. To secure enough time for the proposal appraisal by the PSIP Unit, the proposals must be submitted on time.

9. Questions and Answers

Below is a list of questions that a user might ask. If MDA users encounter any problem beyond their control, they will contact the PSIP Unit on **01 788 888 (Ext: 150/164) or psipsubmissions@gmail.com.**.

9.1 System

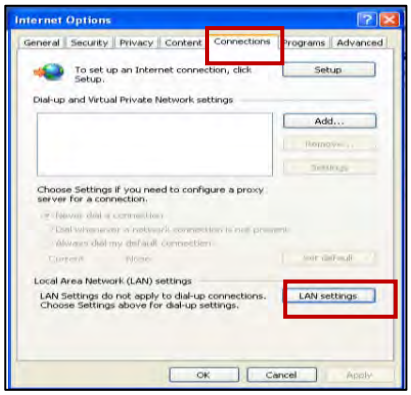
Q1. I cannot connect to the Intranet Database
A: Firstly, confirm that you are on the GWAN network with your Network Administrator. If you are on the GWAN network, check if your network cable is properly connected. If your cable is connected, check if there is a connection by looking for an icon of two computers at the bottom right corner of your screen (in Windows 7). If you are connected and still cannot access the database, call the PSIP Unit to inform that the database is not connected.

Q2. My connection is slow (Only for GWAN Users)

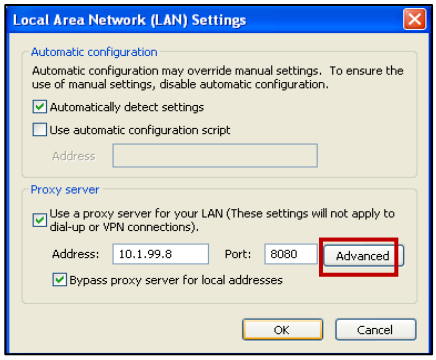
A: On the GWAN Network each command goes via the Proxy Server. This sometimes slows the speed with which the user accesses the database.

The users can bypass the GWAN Proxy server for the PSIP Database which allows them a direct connection to the database. This will also enable them to access to the database even when the Proxy Server is down. To bypass the Proxy you can configure the following settings (in case of Internet Explorer):

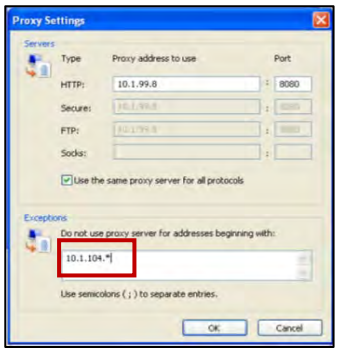
1) Go to Tools on the Internet Explorer menu bar.
2) On the Drop down list select Internet Options.
3) From the window click on Connections on the tabs at the top of the window
4) Click on LAN Settings on the window



5) For the GWAN connection, you may have already proxy setting with the proxy IP address.
6) Click on Advanced.



7) Type “10.1.99.*” on the Exceptions box under "Do not use proxy for addresses beginning with:" which will allow you to bypass the proxy Server.

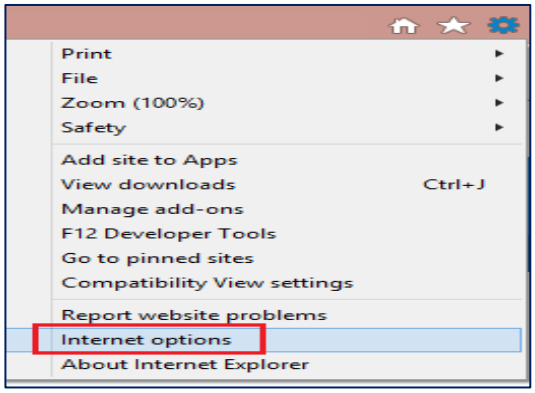


8) Click **OK** on the three pages to activate the settings.

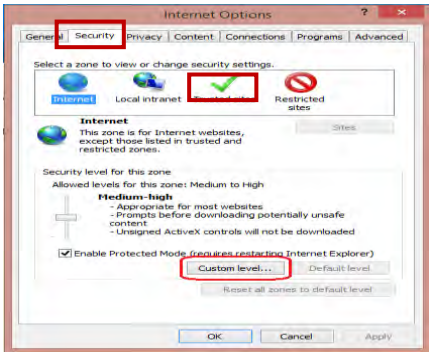
Q3. How can I enable JavaScript in internet explorer

A: The system requires JavaScript enabled since in some pages the JavaScript function is applied. The following procedure explains how to enable JavaScript in Internet Explorer.

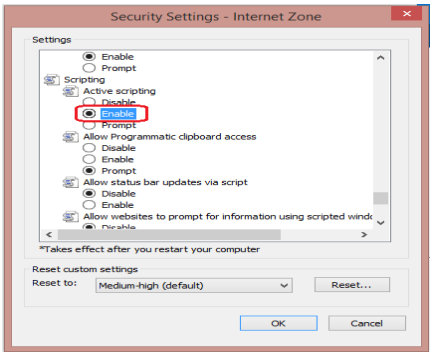
1) On the web browser menu, click Tools or the "Tools" icon (which looks like a gear), and select Internet Options.



2) When the "Internet Options" window opens, select the Security tab.
3) On the "Security" tab, make sure the Internet zone is selected, and then click on the "Custom level..." button



4) In the Security Settings – Internet Zone dialog box, click Enable for Active Scripting in the Scripting section.



5) When the "Warning!" window opens and asks, "Are you sure you want to change the settings for this zone?" select Yes.
6) Click OK at the bottom of the Internet Options window to close the dialog.
7) Click the Refresh button to refresh the page and run scripts.

10. Definitions and acronyms

Below is a list of definitions, acronyms and abbreviations that have been used in this document.

10.1 Definitions

Table 6: Definitions and Acronym

Word	Definition
MySQL	An open source database engine used to manage data in a relational database management system.
PHP	Is a scripting language used to write web applications.
User	A person who makes use of a system.
Database	Consists of an organized collection of data for one or more multiple uses.

10.2 Acronyms and abbreviations

Table 7: Acronyms and abbreviation

Acronyms and abbreviations	Definitions
Admin	Administrator of the system
CEPSIP	Capacity Enhancement in Public Sector Investment Programming
DAS	Development Assistance Strategy
GWAN	Government Wide Area Network
JICA	Japan International Cooperation Agency
MFEPD	Ministry of Finance, Economic Planning and Development
PSIP	Public Sector Investment Program
URL	Unified Resource Locater

11. Annexes

11.1 Annex1: Registration Form

PSIP Database User Account Registration Form	
If users need an account they are required to fill in the form bellow and hand it in to the PSIP Unit.	
Date:	
User ID: (Up to 20 characters)	
First Name:	
Last Name:	
Ministry:	
Position:	
Office Location:	
P.O Box:	
E-mail 1:	
E-mail 2:	
TEL 1:	
TEL 2:	
Fax:	
Cell 1:	
Cell 2:	
Signature	

Official Use only

Approved:	☐ **Yes** ☐ **No** **[Reason:]**
Approved Date	
Initial Password:	
Approved By:	
Registered By:	
Signature:	

Government of Malawi

Public Sector Investment Programme (PSIP)

PSIP DATABASE SERVER SETUP MANUAL

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Department of Economic Planning and Development
P. O. Box 30136
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Document History for PSIP Database (Ver.4)

Date	Revision	By	Remarks
16 Aug, 2017	1.00	Y. Ishikawa	Initial version
29 Aug, 2017	1.01	Y. Ishikawa	Add explanation about ssh setting.

1 Server Structure

A server consists of 1 physical server and 2 virtual servers. The 3 servers concurrently work. The resource allocation and network configuration are shown in next figures.

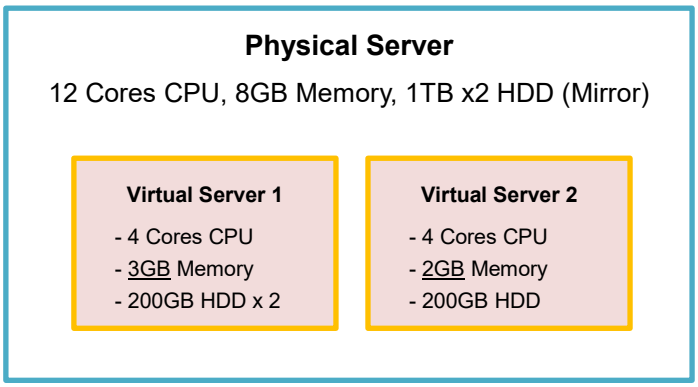


Fig. 1 Server structure and resource allocation

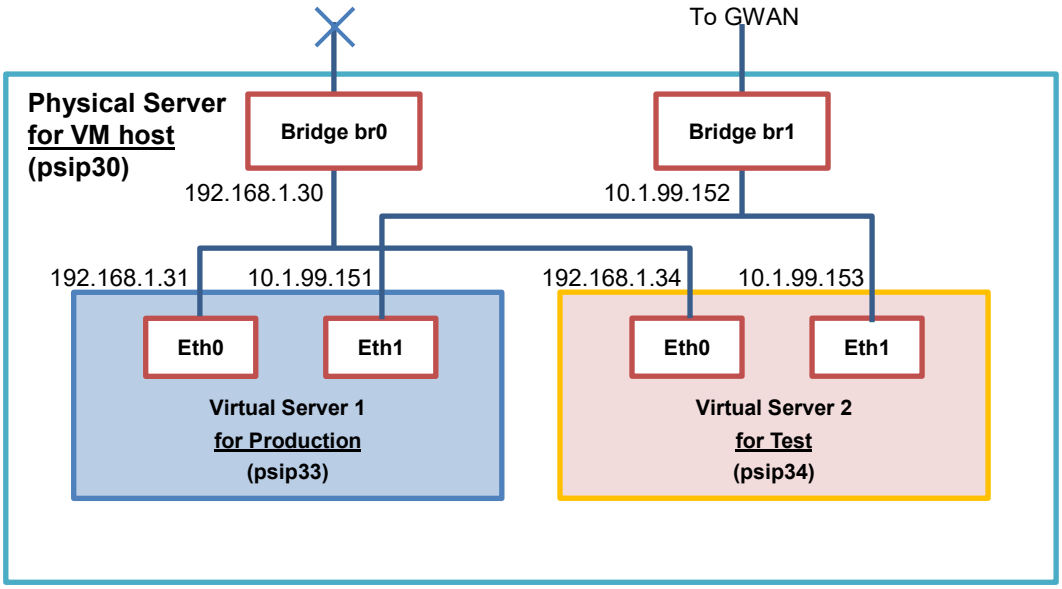


Fig. 2 Network configuration of the server

2 Server Configuration

2.1 Install CentOS for the host server of Virtual machines

Install CentOS 6 or 7 in following condition. Note that the latest distribution has to be selected (6.9 or 7.3 as of 10-Apr-2017).

No.	Item	Configuration
1	Language Support	English (US)
2	Network & Host Name	IP Address = 192.168.1.30 Subnet mask = 255.255.255.0 Gateway (Default route) = 192.168.1.1 DNS1 = 192.168.1.1 Host name = psip30
3	Date & Time	Africa / Johannesburg, Network time = ON
4	Software Selection	Minimal Install
5	Installation Destination	/boot 500MB / Rest of space (About 900GB)
6	Kdump	Disable
7	User creation	psip
8	Password	Set root password and psip user password accordingly

The actual installation procedure of CentOS itself is skipped. Please refer to other sources. Following steps are supposed to be performed after the completion of CentOS installation.

2.2 Configure Physical Server (psip30)

2.2.1 Installing NTFS file system driver

NTFS is a filesystem of Windows. It is needed because the backup device (External USB HDD) is formatted as NTFS. The NTFS filesystem driver is not included in CentOS, therefore it must be obtained from other software contribution society named “epel”.

<Obtain yum repository for epel>

```
[root@psip30 ~]# wget
http://ftp.iij.ad.jp/pub/linux/fedora/epel/6/x86_64/epel-release-6-8.noarch.rpm
[root@psip30 ~]# rpm -ivh epel-release-6-8.noarch.rpm
warning: epel-release-6-8.noarch.rpm: Header V3 RSA/SHA256 Signature, key ID 0608b895: NOKEY
Preparing...                ########################################### [100%]
   1:epel-release           ########################################### [100%]
[root@psip30 ~]# cd /etc/yum.repos.d/
[root@psip30 yum.repos.d]# vi epel.repo
```

```
enabled=0
   ↓
enabled=1
```

<Install NTFS filesystem driver>

```
[root@psip30 yum.repos.d]# yum -y install ntfs-3g
  :
Installed:
  ntfs-3g.x86_64 2:2011.4.12-5.el6

Complete!
```

<Disable epel reporitory>

```
[root@psip30 yum.repos.d]# mv epel.repo epel.repo-disable
[root@psip30 yum.repos.d]# mv epel-testing.repo epel-testing.repo-disable
```

2.2.2 Copy CentOS DVD image from USB external disk and mount the image

As a preparation, the CentOS installation DVD image file (i.e. CentOS-6.5-x86_64-bin-DVD1.iso) has to be copied into the server. It is used for the source of following installations.

In the next steps, the DVD image is supposed to be copied from USB memory. Insert the USB memory into the server's USB port and follow next steps.

```
[root@psip30 yum.repos.d]# cd
[root@psip30 ~]# mount -t ntfs /dev/sdb1 /mnt/
[root@psip30 ~]# cp /mnt/CentOS6.5-iso/CentOS-6.5-x86_64-bin-DVD1.iso .
[root@psip30 ~]# umount /mnt/
[root@psip30 ~]# mkdir /usr/local/share/iso
[root@psip30 ~]# mv CentOS-6.5-x86_64-bin-DVD1.iso /usr/local/share/iso
[root@psip30 ~]# mkdir /mnt/centos-iso
[root@psip30 ~]# mount -o loop -rt iso9660 /usr/local/share/iso/CentOS-6.5-x86_64-bin-DVD1.iso
/mnt/centos-iso
```

2.2.3 Modify reference location of yum command from Internet to local Media

The installation source of CentOS is set to official Internet site but due to bad Internet connectivity, the default source must be changed to the mounted DVD image in the previous step.

```
[root@psip30 ~]# cd /etc/yum.repos.d/
[root@psip30 yum.repos.d]# vi CentOS-Media.repo
```

<Change baseurl definition>

```
baseurl=file:///mnt/centos-iso/

#baseurl=file:///media/CentOS/
#       file:///media/cdrom/
#       file:///media/cdrecorder/
```

```
#       file:///media/CentOS_6.5_Final/
```

```
[root@psip30 yum.repos.d]# mv CentOS-Base.repo CentOS-Base.repo-disable
```

2.2.4 Install bridge utility and configure br0 and br1

To allow virtual servers commonly share the 2 networks – 192.168.1.x and 10.1.99.x, two bridges have to be installed and configured in the VM host server.

```
[root@psip30 ~]# yum install bridge-utils
Loaded plugins: fastestmirror, refresh-packagekit, security
Loading mirror speeds from cached hostfile
 * c6-media:
Setting up Install Process
Package bridge-utils-1.2-10.el6.x86_64 already installed and latest version
Nothing to do
```

2.2.5 Configure network interface to insert a bridge

The purpose is to disable Network Manager and use hard coding configuration.

```
[root@psip30 ~]# cd /etc/sysconfig/network-scripts/
[root@psip30 network-scripts]# mkdir backup
[root@psip30 network-scripts]# cp -p ifcfg-em1 backup/
[root@psip30 network-scripts]# cp ifcfg-em1 ifcfg-br0

[root@psip30 network-scripts]# service NetworkManager stop
Stopping NetworkManager daemon:                            [OK]
[root@psip30 network-scripts]# chkconfig NetworkManager off
```

Create or edit following files.

(1) ifcfg-em1

```
DEVICE=em1
TYPE=Ethernet
ONBOOT=yes
NM_CONTROLLED=no
BOOTPROTO=none
HWADDR=C8:1F:66:E3:85:1E  ← this is varying depending on the hardware
BRIDGE=br0
```

```
DEFROUTE=yes
IPV4_FAILURE_FATAL=yes
IPV6INIT=no
NAME="System em1"
```

(2) ifcfg-br0

```
DEVICE=br0
TYPE=Bridge
DELAY=0
ONBOOT=yes
NM_CONTROLLED=no
BOOTPROTO=none
IPADDR=192.168.1.30
PREFIX=24
GATEWAY=192.168.1.1
DNS1=192.168.1.1
DEFROUTE=yes
IPV4_FAILURE_FATAL=yes
IPV6INIT=no
NAME="System br0"
```

(3) ifcfg-em2

```
DEVICE=em2
TYPE=Ethernet
ONBOOT=yes
NM_CONTROLLED=no
BOOTPROTO=none
HWADDR= C8:1F:66:E3:85:1F  ← this is varying depending on the hardware
BRIDGE=br1
DEFROUTE=yes
IPV4_FAILURE_FATAL=yes
IPV6INIT=no
NAME="System em2"
```

(4) ifcfg-br1

```
DEVICE=br1
TYPE=Bridge
DELAY=0
```

```
ONBOOT=yes
NM_CONTROLLED=no
BOOTPROTO=none
IPADDR=10.1.99.152
PREFIX=24
GATEWAY=10.1.99.251
DNS1=10.1.99.23
DNS2=10.1.99.24
#DEFROUTE=yes
IPV4_FAILURE_FATAL=yes
IPV6INIT=no
NAME="System br1"
```

```
[root@psip30 network-scripts]# service network restart
Shutting down interface br0:                               [  OK  ]
Shutting down interface br1:                               [  OK  ]
Shutting down interface em1:                               [  OK  ]
Shutting down interface em2:                               [  OK  ]
Shutting down loopback interface:                           [  OK  ]
Bringing up loopback interface:                            [  OK  ]
Bringing up interface em1:                                 [  OK  ]
Bringing up interface em2:                                 [  OK  ]
Bringing up interface br0:  Determining if ip address 192.168.1.30 is already in use for device
br0...
                                                           [  OK  ]
Bringing up interface br1:  Determining if ip address 10.1.99.152 is already in use for device
br1...
                                                           [  OK  ]
[root@psip30 network-scripts]# brctl show
bridge name     bridge id               STP enabled     interfaces
br0             8000.c81f66e3851e       no              em1
                                                        vnet0
                                                        vnet2
br1             8000.c81f66e3851f       no              em2
                                                        vnet1
                                                        vnet3
virbr0          8000.525400107ad1       yes             virbr0-nic
virbr1          8000.5254004aa953       yes             virbr1-nic
```

2.2.6 Configure firewall

```
[root@psip30 network-scripts]# cd ..
[root@psip30 sysconfig]# vi iptables
```

<Add a lines are highlighted>

```
# Firewall configuration written by system-config-firewall
# Manual customization of this file is not recommended.
```

```
*filter
:INPUT ACCEPT [0:0]
:FORWARD ACCEPT [0:0]
:OUTPUT ACCEPT [0:0]
-A INPUT -m state --state ESTABLISHED,RELATED -j ACCEPT
-A INPUT -p icmp -j ACCEPT
-A INPUT -i lo -j ACCEPT
-A INPUT -m state --state NEW -m tcp -p tcp --dport 443 -j ACCEPT
-A INPUT -m state --state NEW -m tcp -p tcp --dport 22 -j ACCEPT
-A INPUT -m state --state NEW -m tcp -p tcp --dport 80 -j ACCEPT
# For SOCOMEC USB Monitor LocalView 2015-02-06 Ishikawa
-A INPUT -m state --state NEW -m tcp -p tcp --dport 8080 -j ACCEPT
# For OpenManage Server Administrator 2017-08-15 Ishikawa
-A INPUT -m state --state NEW -m tcp -p tcp --dport 1311 -j ACCEPT
-I FORWARD -m physdev --physdev-is-bridged -j ACCEPT
-A INPUT -j REJECT --reject-with icmp-host-prohibited
-A FORWARD -j REJECT --reject-with icmp-host-prohibited
COMMIT
```

```
[root@psip30 sysconfig]# service iptables restart
```

2.2.7 Adjust sshd configuration for faster login

```
[root@psip30 sysconfig]# cd /etc/ssh
[root@psip30 ssh]# vi sshd_config
```

<Modify below>

```
GSSAPIAuthentication no
  :
UseDNS no
```

2.2.8 Configure /etc/fstab for permanent mount of DVD image

```
[root@psip30 sysconfig]# cd /etc/
[root@psip30 sysconfig]# vi fstab
```

<Add 2 lines>

```
#
# /etc/fstab
# Created by anaconda on Wed Oct 22 16:08:27 2014
#
```

```
# Accessible filesystems, by reference, are maintained under '/dev/disk'
# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info
#
/dev/mapper/vg_psip10-LogVol01 /                       ext4    defaults        1 1
UUID=3abdb7e8-022b-492f-b839-298ba496ef1c /boot                ext4    defaults        1 2
/dev/mapper/vg_psip10-lv_swap swap                    swap    defaults        0 0
tmpfs                   /dev/shm                tmpfs   defaults        0 0
devpts                  /dev/pts                devpts  gid=5,mode=620  0 0
sysfs                   /sys                    sysfs   defaults        0 0
proc                    /proc                   proc    defaults        0 0
/usr/local/share/iso/CentOS-6.5-x86_64-bin-DVD1.iso     /mnt/centos-iso iso9660
loop,ro,auto 0 0
/dev/sdb1               /mnt/ext-hdd    ntfs noauto 0 0
```

The last line is for external backup disk. The setting and usage of the backup scheme are explained in Maintenance Manual/

2.2.9 Start Virtualization Manager

<If you haven't install virtual machine related packages, do next>

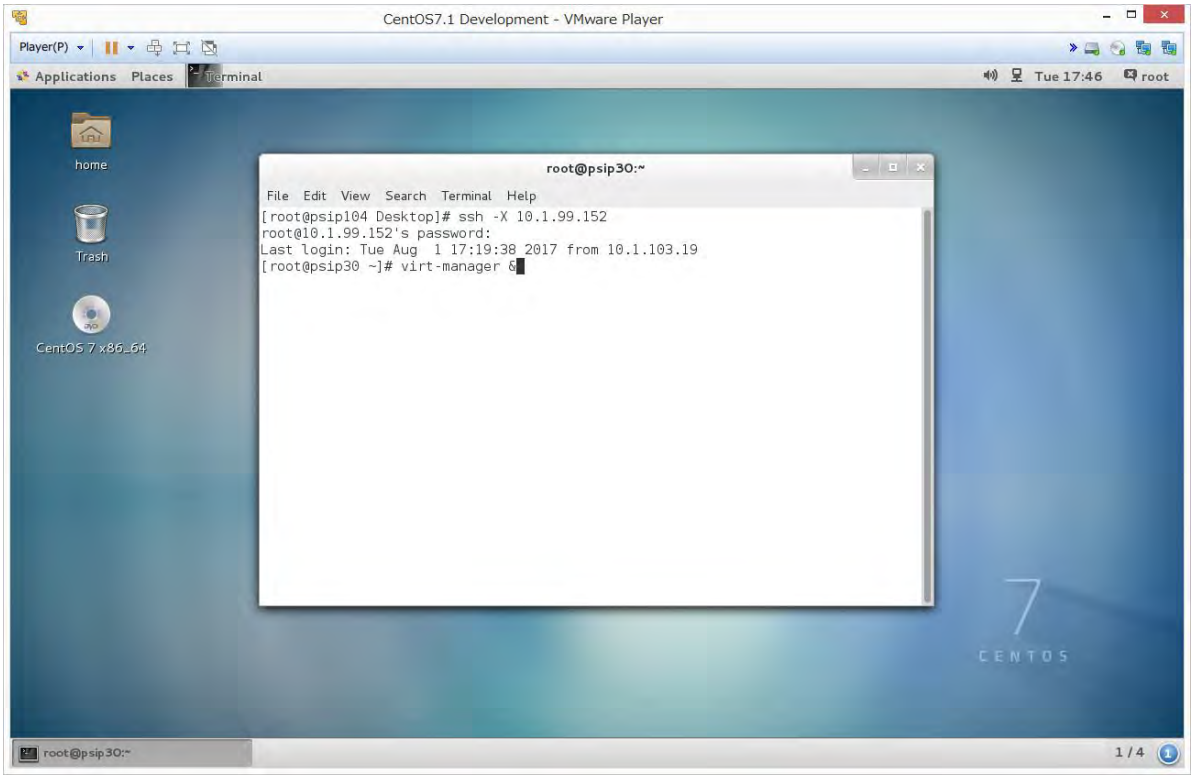
```
[root@psip30 ~]# yum -y groupinstall "Virtualization" "Virtualization Client" "Virtualization Platform" "Virtualization Tools"
```

```
[root@psip30 ~]# virt-manager&
```

[Note]

The virtual machine manager “virt-manager” is an X Window client GUI tool. Therefore this command has to be run on X window server environment. Since psip30 was installed in “Minimal” configuration, it does not contain X Window system modules and therefore no way to use virt-manager directly. Instead of using directly, you can use your PC by running another Linux with X Window server under VMWare Player (or Workstation). If your Linux starts with text based (run level = 3), you can invoke X Window system by typing a command “startx”.

You will see next screen.



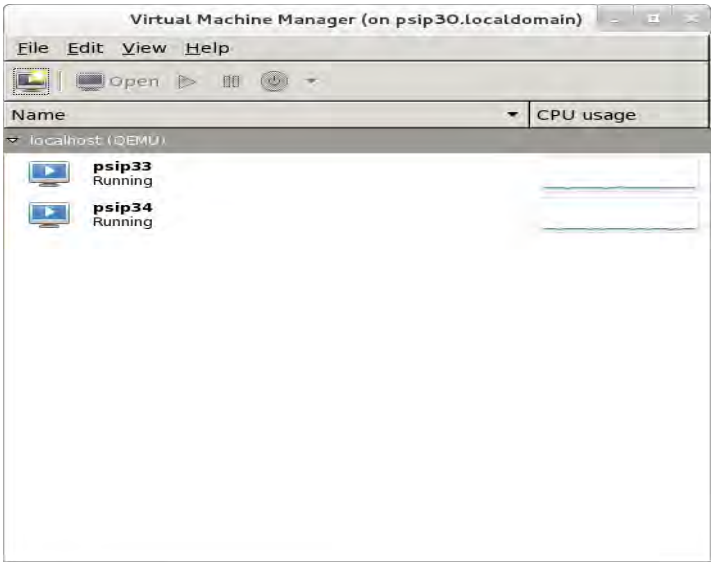
To connect psip30 and invoke virt-manager – but the screen appears on your local PC, do followings.

<Open terminal by clicking right button and choosing “open in terminal”>

<Type as follows in the terminal>

```
[root@psipxx ~]# ssh -X root@10.1.99.152
root@10.1.99.152’s password:
[root@psip30 ~]# virt-manager&
```

You will see next window. The sample shows that there are 2 virtual machine images are running (psip33 and psip34). You can create another virtual machine by clicking left side icon named “Create a new virtual machine”.



The explanation to create new virtual machine is not described in this document. Please check other sources.

To proceed to next section, you are required to create virtual machines by assigning resources defined in Fig.1

2.3 Install CentOS7 to virtual machine 1 (psip33)

Install CentOS 7.x from DVD ISO image with “Minimal” installation option. This explanation is skipped. Create a virtual machine using virt-manager as explained above by allocating the resources (memory, disks and so on) as specified in Fig.1. Note that there are 2 virtual disks, one is for CentOS and the other is for samba storage. The detail configuration of samba storage is explained in Maintenance Manual.

After completing the installation, proceed to following steps.

2.3.1 Set Backspace key as backspace

```
[root@psip33 ~]# stty erase ^H
[root@psip33 ~]# cd
[root@psip33 ~]# vi .bashrc
```

<append next line to the bottom>

```
stty erase ^H
```

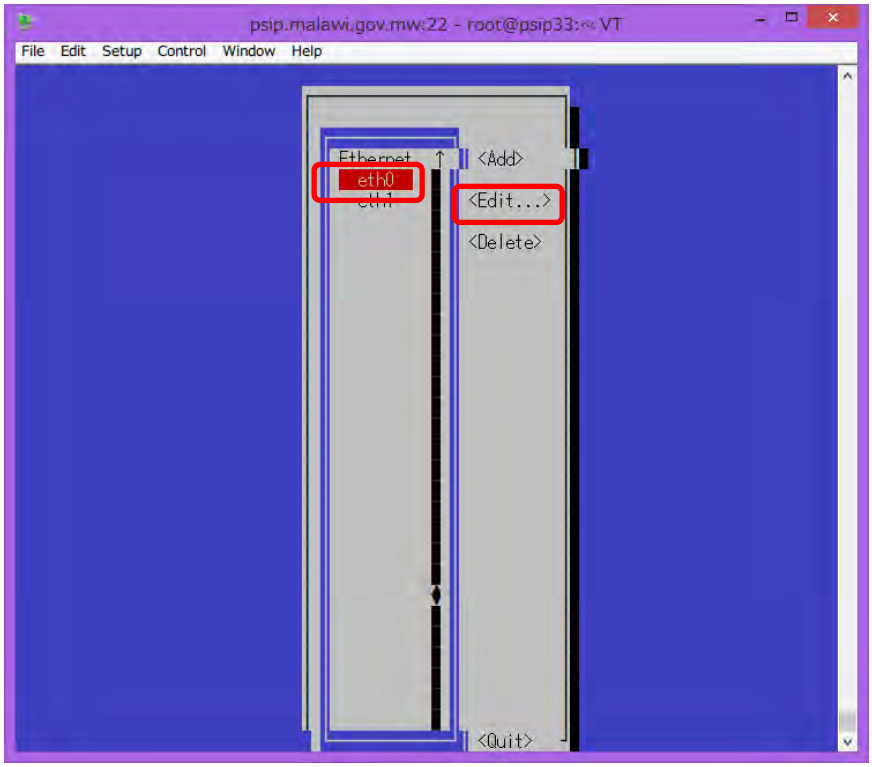
2.3.2 Configure Network

<Use NetworkManager>

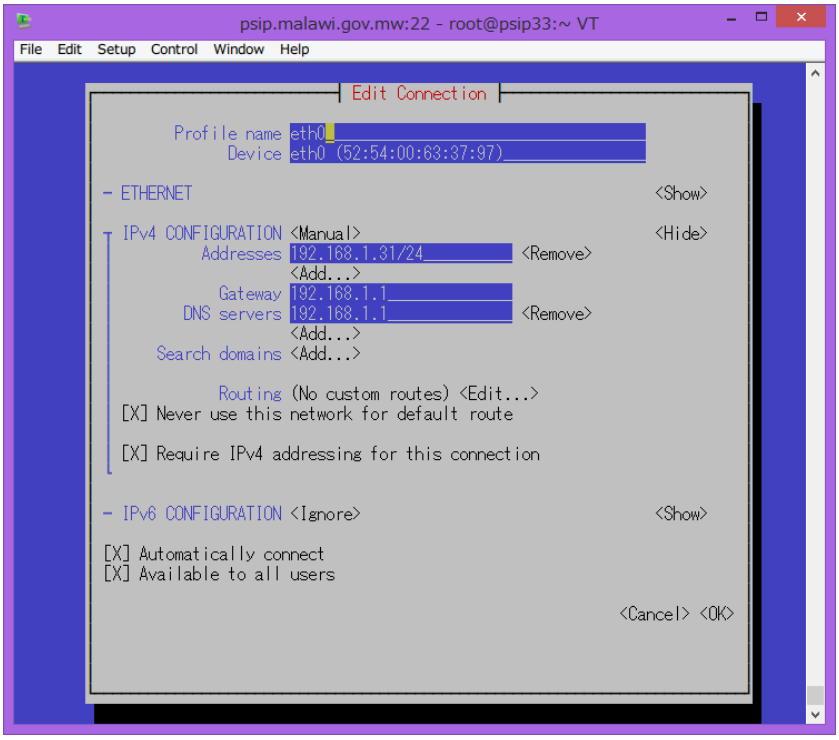
```
[root@psip33 ~]# nmtui
```

<Refer to following screens>

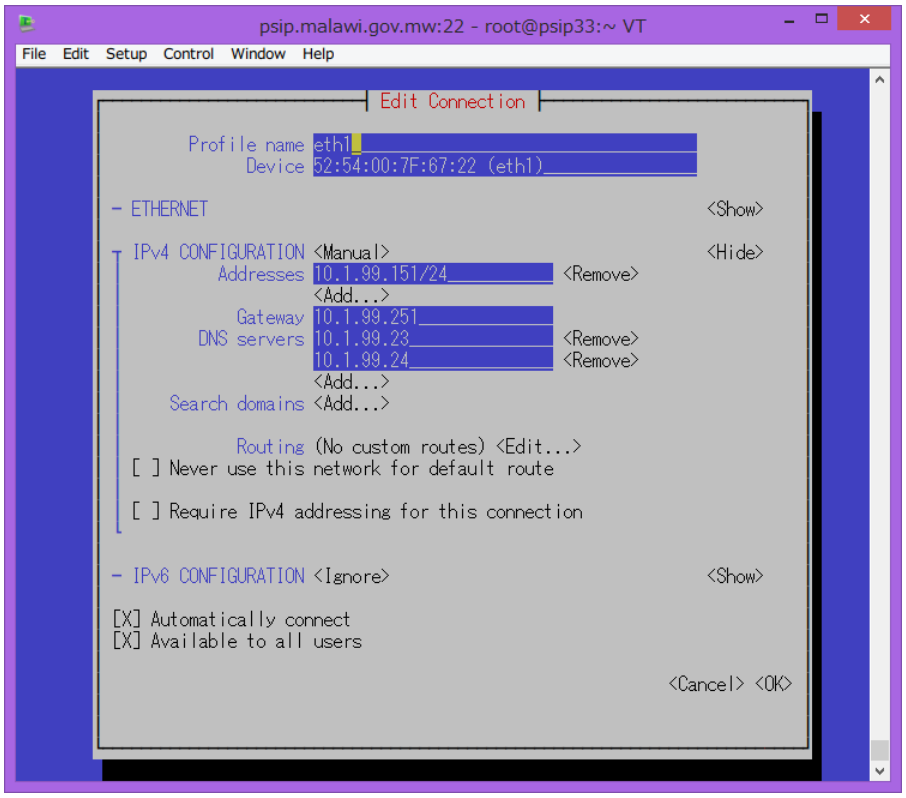
Interface selection



eth0 configuration



eth1 configuration



After saving the changes restart network service.

```
[root@psip33 ~]# systemctl restart network
```

2.3.3 Mount DVD iso image

```
[root@psip33 ~]# mkdir /usr/local/share/iso
```

<Transfer DVD image file to /usr/local/share/iso using WinSCP or other methods>

<The file name should be: CentOS-7.1-x86_64-DVD-1503-01.iso>

(This may be changed according to the package version)

```
[root@psip33 ~]# mkdir /mnt/centos-iso
[root@psip33 ~]# mount -rt iso9660 -o loop
/usr/local/share/iso/CentOS-7.1-x86_64-DVD-1503-01.iso /mnt/centos-iso/
```

2.3.4 Create /etc/yum.repos.d/CentOS-Media.repo and Disable Internet source of yum

```
[root@psip33 ~]# cd /etc/yum.repos.d
[root@psip33 yum.repos.d]# vi CentOS-Media.repo
```

Next contents

```
[c7-media]
name=CentOS-$releasever - Media
baseurl=file:///mnt/centos-iso/
gpgcheck=1
enabled=1
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-CentOS-7
```

```
[root@psip33 yum.repos.d]# mv CentOS-Base.repo CentOS-Base.repo-disable
```

2.3.5 Add packages

<To use ifcondig>

```
[root@psip33 ~]# yum install net-tools
```

<To use emacs>

```
[root@psip33 ~]# yum install emacs-nox
```

<To use zip, unzip>

```
[root@psip33 ~]# yum install zip
[root@psip33 ~]# yum install unzip
```

<To use yum-config-manager>

```
[root@psip33 ~]# yum install yum-utils
```

<To use wget>

```
[root@psip33 ~]# yum install wget
```

<For MySQL 5.6>

```
[root@psip33 ~]# yum install
http://dev.mysql.com/get/mysql-community-release-el7-5.noarch.rpm
[root@psip33 ~]# yum install mysql
[root@psip33 ~]# yum install mysql-server
```

<For PHP 5.6>

```
[root@psip33 ~]# rpm -Uvh
http://ftp.riken.jp/Linux/fedora/epel/7/x86_64/e/epel-release-7-5.noarch.rpm
[root@psip33 ~]# rpm -Uvh http://rpms.famillecollet.com/enterprise/remi-release-7.rpm
[root@psip33 ~]# yum install --enablerepo=remi --enablerepo=remi-php56 php php-opcache
php-devel php-mbstring php-mcrypt php-mysqlnd php-phpunit-PHPUnit php-pecl-xdebug
php-pecl-xhprof
```

<For java 1.7>

```
[root@psip33 ~]# yum install java-1.7.0-openjdk
```

<For intl --- necessary for Symfony 2>

```
[root@psip33 ~]# yum install libicu
```

```
[root@psip33 ~]# yum install libicu-devel
[root@psip33 ~]# yum install gcc
[root@psip33 ~]# yum install gcc-c++
[root@psip33 ~]# pecl install intl
```

<Others>

```
[root@psip33 ~]# yum -y install samba
[root@psip33 ~]# yum -y install samba-client
[root@psip33 ~]# yum -y install cifs-utils
[root@psip33 ~]# yum -y install mod_ssl
```

2.3.6 Configure Apache

```
[root@psip33 ~]# cd /etc/httpd/conf
[root@psip33 conf]# vi httpd.conf
```

```
ServerName localhost:80
 :
DocumentRoot "/home/psip/public_html"
 :
SetEnvIf  Request_URI "web_submit_list\.php" no_log
CustomLog "logs/access_log" combined env=!no_log
 :
```

```
[root@psip33 ~]# cd /etc/httpd/conf.d
[root@psip33 conf.d]# vi userdir.conf
```

<Add / Remove '#' symbols>

```
   # UserDir disabled          ← Add #

    UserDir public_html        ← Remove #

#    Options MultiViews Indexes SymLinksIfOwnerMatch IncludesNoExec   ← Add #
    Options MultiViews SymLinksIfOwnerMatch IncludesNoExec     ← Remove "Indexes"
```

```
[root@psip33 conf.d]# vi psip.conf
```

<Create a file>

```
Alias /psips/ "/home/psip/public_html/psips/"
Alias /psip/ "/home/psip/public_html/psip/"
Alias /tload2/ "/home/psip/public_html/tload2/"
```

[root@psip33 conf.d]# **vi ssl.conf**

<Modify the file>

```
  :
#ServerName www.example.com:443
DocumentRoot "/home/psip/public_html"
ServerName psip.malawi.gov.mw:443
  :
#TransferLog logs/ssl_access_log
LogLevel warn
LogFormat "%h %l %u %t \"%r\" %>s %b \"%{Referer}i\" \"%{User-Agent}i\"" ssl_combined
SetEnvIf  Request_URI "web_submit_list\.php" ssl_no_log
CustomLog "logs/ssl_access_log" ssl_combined env=!ssl_no_log
  :
#SSLCertificateFile /etc/pki/tls/certs/localhost.crt
SSLCertificateFile  /etc/pki/tls/certs/star_malawi_gov_mw.crt ← file name depends on the SSL cert
   :
#SSLCertificateKeyFile /etc/pki/tls/private/localhost.key
SSLCertificateKeyFile /etc/pki/tls/private/star_malawi_gov_mw.key     ← file name depends on the SSL cert
   :
#SSLCertificateChainFile /etc/pki/tls/certs/server-chain.crt
SSLCertificateChainFile /etc/pki/tls/certs/DigiCertCA.crt     ← file name depends on the SSL cert
   :
#   compact non-error SSL logfile on a virtual host basis.
#CustomLog logs/ssl_request_log \
#         "%t %h %{SSL_PROTOCOL}x %{SSL_CIPHER}x \"%r\" %b"
```

[root@psip33 conf.d]# **vi https_redirect.conf**

<Create a file>

```
<ifModule mod_rewrite.c>
     RewriteEngine On
     LogLevel alert rewrite:trace3
     RewriteCond %{HTTPS} off
     RewriteCond %{REMOTE_ADDR} !^(192.168.1.).*$
     RewriteRule ^(.*)$ https://%{HTTP_HOST}%{REQUEST_URI} [R,L]
```

```
</ifModule>
```

```
[root@psip33 conf.d]# systemctl restart httpd
```

2.3.7 Configure MySQL

```
[root@psip33 conf.d]# cd /etc
[root@psip33 etc]# vi my.cnf
```

<Following contents>

```
[mysqld]
#
# Remove leading # and set to the amount of RAM for the most important data
# cache in MySQL. Start at 70% of total RAM for dedicated server, else 10%.
# innodb_buffer_pool_size = 128M
#
# Remove leading # to turn on a very important data integrity option: logging
# changes to the binary log between backups.
# log_bin
#
# Remove leading # to set options mainly useful for reporting servers.
# The server defaults are faster for transactions and fast SELECTs.
# Adjust sizes as needed, experiment to find the optimal values.
# join_buffer_size = 128M
# sort_buffer_size = 2M
# read_rnd_buffer_size = 2M
datadir=/var/lib/mysql
socket=/var/lib/mysql/mysql.sock

# Disabling symbolic-links is recommended to prevent assorted security risks
symbolic-links=0

# Recommended in standard MySQL setup
sql_mode=NO_ENGINE_SUBSTITUTION,STRICT_TRANS_TABLES

innodb_additional_mem_pool_size = 20M
innodb_buffer_pool_size = 512M
innodb_log_buffer_size = 32M

# To prevent an error "Row size too large (> 8126)"
```

```
innodb_file_per_table
innodb_file_format = Barracuda
innodb_file_format_max = Barracuda

skip-character-set-client-handshake
character-set-server = utf8

slow_query_log=1
slow_query_log_file=/var/log/mysql/slow_query.log
long_query_time=1
min_examined_row_limit=1000

#  Query log
#general_log=1
#general_log_file="/tmp/sql.log"
#log_output=FILE

[client]
default-character-set = utf8

[mysqld_safe]
log-error=/var/log/mysqld.log
pid-file=/var/run/mysqld/mysqld.pid
```

```
[root@psip33 conf.d]# systemctl restart mysqld
```

2.3.8 Configure PHP

```
[root@psip33 ~]# vi /etc/php.ini
```

<Add / Change followings>

```
extension=intl.so


date.timezone="Africa/Johannesburg"

memory_limit = 512M
```

```
# Followings are for debugging

display_errors = On

display_startup_errors = On
```

2.3.9 SSH configuration

```
[root@psip33 ~]# cd /etc/ssh
[root@psip33 ssh]# vi sshd_config
```

<Modify below>

```
GSSAPIAuthentication no
  :
UseDNS no
 :
PermitRootLogin without-password        ← Prevent direct root login
```

Note that public key / private key login scheme will be implemented later. By such configuration, root can't login without having the private key. The public key / private key login setting is described in the Maintenance Manual.

2.3.10 Create psip user

```
[root@psip33 ~]# useradd -m psip
[root@psip33 ~]# passwd psip
[root@psip33 ~]# cd /home
[root@psip33 home]# chmod -R 755 psip
```

2.3.11 Disable SELinux

```
[root@psip33 home]# cd /etc/selinux/
[root@psip33 selinux]# vi config
```

```
SELINUX=disabled
```

```
[root@psip33 selinux]# setenforce 0
```

2.3.12 Configure firewall

```
[root@psip33 selinux]# cd /etc/firewalld/zones
[root@psip33 zones]# vi public.xml
```

<Following contents>

```
<?xml version="1.0" encoding="utf-8"?>
<zone>
  <short>Public</short>
  <description>For use in public areas. You do not trust the other computers on networks to
not harm \
your computer. Only selected incoming connections are accepted.</description>
  <service name="dhcpv6-client"/>
  <service name="samba"/>
  <service name="http"/>
  <service name="ssh"/>
  <service name="https"/>
</zone>
```

```
[root@psip33 zones]# systemctl restart firewalld
```

2.3.13 Start services, Enable auto start of services

```
[root@psip33 /]# systemctl enable mysqld
[root@psip33 /]# systemctl start mysqld
[root@psip33 /]# systemctl enable httpd
[root@psip33 /]# systemctl start httpd
[root@psip33 /]# systemctl enable ntpd
[root@psip33 /]# systemctl start ntpd
```

2.3.14 Format and mount the 2nd disk

The second disk with 200GB will be used for samba drive (Windows shared drive). It should be partitioned and formatted before using. Follow below steps to.

<Create Linux partition>

```
[root@psip34 ~]# fdisk /dev/vdb

Welcome to fdisk (util-linux 2.23.2).
  :
Command (m for help): n
Partition type:
   p   primary (0 primary, 0 extended, 4 free)
   e   extended
Select (default p): p
Partition number (1-4, default 1): 1
First sector (2048-419430399, default 2048):  ← ENTER
Using default value 2048
Last sector, +sectors or +size{K,M,G} (2048-419430399, default 419430399): ← ENTER
Using default value 419430399
Partition 1 of type Linux and of size 214 GiB is set
```

```
Command (m for help): t
Selected partition 1
Hex code (type L to list all codes): 83
Changed type of partition 'Linux' to 'Linux'

Command (m for help): w
The partition table has been altered!

Calling ioctl() to re-read partition table.
Syncing disks.
```

<Create Ext4 filesystem>

```
[root@psip34 ~]# mkfs.ext4 /dev/vdb1
mke2fs 1.42.9 (28-Dec-2013)
Filesystem label=
OS type: Linux
 :
Writing superblocks and filesystem accounting information: done
```

<Create mount directory, Mount and Confirm>

```
[root@psip34 ~]# mkdir /var/samba
[root@psip34 ~]# mount /dev/vdb1 /var/samba
[root@psip34 ~]# df
Filesystem            1K-blocks    Used Available Use% Mounted on
/dev/mapper/centos-root  52403200  8071592  44331608  16% /
devtmpfs                  1531300        0   1531300   0% /dev
tmpfs                     1540624        0   1540624   0% /dev/shm
tmpfs                     1540624     8540   1532084   1% /run
tmpfs                     1540624        0   1540624   0% /sys/fs/cgroup
/dev/loop0                4209322  4209322         0 100% /mnt/centos-iso
/dev/mapper/centos-home 153484060 10928404 142555656   8% /home
/dev/vdb1               206291944 15825720 179964132   9% /var/samba
/dev/vda1                  508588   129252    379336  26% /boot
```

<Make this mount permanent (also for DVD image)>

```
[root@psip33 ~]# vi /etc/fstab
```

```
#
# /etc/fstab
# Created by anaconda on Wed Jul 22 11:23:08 2015
#
# Accessible filesystems, by reference, are maintained under '/dev/disk'
# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info
#
/dev/mapper/centos-root /                       xfs     defaults        0 0
UUID=7bcac1fc-1eec-4f7e-9b5a-fb34dfc8f0f1 /boot                   xfs     defaults        0 0
```

```
/dev/mapper/centos-home /home                   xfs     defaults        0 0
/dev/vdb1 /var/samba                    ext4    defaults        0 0
/dev/mapper/centos-swap swap                    swap    defaults        0 0
/usr/local/share/iso/CentOS-7.1-x86_64-DVD-1503-01.iso    /mnt/centos-iso iso9660
loop,ro,auto 0 0
```

2.3.15 Reboot and confirm

```
[root@psip33 home]# shutdown -r now
```

<After rebooting>

```
[root@psip33 ~]# free
              total        used        free      shared  buffers     cached
Mem:       2956356      175484     2780872           0       6052      54004
-/+ buffers/cache:      115428     2840928
Swap:      3096568           0     3096568
```

2.3.16 Configure system clock

Depending on the BIOS setting, the system clock sometimes shows incorrect time. It might be 2 hours delayed from local time. It is because of the configuration of hardware clock, either it keeps local time or UTC. To confirm it, you just type “date” as a command.

```
[root@psip33 ~]# date
Fri Aug  4 10:24:08 SAST 2017
```

If the indicated time was 2 hours behind from real time, you have to do followings, otherwise you should skip.

```
[root@psip33 ~]# hwclock --hctosys --utc
[root@psip33 ~]# hwclock --systohc --utc
[root@psip33 ~]# date
Fri Aug  4 12:24:33 SAST 2017
```

Note: To change it back to previous, give “localtime” instead of “utc” above.

2.4 Configure virtual machine 2 (psip34)

The virtual machine 2 (psip34) is copied from virtual machine 1 (psip33). It is done on VM host machine (psip30). Before copying, the virtual machine 1 has to be shut down by next command.

```
[root@psip33 ~]# shutdown -h now
```

2.4.1 Clone virtual machine

```
[root@psip30 ~]# virt-clone --original psip33 --name psip34 --file
/var/lib/libvirt/images/psip34.img
Allocating 'psip34.img'                                  | 200 GB     06:41
Clone 'psip34' created successfully.

[root@psip30 ~]# virsh list --all
 Id    Name                           State
----------------------------------------------------
 -     psip33                         shut off
 -     psip34                         shut off
```

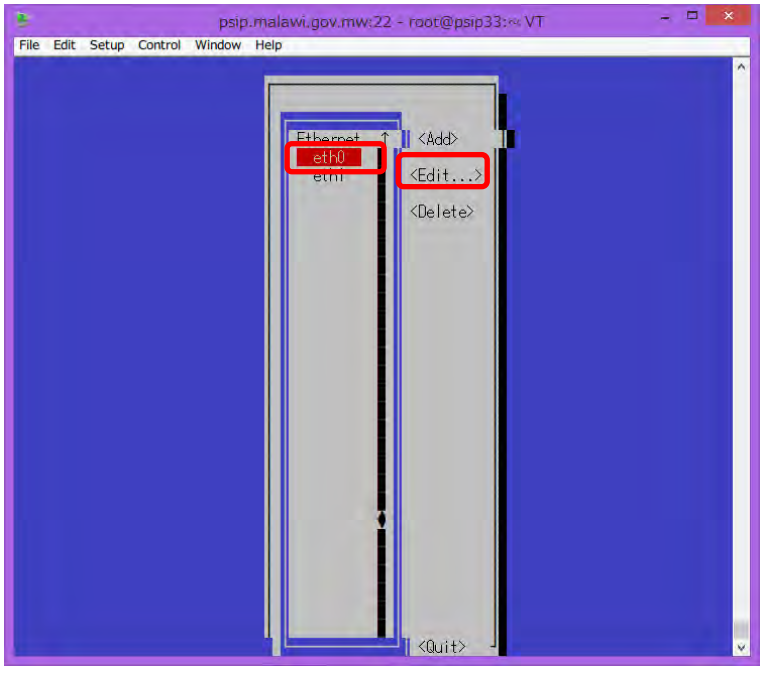
2.4.2 Configure Network

<Use NetworkManager>

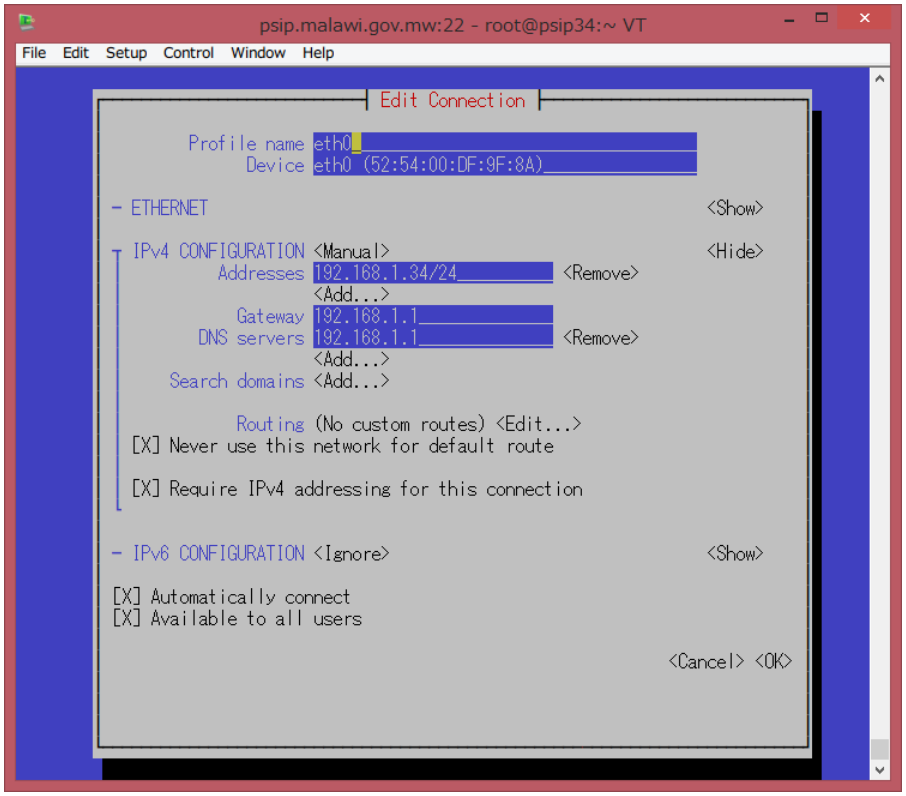
```
[root@psip34 ~]# nmtui
```

<Refer to following screens>

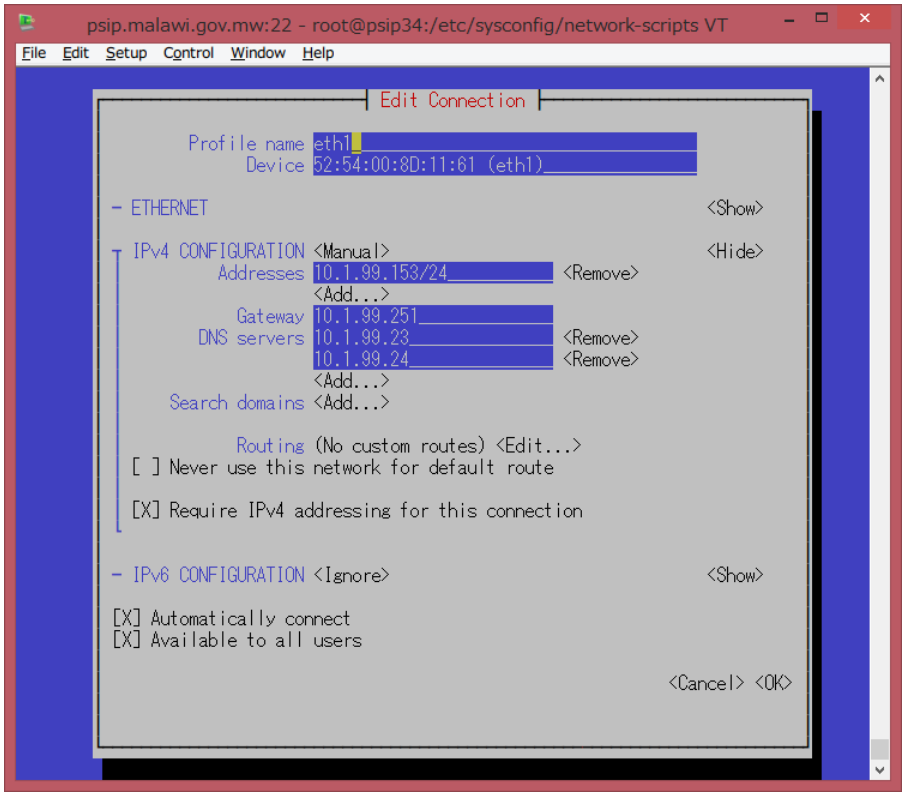
Interface selection



eth0 configuration



eth1 configuration



2.4.3 Configure Memory

Shutdown psip34 and reduce the memory size from 3072M to 2048M using virt-manager.

2.4.4 Configure automatic shutdown for virtual machines

<On psip30>

```
[root@psip30 ~]# cd /etc/sysconfig
[root@psip30 sysconfig]# vi libvirt-guests
```

<Change follows>

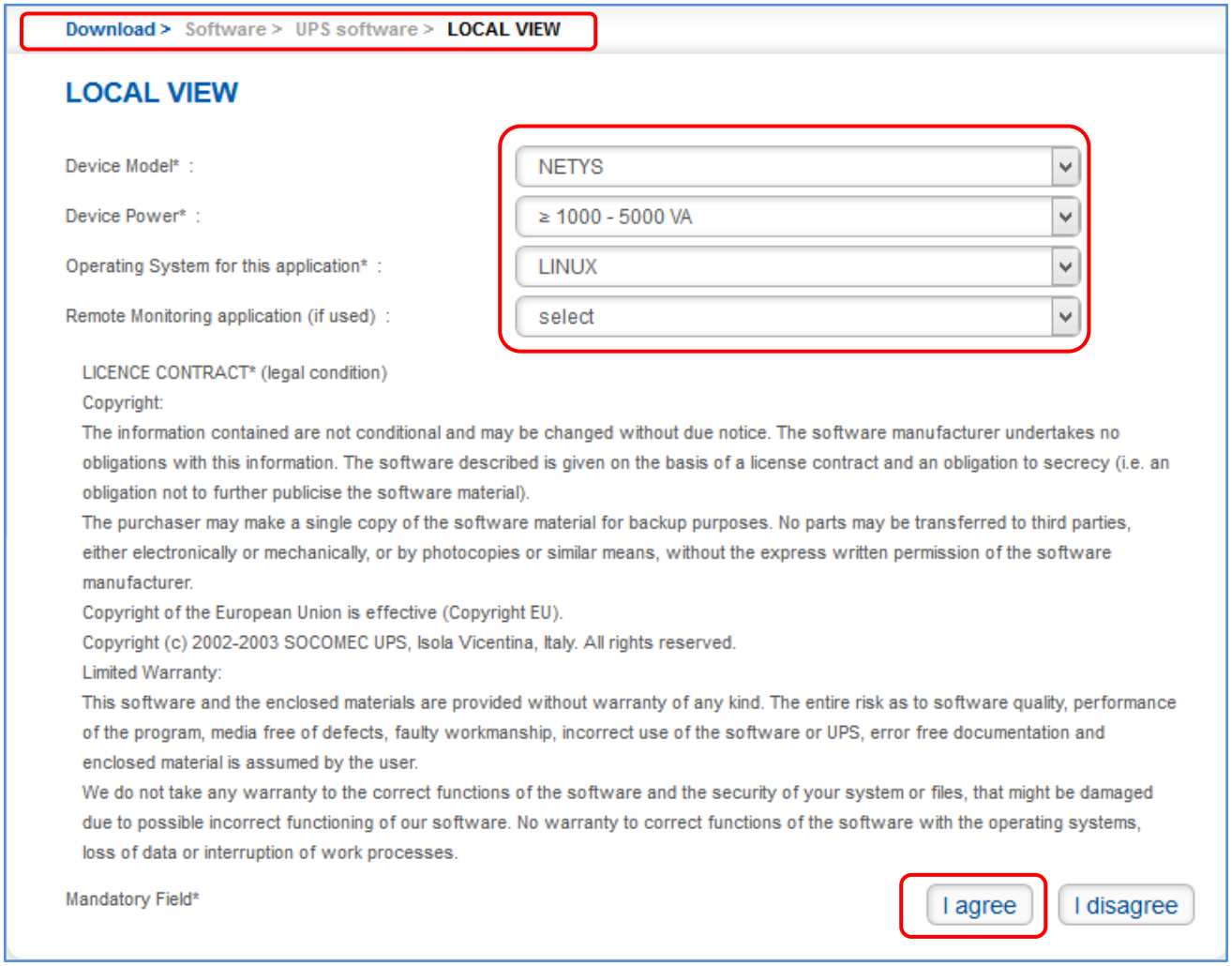
```
  :
#ON_SHUTDOWN=suspend
ON_SHUTDOWN=shutdown
  :
#SHUTDOWN_TIMEOUT=300
SHUTDOWN_TIMEOUT=120
```

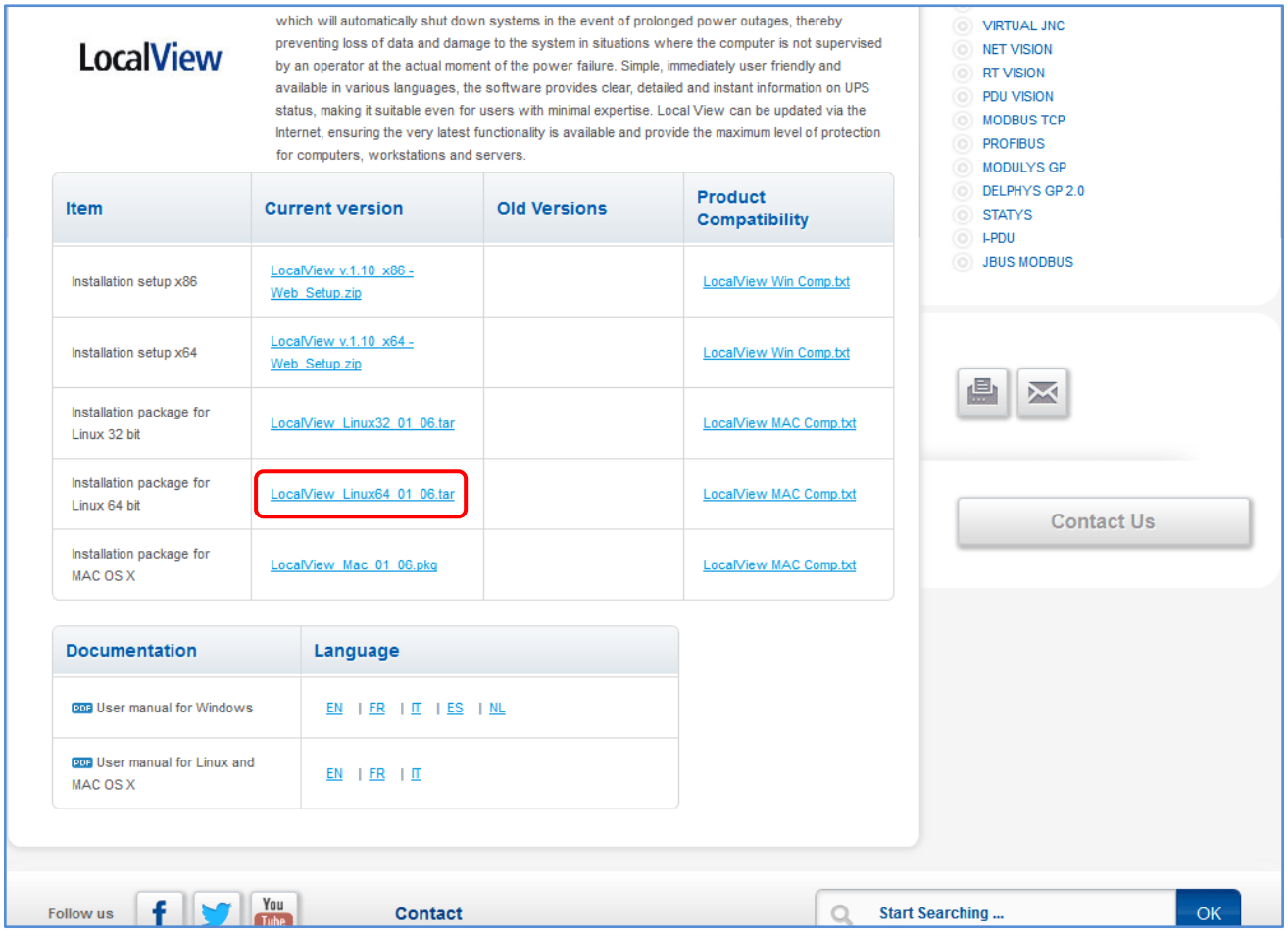
3 Peripheral interfaces

3.1 SOCOMEC UPS monitoring software (psip30)

3.1.1 Download Local View software

Access http://www.socomec.com/ and download the software named “Local View” for Linux.





3.1.2 Installing SOCOMEC Local View

Upload the downloaded file “LocalView_Linux64_01_06.zip” onto the server psip30 and do followings

```
[root@psip30 ~]# unzip LocalView_Linux64_01_06.zip
Archive:  LocalView_Linux64_01_06.zip
   creating: LocalView_Linux64_01_06.tar/
  inflating: LocalView_Linux64_01_06.tar/LocalView_Linux64_01_06.tar
[root@psip30 ~]# ls
anaconda-ks.cfg  epel-release-6-8.noarch.rpm  LocalView_Linux64_01_06.zip  Public
Desktop          install.log                  mbox                         Templates
Documents        install.log.syslog           Music                        Videos
Downloads        LocalView_Linux64_01_06.tar  Pictures
[root@psip30 ~]# ls LocalView_Linux64_01_06.tar/
LocalView_Linux64_01_06.tar
 [root@psip30 ~]# cd LocalView_Linux64_01_06.tar/
[root@psip30 LocalView_Linux64_01_06.tar]# tar xvf LocalView_Linux64_01_06.tar
LocalView/
```

```
LocalView/libMonoPosixHelper.so
LocalView/libmono-2.0.so.1
  :
[root@psip30 LocalView_Linux64_01_06.tar]# sh install.sh
```

Edit /etc/rc.d/rc.local file to include following highlighted lines. This is to automatically start the Local View software in boot up time.

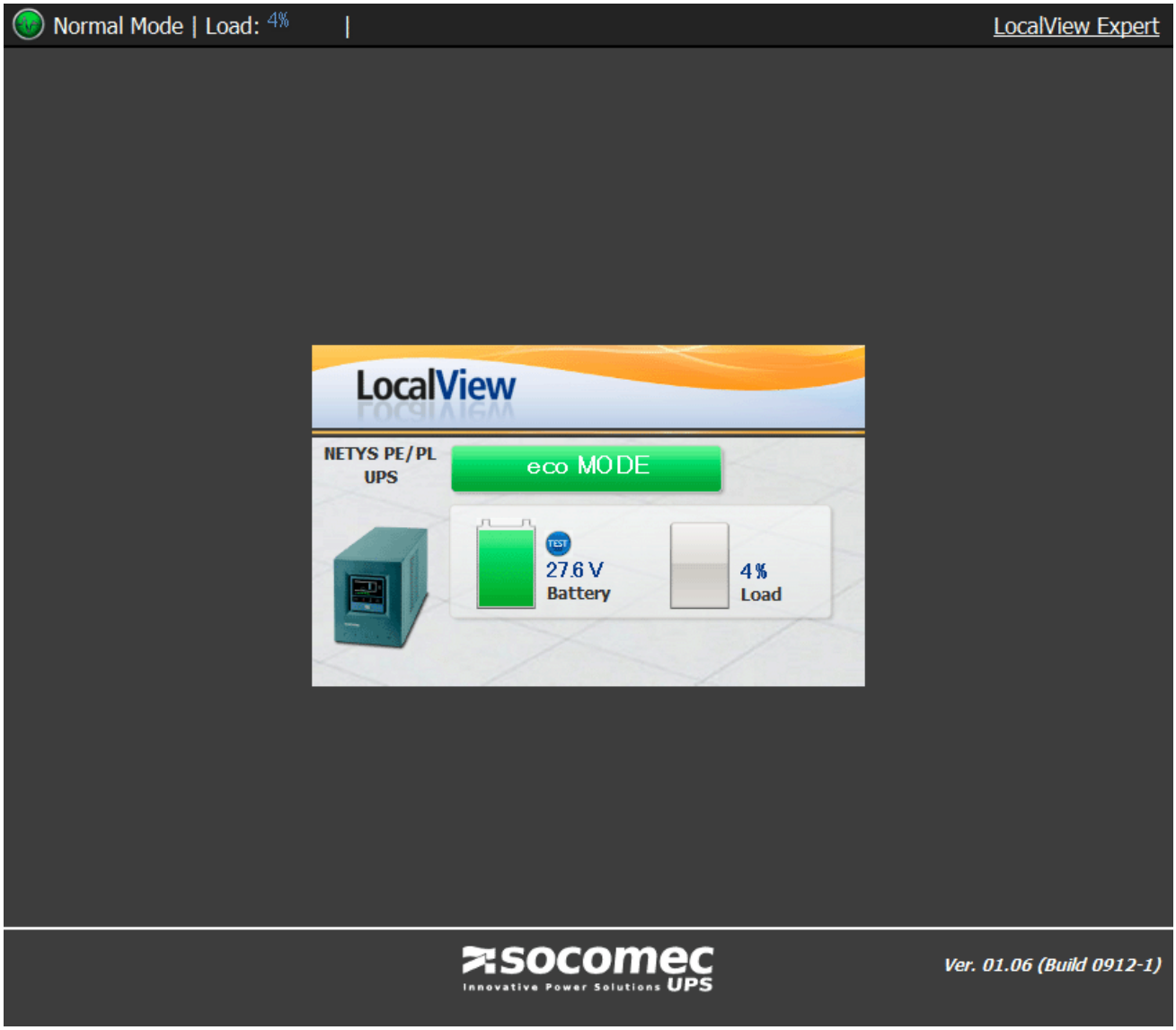
```
#!/bin/sh
#
# This script will be executed *after* all the other init scripts.
# You can put your own initialization stuff in here if you don't
# want to do the full Sys V style init stuff.

touch /var/lock/subsys/local
# for UPS monitor
sh '/usr/Socomec UPS/LocalView/StartApp.sh' &
```

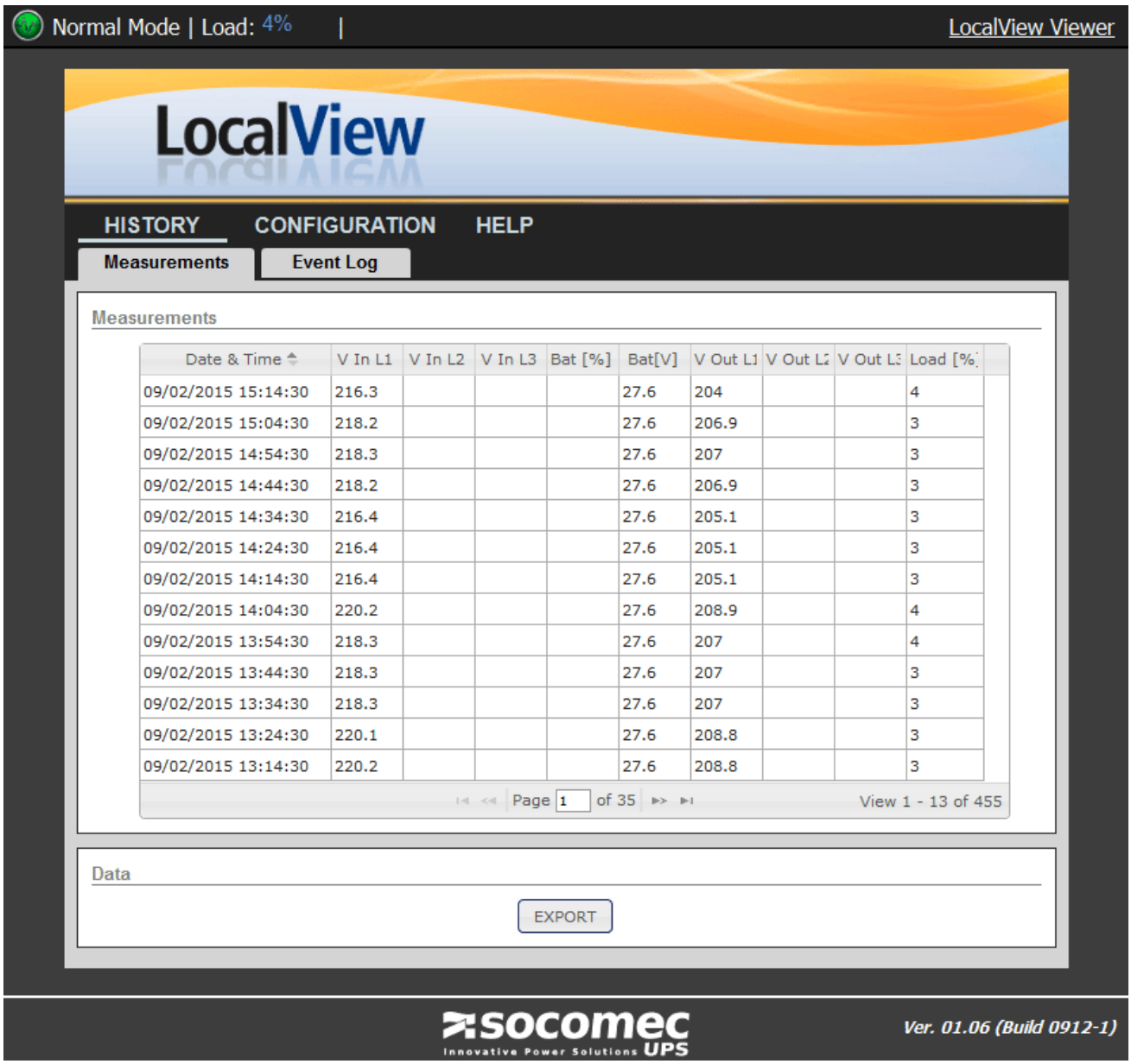
3.1.3 Configure automatic shutdown

Run a browser and access to next URL to invoke Local View software.

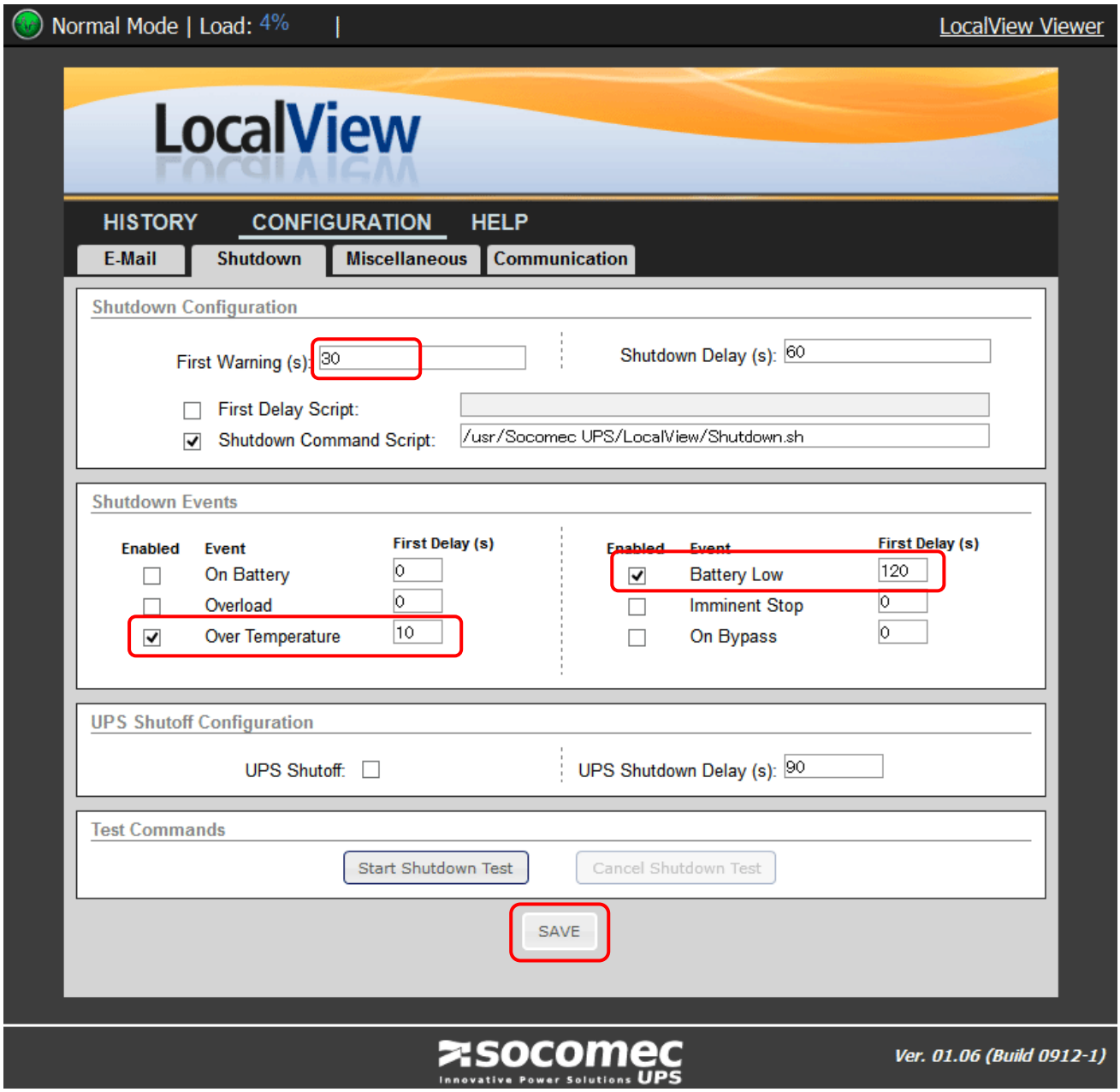
http://192.168.1.30:8080/index.html



To configure automatic shutdown of the server, click [LocalView Expert] link in right upper corner.



Press [CONFIGURATION] menu and select [Shutdown] tab.



Set the shutdown scheme as seen above screen.

3.2 OpenManage Server Administrator (psip30)

3.2.1 Install OpenManage Server Administrator

OpenManage Server Administrator (OSMA) is sued to monitor DELL raid system. This requires Internet access because the installed files are downloaded from DELL's site.

<Add yum repository "dell-system-update_dependent">

```
[root@psip30 ~]# wget -q -O - http://linux.dell.com/repo/hardware/latest/bootstrap.cgi | bash
```

```
[root@psip30 ~]# yum install srvadmin-all
[root@psip30 ~]# /opt/dell/srvadmin/sbin/srvadmin-services.sh start
```

<Test – Display the server hardware health condition>

```
[root@psip30 ~]# omreport chassis
```

<Test – Display the raid condition>

```
[root@psip30 ~]# omreport storage vdisk
```

<Test – Display the storage controller health condition>

```
[root@psip30 ~]# omreport storage pdisk controller=0
```

<Disable yum repository "dell-system-update_dependent">

```
[root@psip30 ~]# cd /etc/yum.repos.d/
[root@psip30 yum.repos.d]# vi dell-system-update_dependent.repo
```

```
enabled=0
```

3.2.2 Use OSMA

There are 2 ways to use OSMA – one is command base and the other is Web base. The command is **omreport** which located in /opt/dell/srvadmin/bin. For example, to obtain the disk drive status, try below.

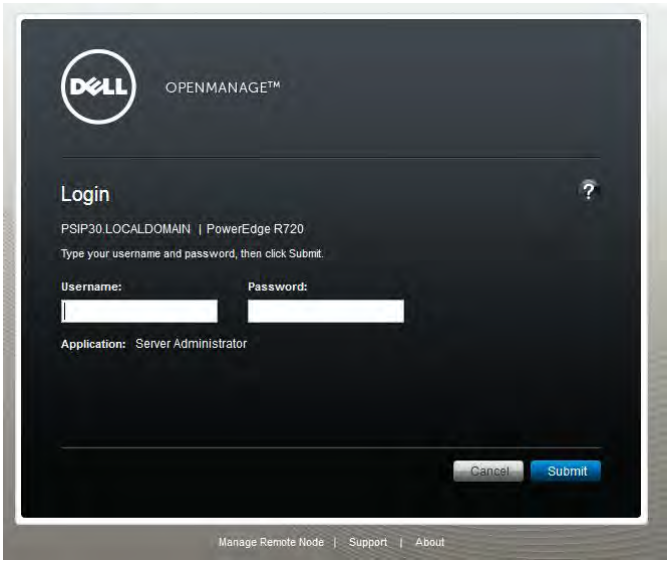
```
[root@psip30 ~]# /opt/dell/srvadmin/bin/omreport storage pdisk controller=0
List of Physical Disks on Controller PERC H710 Mini (Embedded)

Controller PERC H710 Mini (Embedded)
ID                          : 0:1:0
Status                       : Ok
Name                        : Physical Disk 0:1:0
State                       : Online
Power Status                 : Spun Up
Bus Protocol                 : SATA
Media                       : HDD
 :
```

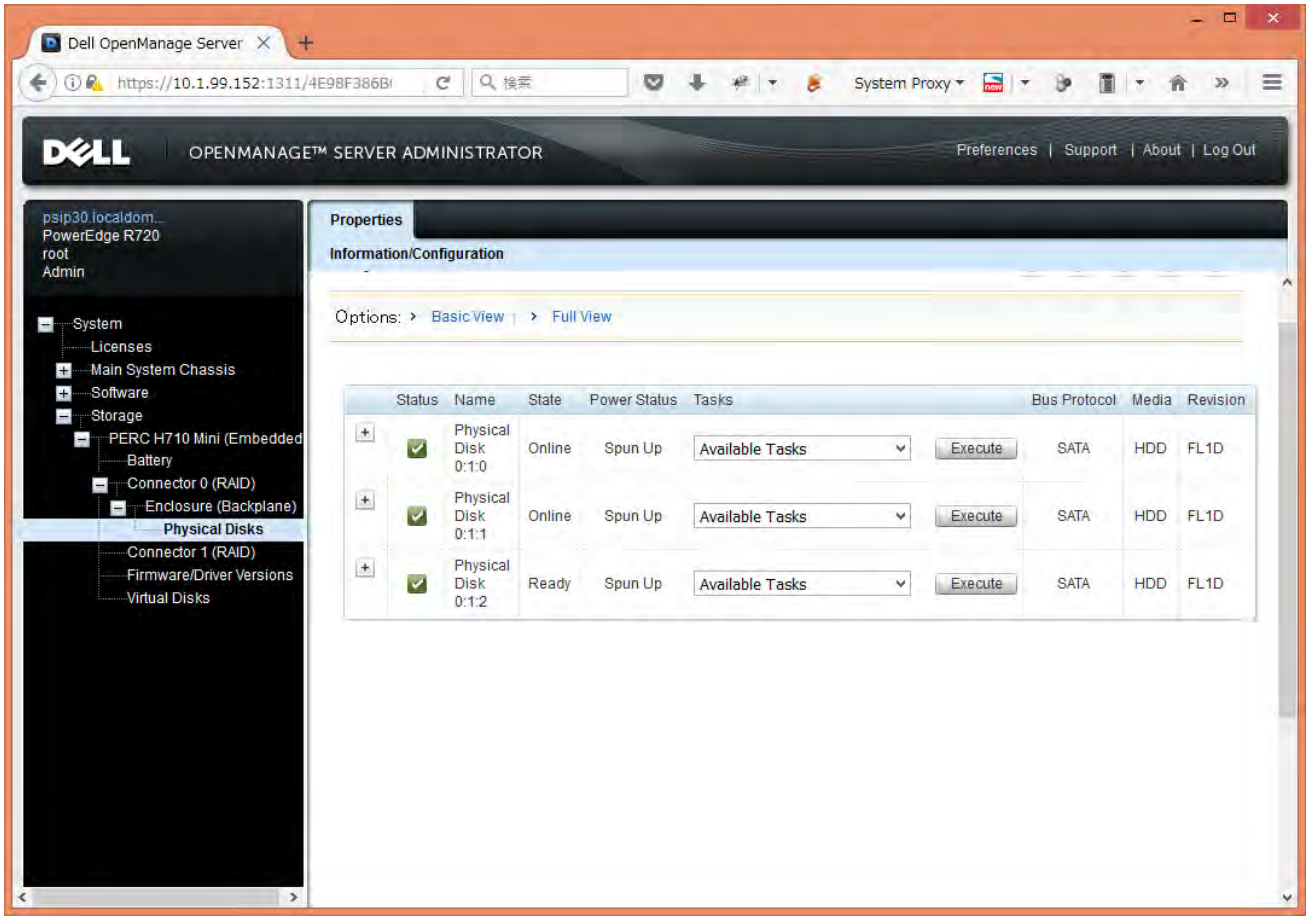
The other way – Web base can be used from next URL.

https://10.1.99.152:1131/

The user name is root and the password is root's password.



The main concern is the health of disks. It can be seen by drilling down to Storage→PERC H710 Mini→Connector 0 (RAID)→Physical Disks. Next example shows all disks are OK.



2 disks (0:1:0 and 0:1:1) organize RAID1 (Mirror) and another disk (0:1:2) is ready for hot standby.

Government of Malawi

Public Sector Investment Programme (PSIP)

PSIP DATABASE MAINTENANCE MANUAL

The Ministry of Finance, Economic Planning and Development
Department of Economic Planning and Development
P. O. Box 30136
Lilongwe 3, Malawi

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Document History for PSIP Database (Ver.4)

Date	Revision	By	Remarks
28 Aug, 2017	1.00	Y. Ishikawa	Initial version
29 Aug, 2017	1.01	Y. Ishikawa	History is added. Fix typos and following contents are added - Setting NEW(Blank) Template - Reporting - Additional utilities - Repairing RAID disks - ssh key pair

1 Establishing PSIP Database environment on the server

After installing and setting up the server by referring to Server Setup Manual, further installation and configuration are needed to make the server usable for PSIP Database. This chapter explains how to make the PSIP Database dependent environment including network.

1.1 Network environment

"Appendix A Network Diagram" shows the whole network diagram of PSIP Database environment which includes PSIP office network. PSIP Database servers are located in GWAN server room in Accountant Generals office building. There are 2 Physical Servers – one for live and the other for spare. The spare server is usually not working. In a Physical Server, there are 2 virtual servers configured as "PSIP Production Server" and "PSIP Test Server". Therefore there are 3 servers (physical, PSIP production and PSIP test) accessible over the network. In the network diagram the servers are describe at the right bottom corner – a cyan colored box.

The IP addresses and firewall configurations of the 3 servers are summarized in the next table.

Table 1 Network configuration

No.	Item	Physical Server	PSIP Production Server	PSIP Test Server
1	Network1 (br0) IP Address Subnet mask Gateway DNS	Interface=br0 192.168.1.30 255.255.255.0 192.168.1.1 192.168.1.1	Interface=eth0 192.168.1.31 255.255.255.0 192.168.1.1 192.168.1.1	Interface=eth0 192.168.1.34 255.255.255.0 192.168.1.1 192.168.1.1
2	Network2 (br1) IP Address Subnet mask Gateway DNS1 DNS2	Interface=br1 10.1.99.152 255.255.255.0 10.1.99.251 10.1.99.23 10.1.99.24	Interface=eth1 10.1.99.151 255.255.255.0 10.1.99.251 10.1.99.23 10.1.99.24	Interface=eth1 10.1.99.153 255.255.255.0 10.1.99.251 10.1.99.23 10.1.99.24
3	Router	No router	GWAN router	GWAN router
4	Firewall in-ports	ssh(22), http(80), https(443), OSMA(1131)[1] LocalView(8080)[2]	ssh(22), http(80), https(443), samba (137, 138, 139, 445)	ssh(22), http(80), https(443)

Network1 is connected to an Ethernet port of the physical server but Network2 is not connected to any physical ports thus it's only usable for the communication between 3 servers. It is recommended

[1] OSMA: OpenManage Server Administrator – A name of server monitoring & control tool provided by DELL.

[2] LocalView: Names of the UPS monitoring software provided by the UPS maker SOCOMEC.

to use Network1 for data exchange between servers and to use Network1 for accessing to the server from GWAN or Internet. In every server, the interface that has an IP address 10.1.99.XX is configured as “Default route”.

All these configurations are done as network configuration of Linux. The actual configuration methods are described in Server Setup Manual.

1.2 Server environment

Next diagram shows the server structure and resource allocation.

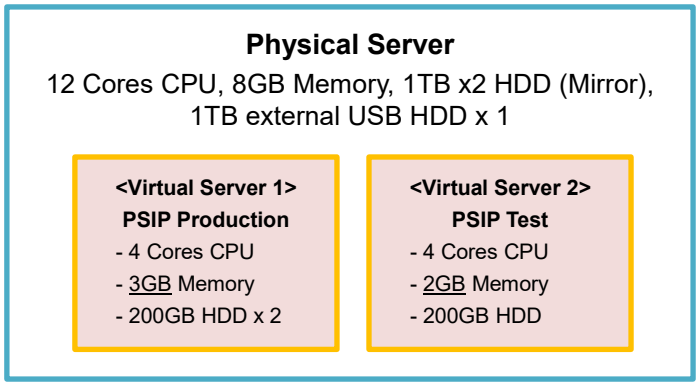


Fig. 1 Server structure and resource allocation

The next table summarizes the role of each server.

Table 2 Server's roles

No.	Server	Role	Description
1	Physical Server	Virtual server environment (KVM) host	Manages guest virtual machines (PSIP Production server and PSIP test server)
		Backup	Take backup of disk space, database, http logs and VM (Virtual Machine) images of each server automatically
		Monitoring	Server health monitoring and UPS status monitoring
2	PSIP Production Server	PSIP Database (KVM guest)	Database system application and database
		Windows shared folder server (samba)	Provide Windows shared folders to the PSIP office
3	PSIP Test Server	PSIP Database for test (KVM guest)	Database system application and database
		Git server	Provide the source code revision control scheme using “git”. Note that he PSIP Production server is a git client of this server.

Note that all developers’ PCs source code and revisions have to be synchronized with the remote git

on PSIP Test server.

1.2.1 Configuring Physical Server

The OS dependent configurations are described in Server Setup Manual. This section describes the configurations for backup scheme.

(1) Attaching the external USB HDD

A 1TB external USB HDD is connected to the Physical Server to keep the backup files of all 3 servers. The external USB HDD has to be formatted as NTFS filesystem which is the standard format of today's Windows. It can be done using Windows PC. The USB external HDD is mounted to the mount point "/var/mnt/ext-hdd" on the Physical Server. The mount point must be manually created before mounting the disk. And the mounting specification must be written in the file "/etc/fstab". The procedures are as follows.

<Login as root>

```
[root@psip30 ~]# cd /mnt
[root@psip30 mnt]# mkdir ext-hdd
```

<Confirm /etc/fstab>

```
[root@psip30 mnt]# cat /etc/fstab
 :
/dev/sdb1               /mnt/ext-hdd    ntfs noauto 0 0
```

If the line does not exist in fstab file, just add it as above.

After above procedures completed, connect the external USB HDD to the USB port of the Physical Server and do next.

```
[root@psip30 ~]# mount /mnt/ext-hdd
[root@psip30 ~]#
```

If some errors appear, check the boot log as below.

```
[root@psip30 ~]# dmesg |  less
Initializing cgroup subsys cpuset
Initializing cgroup subsys cpu
  :
:/usb-storage                    ← Type /usb-storage
```

<You will see next>

```
dracut: Switching root
usb-storage: device scan complete
```

```
scsi 7:0:0:0: Direct-Access     BUFFALO  HD-PNTU3        0001 PQ: 0 ANSI: 6
sd 7:0:0:0: [sdb] 1953463728 512-byte logical blocks: (1.00 TB/931 GiB)
sd 7:0:0:0: [sdb] Write Protect is off
sd 7:0:0:0: [sdb] Mode Sense: 1f 00 00 08
sd 7:0:0:0: [sdb] Assuming drive cache: write through
sd 7:0:0:0: [sdb] Assuming drive cache: write through
 sdb: sdb1
  :
pps_core: Software ver. 5.3.6 - Copyright 2005-2007 Rodolfo Giometti <giometti@linux.it>
:q   ← Type q
```

In above example, the device name is “sdb1”. So the device file path /dev/sdb1 has to be written in /etc/fstab file.
After mounting the external USB HDD to the mount point /mnt/ext-hdd, confirm it.

```
[root@psip30 ~]# df
Filesystem                                    1K-blocks     Used Available Use% Mounted on
/dev/mapper/vg_psip10-LogVol01                952383436 335950340 568054832  38% /
tmpfs                                         4004432       88   4004344   1% /dev/shm
/dev/sda1                                      495844    40193    430051   9% /boot
/usr/local/share/iso/CentOS-6.5-x86_64-bin-DVD1.iso     4363088     4363088     0    100%
/mnt/centos-iso
/dev/sdb1                                             976726876 795959144 180767732  82%
/mnt/ext-hdd
```

The last line start from /dev/sdb1 is the evidence for success recognition of external USB HDD. After the confirmation unmount it because backup program will do it automatically while performing backup.

```
[root@psip30 ~]# umount /mnt/ext-hdd
```

(2) Copy the necessary files for implementing backup scheme

<Copy tools/psip30 from other server or backups to the home directory of psip user>
<Assume that tools/psip30 already exists in PSIP Test Server>

<Be psip user>

```
[root@psip30 ~]# su - psip
[psip@psip30 ~]$ scp -r 192.168.1.34:tools/psip30 .
psip@192.168.1.34's password:  ← Enter password of psip in PSIP Test Server
[psip@psip30 ~]$ exit        ← Return to root
[root@psip30 ~]# cat tools/psip30/crontab_root
```

```
05 1 * * * /home/psip/tools/psip30/daily_backup.sh >> /var/log/daily_backup.log 2>&1
[root@psip30 ~]# crontab -e          ← Configure crontab
```

<Create a line which displayed when doing "cat …" above>

<After completing the configuration of crontab, confirm it by next>

```
[root@psip30 ~]# crontab -l
05 1 * * * /home/psip/tools/psip30/daily_backup.sh >> /var/log/daily_backup.log 2>&1
[root@psip30 ~]#
```

The meaning of above crontab configuration "Run daily_backup.sh script at 1:05 AM every day and record the result in the log file daily_backup.log".

1.2.2 Configuring PSIP Test Server

The OS dependent configurations are described in Server Setup Manual. This section describes the configurations for letting this server work as a PSIP Database (for test) and Git server.

(1) Configure PSIP Database application

<Assume that source files exist as a source archive in tar.gz (tgz) format which contains public_html, tools smarty and install directories>

<Assume that the source archive filename is psip_database_v4_src-20170820.tgz>

<Transfer the file into ~/tmp directory before doing follows>

<Login as psip user>

```
[psip@psip34 ~]$ tar xvzf tmp/ psip_database_v4_src-20170820.tgz

[psip@psip34 ~]$ tar xvzf install/install_smarty.tgz
Smarty
smarty-3.1.27/
smarty-3.1.27/.gitattributes
 :
[psip@psip34 ~]$ tar xvzf install/install_base_templates2.tgz
base_templates2/
base_templates2/20161216_1718_ONGOING_V41_BLANK.xlsm
base_templates2/20161216_1718_NEW_V41_BLANK.xlsm
 :
```

<If the template files and forms in base_templates2 are old, copy the latest files and re-link the file. Refer to the "Annual PSIP operation" chapter for the command to make the link>

```
[psip@psip34 ~]$ cp install/dot_emacs .emacs
[psip@psip34 ~]$ cd public_html/
```

```
[psip@psip34 public_html]$ ./init_env_smarty.sh
[psip@psip34 public_html]$ ./init_env_symfony.sh
```

The fundamental configuration is completed but following directories have to be confirmed because these directories may contain files during the usage of PSIP Database.

public_html/psip/2018-19

This directory contains document files and results of template generation. You may need to copy the files from the backups. The number 2018-19 corresponds to the fiscal year therefore the name of directory changes according to the current fiscal year setting.

public_html/filesets2

This directory contains photo files of site validation log and/or attachments of projects.

(2) Configure Git server

Because the test server is used as Git server, git environment must be established by following steps.

```
[psip@psip34 public_html]$ cd
[psip@psip34 ~]$ cd install/
[psip@psip34 install]$ cp dot_gitconfig ~/.gitconfig
[psip@psip34 install]$ cp 00_git_server_files/dot_gitignore-public_html
~/public_html/.gitignore
[psip@psip34 install]$ cp 00_git_server_files/dot_gitignore-tools ~/tools/.gitignore
[psip@psip34 install]$ cp 00_git_server_files/dot_gitignore-smarty ~/smarty/.gitignore
[psip@psip34 install]$ cd
[psip@psip34 ~]$ cd public_html/
[psip@psip34 public_html]$ git init
Initialized empty Git repository in /home/psip/public_html/.git/
[psip@psip34 public_html]$ git add .
```

<Use your name instead of Ishikawa below>

```
[psip@psip34 public_html]$ git commit -am "Initial commit by Ishikawa"
```

<Create develop branch and delete master branch>

```
[psip@psip34 public_html]$ git branch develop
[psip@psip34 public_html]$ git branch
  develop
* master
[psip@psip34 public_html]$ cd
[psip@psip34 ~]$ cd tools/
[psip@psip34 tools]$ git init
```

```
Initialized empty Git repository in /home/psip/tools/.git/
[psip@psip34 tools]$ git add .
[psip@psip34 tools]$ git commit -am "Initial commit by Ishikawa"
[psip@psip34 tools]$ git branch develop
[psip@psip34 tools]$ cd
[psip@psip34 ~]$ cd smarty
[psip@psip34 smarty]$ git init
Initialized empty Git repository in /home/psip/smarty/.git/
[psip@psip34 smarty]$ git add .
[psip@psip34 smarty]$ git commit -am "Initial commit by Ishikawa"
[psip@psip34 smarty]$ git branch develop
[psip@psip34 smarty]$ cd
```

<Create remote git for public_html>

```
[psip@psip34 ~]$ mkdir public_html.git
[psip@psip34 ~]$ git clone -b develop --bare public_html public_html.git
Cloning into bare repository 'public_html.git'...
done.
[psip@psip34 ~]$ cp install/00_git_server_files/hooks_public_html-post-receive
public_html.git/hooks/post-receive
[psip@psip34 ~]$ chmod +x public_html.git/hooks/post-receive
```

<Create remote git for tools>

```
[psip@psip34 ~]$ mkdir tools.git
[psip@psip34 ~]$ git clone -b develop --bare tools tools.git
Cloning into bare repository 'tools.git'...
done.
[psip@psip34 ~]$ cp install/00_git_server_files/hooks_tools-post-receive
tools.git/hooks/post-receive
[psip@psip34 ~]$ chmod +x tools.git/hooks/post-receive
```

<Create remote git for smarty>

```
[psip@psip34 ~]$ mkdir smarty.git
[psip@psip34 ~]$ git clone -b develop --bare smarty smarty.git
Cloning into bare repository 'smarty.git'...
done.
[psip@psip34 ~]$ cp install/00_git_server_files/hooks_smarty-post-receive
smarty.git/hooks/post-receive
[psip@psip34 ~]$ chmod +x smarty.git/hooks/post-receive
```

<Delete master branches>

```
[psip@psip34 ~]$ cd public_html.git
```

```
[psip@psip34 public_html.git]$ git branch -d master
Deleted branch master (was 0e623cc).
[psip@psip34 public_html.git]$ cd
[psip@psip34 ~]$ cd tools.git
[psip@psip34 tools.git]$ git branch -d master
Deleted branch master (was 0e623cc).
[psip@psip34 tools.git]$ cd
[psip@psip34 ~]$ cd smarty.git
[psip@psip34 smarty.git]$ git branch -d master
Deleted branch master (was 0e623cc).
[psip@psip34 smarty.git]$ cd
[psip@psip34 ~]$ tar xvzf install/home_bin.tgz
[psip@psip34 ~]$ cd public_html
[psip@psip34 public_html]$ git checkout develop
[psip@psip34 public_html]$ git branch -d master
[psip@psip34 public_html]$ cd ../tools
[psip@psip34 tools]$ git checkout develop
[psip@psip34 tools]$ git branch -d master
[psip@psip34 tools]$ cd ../smarty
[psip@psip34 smarty]$ git checkout develop
[psip@psip34 smarty]$ git branch -d master
```

1.2.3 Configuring PSIP Production Server

The OS dependent configurations are described in Server Setup Manual. This section describes the configurations for letting this server work as a PSIP Database and Windows shared folder server.

(1) Configure PSIP Database application

<Assume that source files exist in PSIP Test Server as git managed way>

<Login as psip user and clone the source trees from the git remote server>

<At first, copy “install” directory>

```
[psip@psip33 ~]$ scp -r psip@192.168.1.34:install .
psip@192.168.1.34's password:
install_base_templates2.tgz    100% 2137KB   2.1MB/s   00:01
  :
[psip@psip33 ~]$
[psip@psip33 ~]$ cp install/dot_gitconfig .gitconfig
[psip@psip33 ~]$ git clone -b develop psip@192.168.1.34:public_html.git
```

```
Cloning into 'public_html'...
psip@192.168.1.34's password:
remote: Counting objects: 11732, done.
  :
```

```
[psip@psip33 ~]$ git clone -b develop psip@192.168.1.34:tools.git
Cloning into 'tools'...
psip@192.168.1.34's password:
remote: Counting objects: 128, done.
remote: Compressing objects: 100% (125/125), done.
  :
[psip@psip33 ~]$ git clone -b develop psip@192.168.1.34:smarty.git
Cloning into 'smarty'...
psip@192.168.1.34's password:
remote: Counting objects: 36, done.
remote: Compressing objects: 100% (34/34), done.
  :
[psip@psip33 ~]$ tar xvzf install/install_smarty.tgz
Smarty
smarty-3.1.27/
smarty-3.1.27/.gitattributes
 :
[psip@psip33 ~]$ tar xvzf install/install_base_templates2.tgz
base_templates2/
base_templates2/20161216_1718_ONGOING_V41_BLANK.xlsm
base_templates2/20161216_1718_NEW_V41_BLANK.xlsm
 :
```

<If the template files and forms in base_templates2 are old, copy the latest files and re-link the file. Refer to the “Annual PSIP operation” chapter for the command to make the link>

```
[psip@psip33 ~]$ cp install/dot_emacs .emacs
[psip@psip33 ~]$ cd public_html/
[psip@psip33 public_html]$ ./init_env_smarty.sh
[psip@psip33 public_html]$ ./init_env_symfony.sh
```

The fundamental configuration is completed but following directories have to be confirmed because these directories may contain files during the usage of PSIP Database.

public_html/psip/2018-19

This directory contains document files and results of template generation. You may need to copy the files from the backups. The number 2018-19 corresponds to the fiscal year therefore the name of directory changes according to the current fiscal year setting.

public_html/filesets2

This directory contains photo files of site validation log and/or attachments of projects.

(2) Configure "PSIP Database automatic loader" service

A service named "psip_auto_load" must be installed to enable the automatic template loading. It is done by following steps.

<Be root user>

```
[psip@psip33 ~]$ su -
Password:
[root@psip33 ~]# cp /home/psip/tools/psip33/psip_autoupload.service /etc/systemd/system
[root@psip33 ~]# systemctl enable psip_autoupload
ln -s '/etc/systemd/system/psip_autoupload.service'
'/etc/systemd/system/multi-user.target.wants/psip_autoupload.service'
[root@psip33 ~]# systemctl start psip_autoupload
```

<Confirm if it runs>

```
[root@psip33 ~]# systemctl status psip_autoupload
psip_autoupload.service - PSIP automatic template loader
   Loaded: loaded (/etc/systemd/system/psip_autoupload.service; enabled)
   Active: active (running) since Mon 2017-08-21 00:09:55 SAST; 9s ago
 Main PID: 50465 (psip_autoupload)
   CGroup: /system.slice/psip_autoupload.service
           tq50465 /bin/sh /home/psip/tools/psip33/psip_autoupload.sh
           mq50479 sleep 5

Aug 21 00:09:55 psip104.localdomain systemd[1]: Starting PSIP automatic template loa.....
Aug 21 00:09:55 psip104.localdomain systemd[1]: Started PSIP automatic template loader.
Hint: Some lines were ellipsized, use -l to show in full.
[root@psip33 ~]#
```

Additionally /etc/sudoers must be edited to make automatic upload and automatic generation work.

```
[root@psip33 ~]# visudo
```

<Add highlighted parts>

```
  :
#
Defaults    requiretty
Defaults:apache !requiretty
#
## Allows members of the users group to shutdown this system
# %users  localhost=/sbin/shutdown -h now

## Added for Web-based submission
apache ALL=(ALL) NOPASSWD: /home/psip/tools/psip33/copy_autoupload_file.sh
apache ALL=(ALL) NOPASSWD: /home/psip/tools/psip33/psip_job_start.sh

## Read drop-in files from /etc/sudoers.d (the # here does not mean a comment)
#includedir /etc/sudoers.d
```

The meaning of above sudoers configuration is “Allow apache user execution of copy_autoupload_file.sh and psip_job_start.sh scripts as a super user’s privilege and the executions do not require tty (terminal I/O)”.

(3) Configure Windows shared folder server (samba)

The PSIP Production Server is also works as Windows shared folder server. From PCs connected to the server, the shared folders appear as seen below.

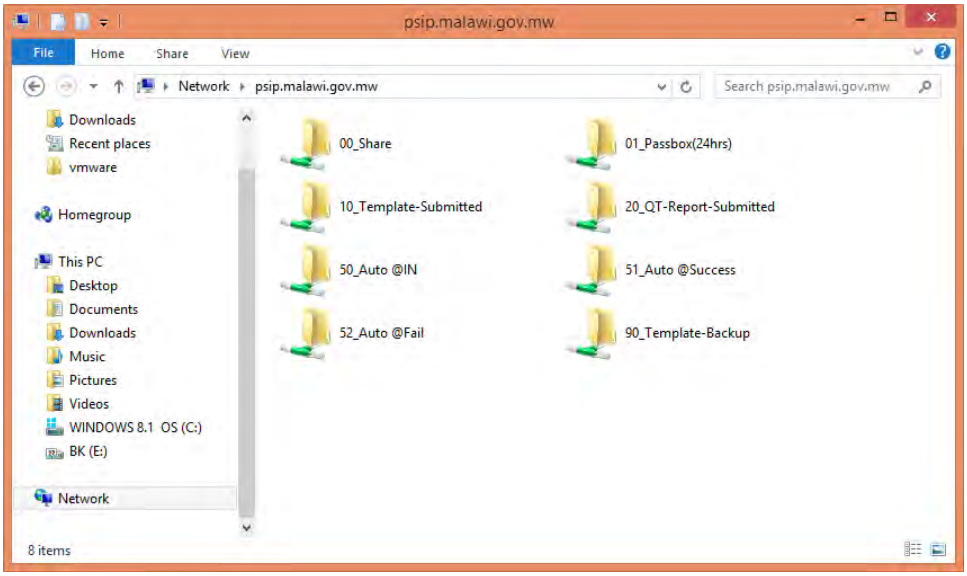


Figure 1 Shared folders

To configure this, follow next steps.

```
[root@psip33 ~]# cd /var
[root@psip33 var]# mkdir samba
```

<You can skip if following steps directories already exist>

```
[root@psip33 var]# cd samba
[root@psip33 samba]# mkdir autoupload
[root@psip33 samba]# mkdir autoupload_fail
[root@psip33 samba]# mkdir autoupload_success
[root@psip33 samba]# mkdir passbox
[root@psip33 samba]# mkdir qt_submitted
[root@psip33 samba]# mkdir share
[root@psip33 samba]# mkdir temp_submitted
[root@psip33 samba]# chmod 777 *
```

<Configure samba>

```
[root@psip33 ~]# cd /etc/samba
[root@psip33 samba]# mv -f smb.conf  smb.conf-original
[root@psip33 samba]# cp /home/psip/tools/psip33/smb.conf_sample smb.conf
[root@psip33 samba]# systemctl enable smb
[root@psip33 samba]# systemctl start smb
```

<The contents of smb.conf are as below>

```
[global]
workgroup = PSIP_OFFICE
server string = Samba Server
log file = /var/log/samba/log.%m
max log size = 50
unix charset = UTF-8
dos charset = CP932
hosts allow = 127. 192.168.1. 10.1.103.19
#security = share
security = user
map to guest = Bad User
guest ok = yes
[00_Share]
path = /var/samba/share
writable = yes
guest ok = yes
guest only = yes
create mode = 0777
directory mode = 0777
share modes = yes
[01_Passbox(24hrs)]
path = /var/samba/passbox
writable = yes
guest ok = yes
guest only = yes
```

```
create mode = 0777
directory mode = 0777
share modes = yes
 [10_Template-Submitted]
path = /var/samba/temp_submitted
writable = yes
guest ok = yes
guest only = yes
create mode = 0777
directory mode = 0777
share modes = yes
# [11_Template-Checked]
# path = /var/samba/temp_checked
# writable = yes
# guest ok = yes
# guest only = yes
# create mode = 0777
# directory mode = 0777
# share modes = yes
[20_QT-Report-Submitted]
path = /var/samba/qt_submitted
writable = yes
guest ok = yes
guest only = yes
create mode = 0777
directory mode = 0777
share modes = yes
[50_Auto @IN]
path = /var/samba/autoupload
writable = yes
guest ok = yes
guest only = yes
create mode = 0777
directory mode = 0777
share modes = yes
[51_Auto @Success]
path = /var/samba/autoupload_success
writable = yes
guest ok = yes
guest only = yes
create mode = 0777
directory mode = 0777
[52_Auto @Fail]
path = /var/samba/autoupload_fail
writable = yes
guest ok = yes
guest only = yes
create mode = 0777
directory mode = 0777
share modes = yes
[90_Template-Backup]
path = /var/samba/temp_backup
writable = no
```

```
guest ok = yes
guest only = yes
create mode = 0755
directory mode = 0755
share modes = yes
```

The meaning of highlighted part is “Allow access from local host (127.), server internal network (192.168.1.) and PSIP office (10.1.103.19=Router’s WAN port address). This guarantees preventing folder sharing from other MDAs.

<Confirm from Windows PC>
Put “\\10.1.99.151” into the address bar of Windows explorer so that you can see the folders like Figure 1.

<Configure automatic purge of Passbox folder>
The contents of Passbox folder (seen as “01_Passbox(24hrs)”) have to be automatically deleted after 24 hours. Use crontab for this purpose.

```
[root@psip33 samba]# cat /home/psip/tools/psip33/crontab_root
15 3 * * * /home/psip/tools/psip33/purge_passbox_folder.sh
[root@psip33 samba]# crontab -e
```

<Create a line which displayed when doing “cat …” above>
<After completing the configuration of crontab, confirm it by next>

```
[root@psip33 samba]# crontab -l
15 3 * * * /home/psip/tools/psip33/purge_passbox_folder.sh
[root@psip33 samba]#
```

The meaning of above crontab configuration is “Run purge_passbox.sh script at 3:15 AM every day”.

1.2.4 Configure ssh to enable remote backup

The backups for 3 servers (Physical / PSIP Production / PSIP Test) are taken into the external USB HDD attached to the Physical server. To enable to run backup command in the remote servers (Physical server → PSIP Production server , Physical server → PSIP Test server), ssh must be configured to allow root user in Physical server to execute command in remote servers as root privilege without password. This is done by using public key / private key technology. These keys are generated in the Physical server side and the public key is shared among the servers.

(1) Generate public key and private key in Physical server.

<Login to Physical server (10.1.99.152) as root>

```
[root@psip30 test]# cd .ssh
[root@psip30 .ssh]# ssh-keygen -t dsa
Generating public/private dsa key pair.
Enter file in which to save the key (/var/lib/pgsql/.ssh/id_dsa):  ← press [Enter]
Enter passphrase (empty for no passphrase):  ← press [Enter]
Enter same passphrase again:  ← press [Enter]
Your identification has been saved in /root/.ssh/id_rsa.
Your public key has been saved in /root/.ssh/id_rsa.pub.
The key fingerprint is:
a2:80:ee:08:7a:da:a9:89:3f:3e:3b:fd:f9:e1:f5:49 root@psip30.localdomain
The key's randomart image is:
+--[ DSA 1024]--+
|               |
|               |
|               |
| .             |
|. .   . S      |
|.  . . .       |
|.. ..   . . E  |
|*o=..  o o o . |
|BB*= .o.o   o  |
+---------------+
[root@psip30 .ssh]#
```

(2) Copy the public key from Physical server to PSIP Production server

<Login to PSIP Production server (10.1.99.151) as root>

```
[root@psip33 ~]# cd .ssh
[root@psip33 .ssh]# scp 10.1.99.152:.ssh/id_dsa.pub ./authorized_keys
root@10.1.99.152's password: ):  ← Enter Physical server's root password
id_dsa.pub                                    100%  613     0.6KB/s   00:00
```

<Confirm>

```
[root@psip33 .ssh]# ls -l
total 8
-rw-r--r-- 1 root root 613 Aug 29 11:13 authorized_keys
-rw-r--r-- 1 root root 1307 Aug  9 15:49 known_hosts
```

<Change access mode>

```
[root@psip33 .ssh]# chmod 600 authorized_keys
[root@psip33 .ssh]# ls -l
total 8
-rw------- 1 root root 613 Aug 29 11:13 authorized_keys
-rw-r--r-- 1 root root 1307 Aug  9 15:49 known_hosts
```

(3) Copy the public key from Physical server to PSIP Test server

<Login to PSIP Test server (10.1.99.153) as root>

```
[root@psip34 ~]# cd .ssh
[root@psip34 .ssh]# scp 10.1.99.152:.ssh/id_dsa.pub ./authorized_keys
```

```
root@10.1.99.152's password:    ← Enter Physical server's root password
id_dsa.pub                                    100%  613     0.6KB/s   00:00
```

<Confirm>

```
[root@psip34 .ssh]# ls -l
total 8
-rw-r--r-- 1 root root 613 Aug 29 11:13 authorized_keys
-rw-r--r-- 1 root root 1307 Aug  9 15:49 known_hosts
```

<Change access mode>

```
[root@psip34 .ssh]# chmod 600 authorized_keys
[root@psip34 .ssh]# ls -l
total 8
-rw------- 1 root root 613 Aug 29 11:13 authorized_keys
-rw-r--r-- 1 root root 1307 Aug  9 15:49 known_hosts
```

(4) Confirm the configuration works (do something in the remote without password)

<Login to Physical server>

```
[root@psip30 ~]# ssh 10.1.99.151 ls -l /
stty: standard input: Inappropriate ioctl for device
total 32
lrwxrwxrwx.   1 root root    7 Jul 22  2015 bin -> usr/bin
dr-xr-xr-x.   4 root root 4096 Jul 25  2015 boot
  :
drwxr-xr-x.  22 root root 4096 Aug 15 16:24 var
[root@psip30 ~]# ssh 10.1.99.153 ls -l /
stty: standard input: Inappropriate ioctl for device
total 32
lrwxrwxrwx.   1 root root    7 Jul 22  2015 bin -> usr/bin
dr-xr-xr-x.   4 root root 4096 Jul 25  2015 boot
  :
drwxr-xr-x.  22 root root 4096 Aug 15 17:05 var
[root@psip30 ~]#
```

Note that /etc/ssh/sshd_confing must have following setting.

```
PermitRootLogin without-password
```

By this configuration, root can't login without having the private key.

2 Annual PSIP operation

There are several tasks to be done by PSIP IT staffs. “Appendix B PSIP IT Annual Schedule” shows the annually periodical tasks supposed to be done by PSIP IT staffs and Economists. Note that it only describes the Database related tasks but not all PSIP activities. Following sections describes details and concrete operations of each task in the schedule.

2.1 Gather requirements for improvement

In every PSIP annual cycle, March is the timing to start the discussion for improvement of PSIP Database because PSIP has concluded the project status and budget allocation. Therefore PSIP staffs should have many ideas for the improvement. Another reason of the timing is deadline of the development. The development has to be completed by the end of June (assuming the Circular #1 is issued on the 1st of August). Only 4 months are given for the development.

By holding “PSIP Database improvement meetings“, gather requirements from the users such as PSIP managements, desk officers (Economists) and IT staffs (MDA users and M&E division users may also be included).

PSIP IT staffs make change requests using Change Request Form (see Appendix C Change Request Form) and also start designing new Excel templates. The Change Request Forms are supposed to be submitted to e-Government.

2.2 Make Detail Design

“PSIP Database design meetings” have to be held by gathering PSIP IT staffs and e-Governments developers. The purpose of the meetings is to judge the priority and necessity of the each improvement item written in Change Request Forms. Once the development items are decided, the strategy of implementation for each item should be discussed and concluded in the meeting. Such decision must be summarized into “Appendix D PSIP Database and Excel tools Development Plan & Progress”. It also should contain difficulty, priority, person in charge and due date.

The detail design must be described in Detail Design Form (see Appendix E PSIP Database Detail Design Form (Page Design)). The additional specification of program flow & logic and (if the improvement items involves database’s design change) database design modification specification must be described in the form.

2.3 Coding, debugging and testing

The coding, testing and debugging process are supposed to be done in individual development environment but the base source codes must be cloned from Git server and ready to be synchronized. The detail Git tool environment is described in following chapter.

The progress and technical issued have to be reported and discussed in the Development meeting which supposed to be held at least every 2 weeks.

2.4 Process Extension Request

This should be done by economists but IT staff has to assist the usage. The extension request is a sheet included in Quarterly Progress Report. It is supposed to be submitted before the project ends. Once the extension request sheet is filled and the Quarterly Progress Report is submitted, IT staff load it using Loader utility (Web base, Folder base or Manual) the [EX] indicator appears in the Quarterly Report column of the PSIP Process Management page.

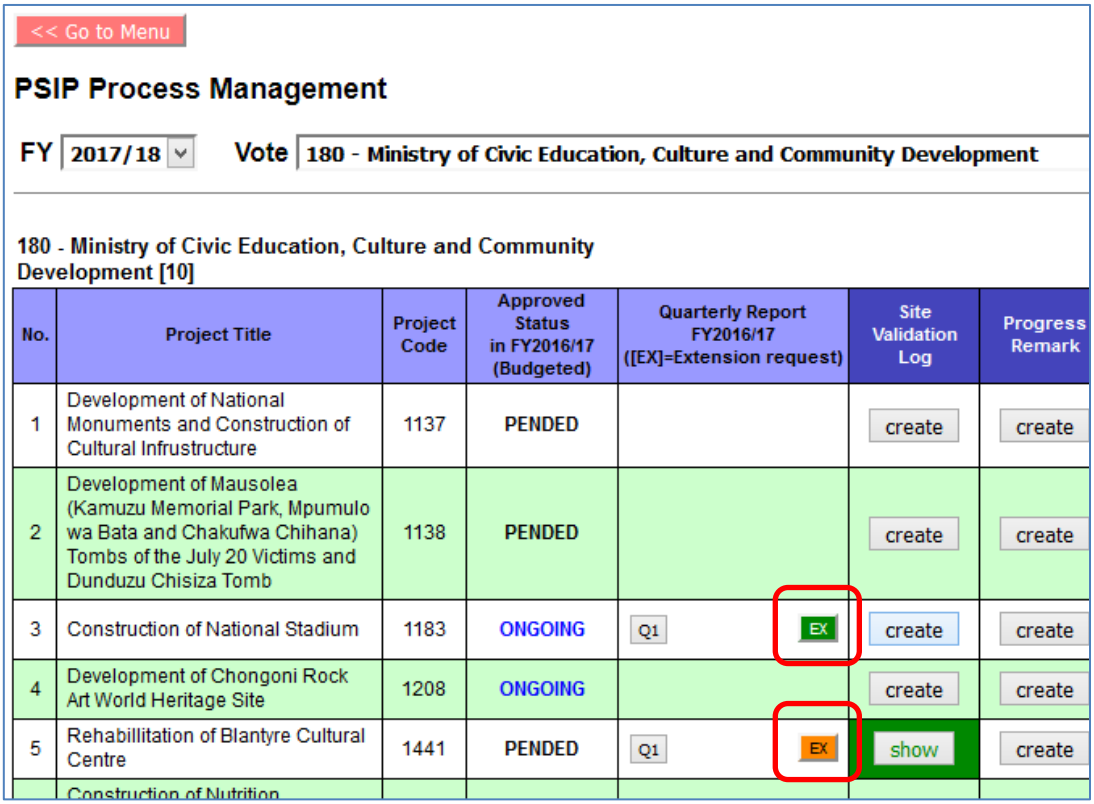


Figure 2 PSIP Process Management page

The green color indicates that it's already processed (Approved or Rejected) but orange color indicates that the extension request is not processed yet. "Approve / Withdraw Extension Request" window pops up once press the [EX] button. The person in charge (should be an economist who is in charge of the vote) will make decision of the period extension and change of TEC (Total Estimated Cost). The decision (Approve or Reject) has to be made carefully and the reason of decision has to be written in "Reason for the Decision" field. Press [Approve] or [Reject] button according to the decision.

In case of [Approve], the changes of project period (Start and End) and TEC values are reflected to the project's profile information in the database immediately. Also the change may affect the project

status. For example, if the project originally had “Ending” status, it should be changed to “Ongoing”. The status change in database is not automatic therefore it should be manually done from “Project Status” menu of the PSIP Database. And its operation should be done by an economist who is in charge of corresponding vote.

After approving or rejecting the extension request, another button [WITHDRAW] is enabled so that user can withdraw the decision. The project period and TEC information are automatically changed by withdrawing but the status change should still be manually done.

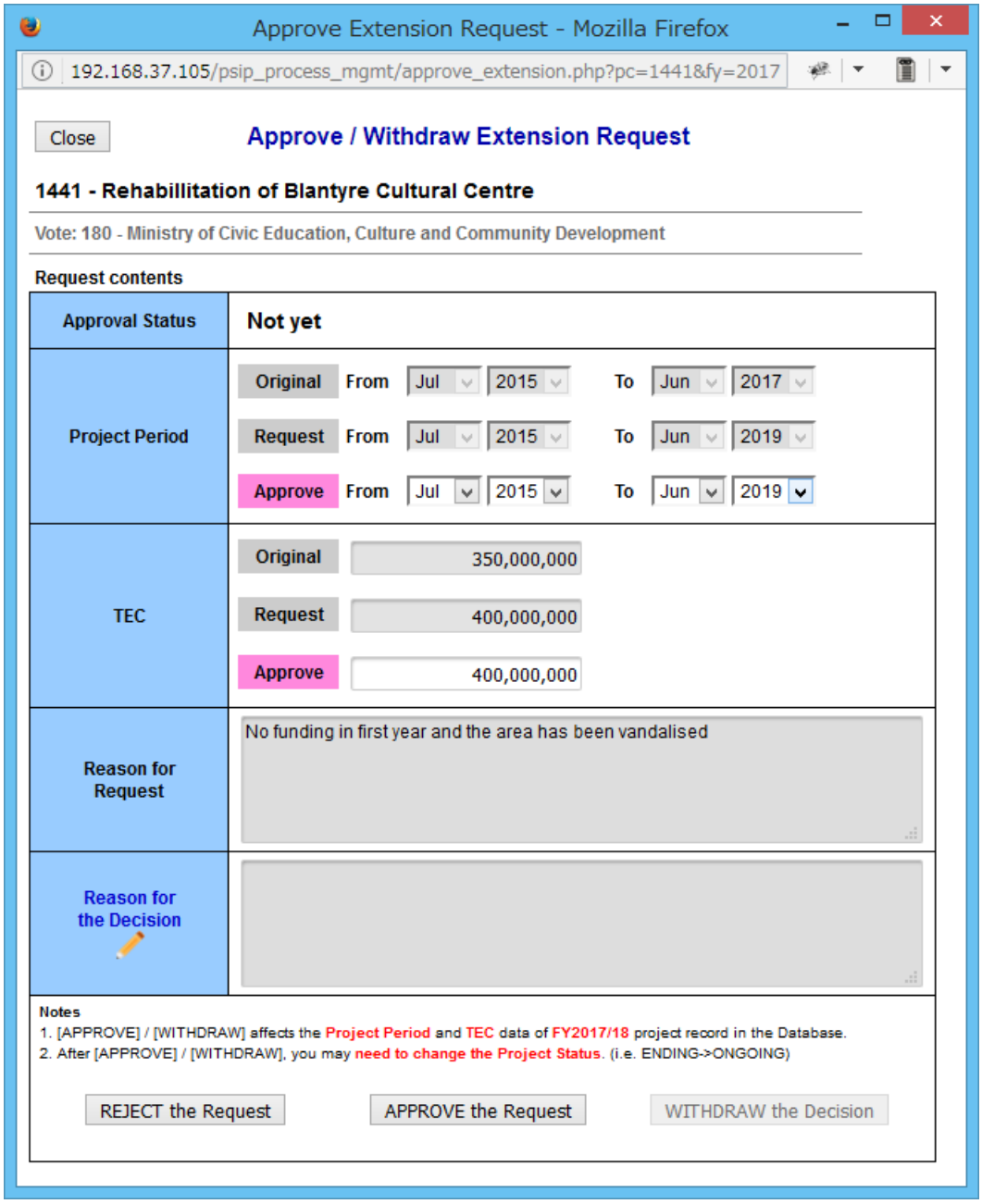


Figure 3 Approve / Withdraw Extension Request window

The “Approval Status” indicates “Approved” in case of the request is fully accepted but in case it’s not

fully accepted (i.e. TEC change is not allowed or End year/month is different from the requested ones), it indicates "Partially Approved".

Note that the fiscal year of the project profile to be affected in the database is the latest one in the database but it must not be older than FY - 1 where FY is the database's current fiscal year value. For example, if the database's current fiscal year is set to FY2018/19, the affected record of project in the database is either FY2017/18 or FY2018/19. It means if the FY2018/19 record does not exist, FY2017/18 record will be affected. If the project does not have both FY2017/18 and FY2018/19 records, the extension request process will be failed. In such case, IT staff should help making record of either FY2017/18 or FY2018/19 by loading corresponding proposal template.

2.5 Collect latest Master Data info., Renew Template's Master Data, Upload Template's Master Data to Database

The meaning of "Master Data" is commonly referred data from both Excel Templates/Forms and PSIP Database. Therefore the data have to be accurate, consistent, latest and error-free, and the data in the Template/Forms and PSIP Database must always match.

The Master Data consists of information described in next table.

Table 3 Master Data

No.	Master data item	Sheet name	Description
1	Vote	tbl_vote	Vote code and vote name
2	MDA	tbl_mda	MDA code and MDA name, Belonging vote code
3	Donor	tbl_donor	Donor code and donor name, abbreviation
4	MGDS priority area	tbl_mgdspriority	MGDS III Priority area code and description
5	MGDS other priority area	tbl_mgdsotherarea	MGDS III Other priority area code and description
6	Sector	tbl_sector	Sector code and sector name
7	Currency	tbl_currency	Currency code, name and exchange rate to MWK
8	PBB program	tbl_budgetcode	PBB (Program Based Budget) code and name
9	PBB sub program	tbl_subbudgetcode	PBB Sub program code and name
10	District	tbl_district	District code and name, region
11	Line item	tbl_line_item	Line item code and name

The latest information should be collected by economists by getting corresponding data from related MDAs /divisions. The collected information is inputted to an Excel template. The corresponding sheet name is written in above table. Note that the code of any master data must be unique within the master data item. And the headers and sheet names must not be modified because they are used for master data recognition while the data is being uploaded to the database.

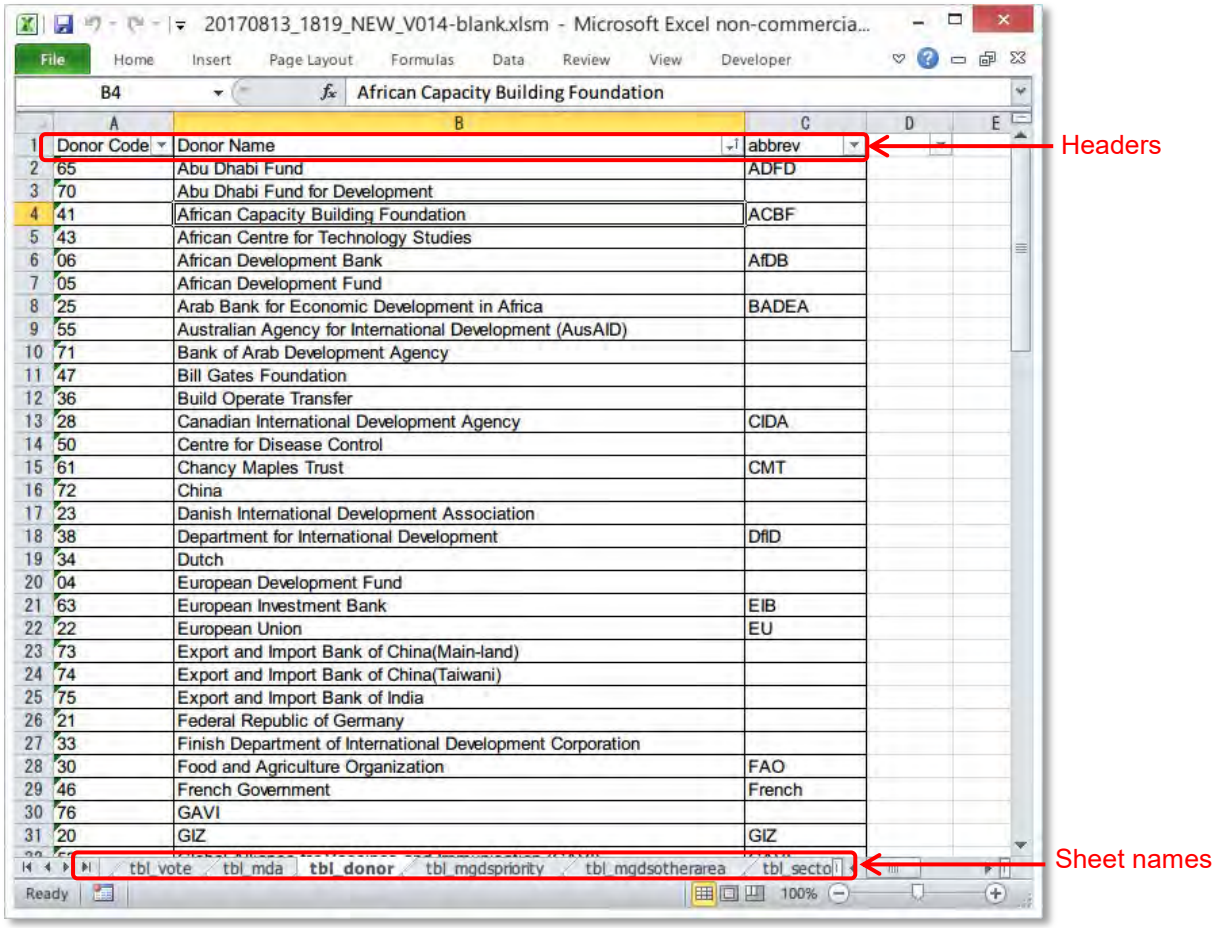


Figure 4 Master Data sheet

2.5.1 Loading Master Data into Database

After inputting / revising Master Data in the Excel Template, the data is loaded to the database to synchronize the contents. The relationship between the sheet names and database's table names are described in next table.

Table 4 Sheet name vs Table name

No.	Sheet name of Excel template	Table name in Database
1	tbl_vote	mst_vote
2	tbl_mda	mst_mda
3	tbl_donor	mst_donor
4	tbl_mgdspriority	mst_mgds_theme
5	tbl_mgdsotherarea	mst_mgds_priority
6	tbl_sector	mst_sector
7	tbl_currency	mst_currency
		mst_exchange_rate
8	tbl_budgetcode	mst_pbb_program
9	tbl_subbudgetcode	mst_pbb_sub_program

No.	Sheet name of Excel template	Table name in Database
10	tbl_district	mst_district
11	tbl_lineitem	mst_line_item

Use a utility cmd_load_master.php to load the Excel template's aster data to the Database. The steps are described below.

(1) Transfer the Excel template to the Database
(2) Login to the Server as psip user
(3) Load the master data contents to the Database using cmd_load_master.php

Syntax: `php cmd_load_master.php` *year template-file*

Where "year" is target year of master data and "template-file" is the path and filename of the Excel template file on the server.

<Example>

```
[psip@psip33 ~]$ cd public_html/tload2/adm/
[psip@psip33 adm]$ php cmd_load_master.php 2018 ~/base_templates2/new.xlsm
Processing tbl_vote ... done.
Processing tbl_mda ... done.
Processing tbl_donor ... done.
Processing tbl_mgdspriority ... done.
Processing tbl_mgdsotherarea ... done.
Processing tbl_sector ... done.
Processing tbl_currency ... done.
Processing tbl_budgetcode ... done.
Processing tbl_subbudgetcode ... done.
Processing tbl_district ... done.
Processing tbl_lineitem ... done.
Start registering to the database ... done.
Duplicating mst_app_category from 2017 to 2018 ... done.
Duplicating mst_app_item from 2017 to 2018 ... done.

Finalizing all processes ...done.

[psip@psip33 adm]$
```

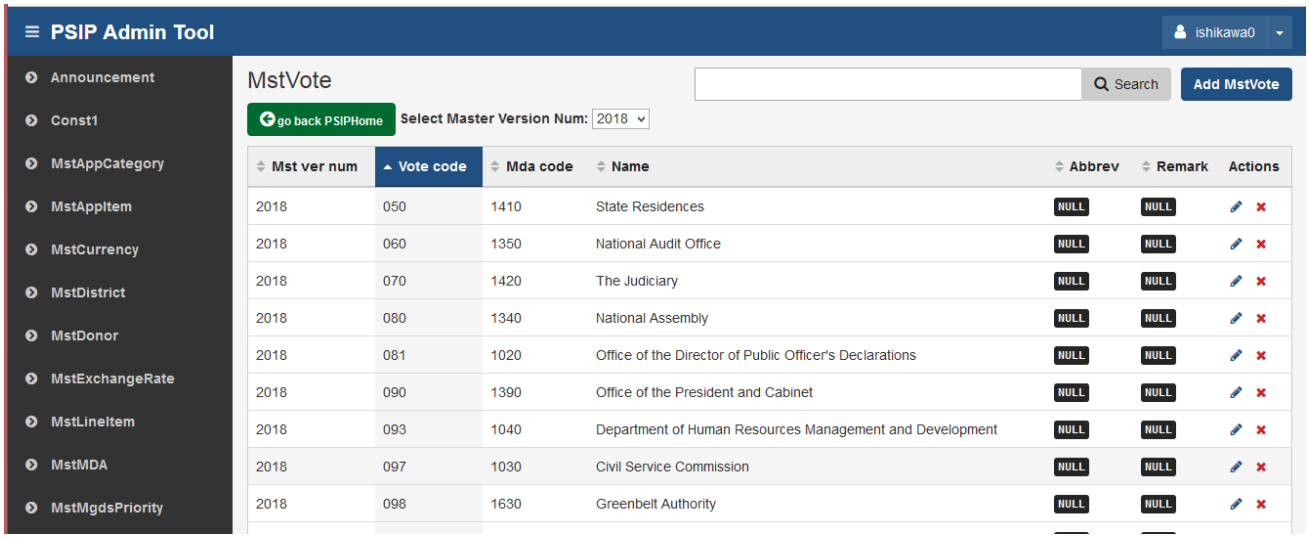
This loading totally replaces the master data of specified year in the database if the data exist. But if error occurs during loading, no data is loaded at all. "mst_app_category" and "mst_app_item" are

master data used for appraisal and the data do not exist in the Excel templates, therefore the data are copied from previous year's records.

2.5.2 Editing master data in the Database

It is still possible to edit the master data in the Database using "PSIP Admin Tool" in PSIP Database. To use the tool, the user must login to PSIP Database as ADMIN privilege.

Navigate "System Setup" → "PSIP Admin Tool" so that let editing page come out.



2.6 Register Vote Rewrite Spec to the Database

Because the merging and splitting of votes happen every year, the vote information of the project records in the database has to be maintained according to the changes. Of course the vote code and names have to be registered to both Excel templates and Database as explained in previous section, there still need to tell database how the existing project's vote information have to be converted to suit new fiscal year's vote structure. It is actually needed when new fiscal year's pre-filled Excel templates are generated because the pre-filled data is retrieved from previous year's records.

There is a database table "vote_rewrite" available for defining the vote conversion rule from previous to new fiscal year. There's no particular tool to maintain "vote_rewrite" table. The IT staff must write SQL script to insert the conversion rules into the table. Below is the specification of vote rewrite table.

Table 5 vote_rewrite table specification

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	22	Surrogate key
2	PROJECT_CODE	VARCHAR(20)		Project Code	'1234'	
3	YEAR	INT	NOT NULL	Year	2016	Year to apply
4	FROM_VOTE_CODE	VARCHAR(10)		From Vote Code	'324'	Code from
5	TO_VOTE_CODE	VARCHAR(10)	NOT NULL	To Vote Code	'320'	Code to
6	TS	TIMESTAMP				
7	*LOG_ID*	INT		Log ID	10223	

There are 2 ways of definition as described below.

(1) Specify PROJECT_CODE, YEAR, FROM_VOTE_CODE and TO_VOTE_CODE
This way is to define project by project vote conversion rule. The definition is only applicable to the specified project.

(2) Specify YEAR, FROM_VOTE_CODE and TO_VOTE_CODE
This way is to define vote by vote conversion rule. All projects belong to FROM_VOTE_CODE are converted to TO_VOTE_CODE.

The vote_rewrite table is only referred in "Template Generator" function (both manual and batch). Therefore the necessary records must be inserted before generating new fiscal year's templates.
The past SQL scripts remains in tools/70_vote_rewrite_scripts directory for reference. Next example is the one used for FY2018/19 proposal generation.

```
/*
 *Delete  all data 2018
 */
delete from vote_rewrite where
  year=2018;

/*
 *Change vote code by vote
 */
insert into vote_rewrite
(year,from_vote_code,to_vote_code,log_id)
values
(2018,'180','170',1)
;

/*
 * Change vote code by project
 */
insert into vote_rewrite
(project_code,year,to_vote_code,log_id)
values
('1183',2018,'370',1),
('1184',2018,'370',1),
('1248',2018,'370',1),
('1917',2018,'275',1),
('1937',2018,'275',1),
('1583',2018,'170',1),
('1871',2018,'170',1),
('1914',2018,'170',1),
('1855',2018,'170',1),
('1913',2018,'170',1),
('1582',2018,'170',1),
('1912',2018,'170',1),
('1948',2018,'170',1),
('1134',2018,'343',1),
('1795',2018,'343',1),
```

```
('1342',2018,'343',1),
('1954',2018,'120',1),
('1955',2018,'120',1),
('1971',2018,'250',1),
('1969',2018,'250',1),
('1968',2018,'240',1),
('1973',2018,'270',1)
;
```

2.7 Collect Approved Budget Info., Collect Donor funded Projects' Info, Revise Budget/Status data in Database

The final approved budged decided in the parliament must be reflected to the PSIP Database. Also the donor funded project's information has to be inputted to the Database as well. Such information should be collected by economists and data input has to be done by IT staff.

To edit the project's approved budget and status, use "Project Status & Budget Transition" page. The page can be reached by PSIP Management → Process Management → Show Budget Transition, press [create] button so that Project Status & Budget Transition screen opens as seen below.

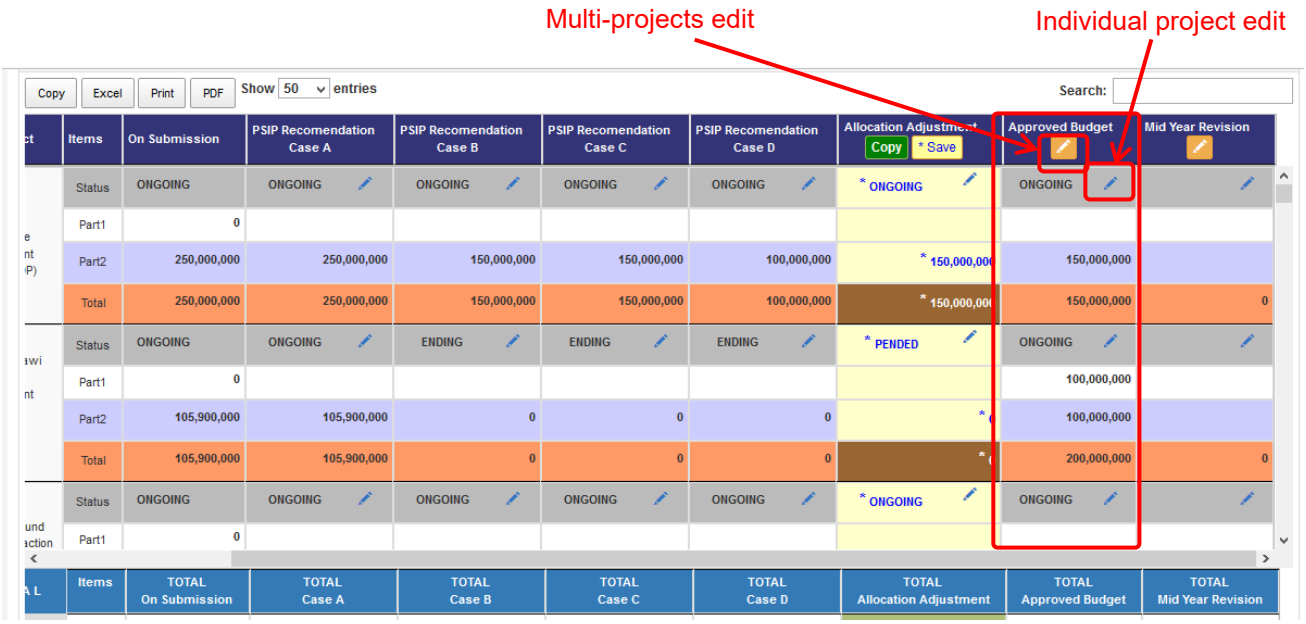


Figure 5 Project Status & Budget Transition screen

The approved budget / status data have to be inputted into "Approved Budget" column of the screen. There are 2 ways to input the data. One is "Individual project edit" which can be edited only 1 project at once and the other is "Multi-projects edit" which can edit multiple projects' data with list form. Refer to "PSIP Database (Ver. 4) User Manual For PSIP Unit" for more details.

2.8 Switch Database's FY

This is to switch the PSIP Database's fiscal year to new fiscal year. It affects several parts of PSIP

Database. At first, the submission progress table will be cleared because it shows the submission progress of new fiscal year's templates. And all other screens begin to show the information of new fiscal year as default. As for the Loader and Generator, it's getting ready to generate / load the new fiscal year's templates.

It's very manual to switch the fiscal year of PSIP Database -- just issue an SQL to the special table "psip_operation". For example, to switch the PSIP Database's fiscal year to 2019, issue next SQL command.

```
update psip_operation set current_year=2019
```

No "where" clause is required because there is only one record existed. Be careful of the timing because this will affect the PSIP Database's behavior very much.

2.9 Set the base templates to the server

Before starting template generation, the latest blank templates must be uploaded and set as base template. A directory "base_templates2" holds the all base template files and necessary symbolic links. Next table summarizes all template files and links. Note that all templates must be BLANK (Not pre-filled).

Table 6 Base templates (in base_templates2 directory)

No.	Template file name as of Aug 2017	Symbolic link	Usage
1	20170813_1819_NEW_V014-blank.xlsm	new.xlsm	New Proposal templates
2	20170813_1819_ONGOING_V014-blank.xlsm	ongoing.xlsm	Ongoing Proposal templates
3	20170813_FormQ_PrjMtrgRep_v006_BLANK.xlsm	qtreport.xlsm	Quarterly Progress Report forms
4	ProFinMgt-InfoTool_v047.xlsm	pfm-it.xlsm	PFM-IT forms
5	appraisal_summary1-20170407.xlsx	appraisal-summary1.xlsx	Excel download of Appraisal Summary
6	appraisal_summary2-20170407.xlsx	appraisal-summary2.xlsx	Excel download of Appraisal Summary
7	process_summary_vote-20170715.xlsx	process-summary.xlsx	Excel download of PSIP Process Summary (by Vote)
8	project_summary1-20170128.xlsx	project-summary.xlsx	Excel download of Project Summary [Form 1]
9	project_list-20170825.xlsx	project-list.xlsx	Excel download of Project List

If an Excel template is updated, the corresponding base template must be replaced by following steps.

(1) Transfer the updated template file to the server. The destination location is ~/base_templates2

(2) Confirm the updated file exists in base_templates2 directory, re-link the symbolic link.
Following example assumes the updated template's name is "20180729_NEW_V020-blank.xlsm".
<Login as psip user>

```
[psip@pusip33 ~]$ cd base_templates2
[psip@psip33 base_templates2]$ ln -sf 20180729_NEW_V020-blank.xlsm new.xlsm
```

<Confirm>

```
[psip@psip33 base_templates2]$ ls -l
  :
lrwxrwxrwx 1 psip psip    33 Jul 30 16:28 new.xlsm -> 20180729_NEW_V020-blank.xlsm
  :
```

<The old "New" template file can be removed>

The syntax of "ln" command is as below.

Syntax: `ln -sf` *template-file-name* *link-file-name*

The option -sf means "Symbolic link" and "Force".

2.10 Generate Templates/Forms & Test

There are 2 ways of template generation. One is manual way and the other is batch way.
The manual way is useful when one or few templates are generated or some other special cases such as repairing templates, generating old year's templates, generating completed / rejected project's template and so on. The template generator in manual way can be reached by "PSIP Management" → "Template Generator". This requires PSIP privilege or ADMIN privilege.

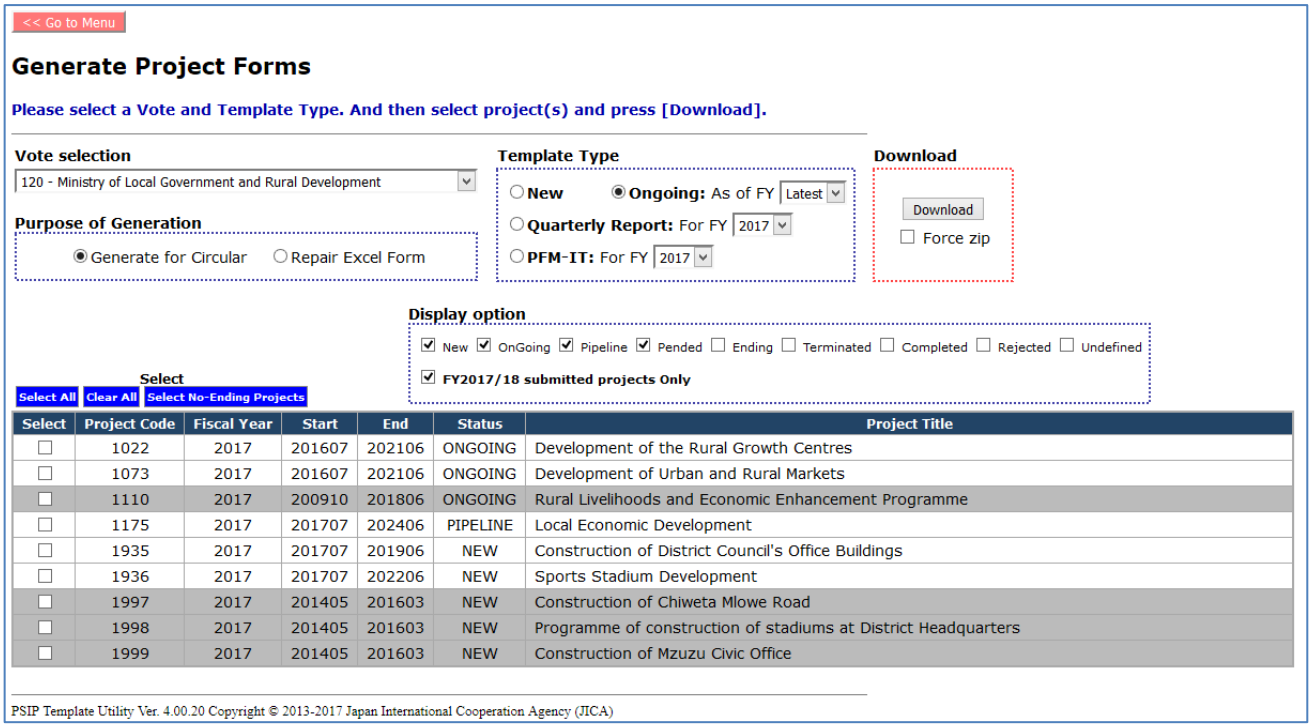


Figure 6 Template Generator (manual way)

The other way "batch way" can be reached by "System Setup" → "Template Generator (Batch)". It requires ADMIN privilege.

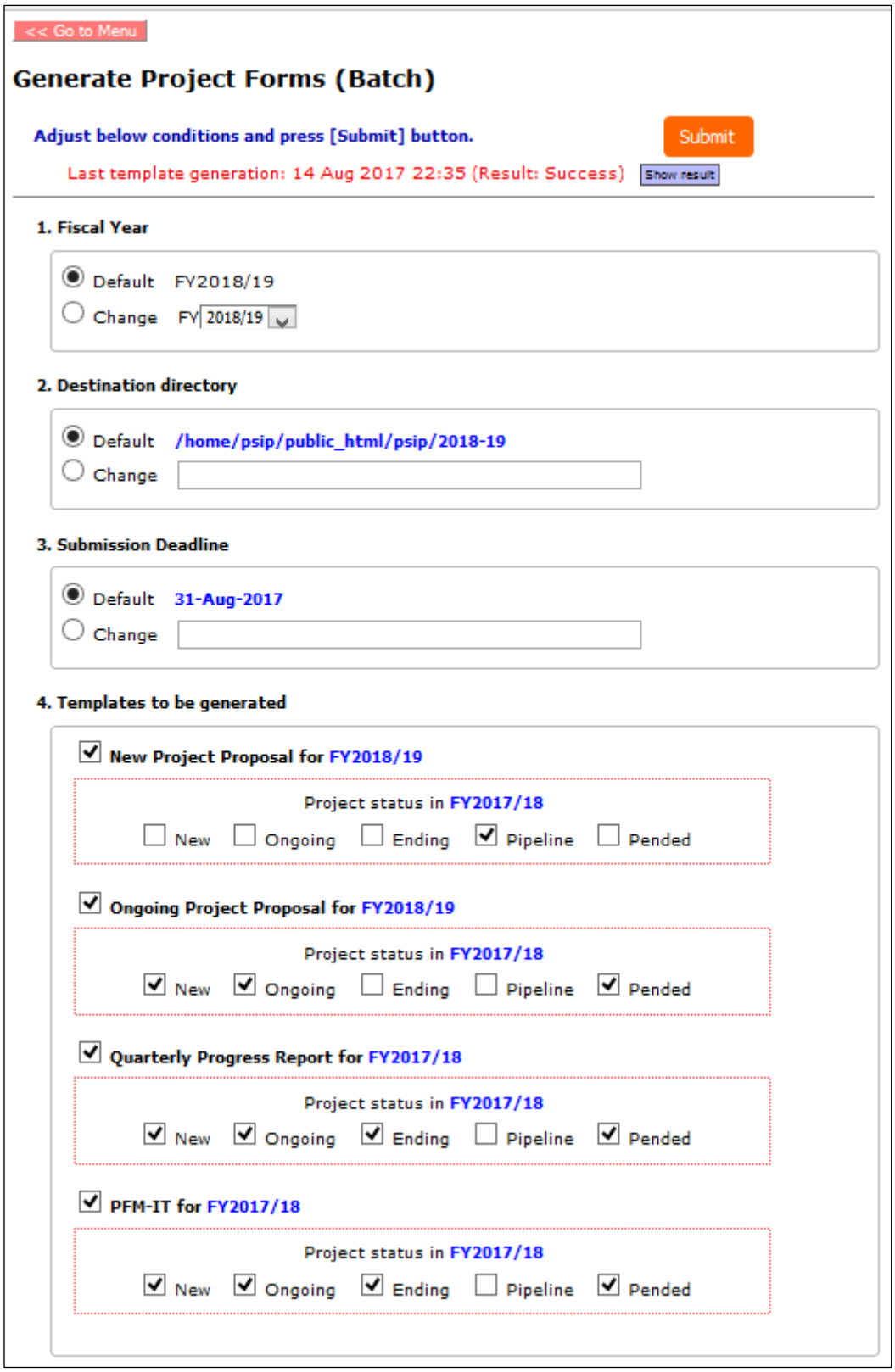


Figure 7 Template Generator (Batch)

This tool generates Excel templates for specified F/Y. Select/set the items (Fiscal year, Destination, Deadline), select template type and status. The tool will generate all the Excel Templates for

specified projects. The default settings are just fit for full set of Templates/Forms generation. In normal case, any change from default settings is not required and the expected action is just to press [Submit] button.

After pressing [Submit] button, the screen is automatically changed to "Generate Project Forms (Monitor)". The screen indicates the generation job summary and its progress with a progress bar as seen below.

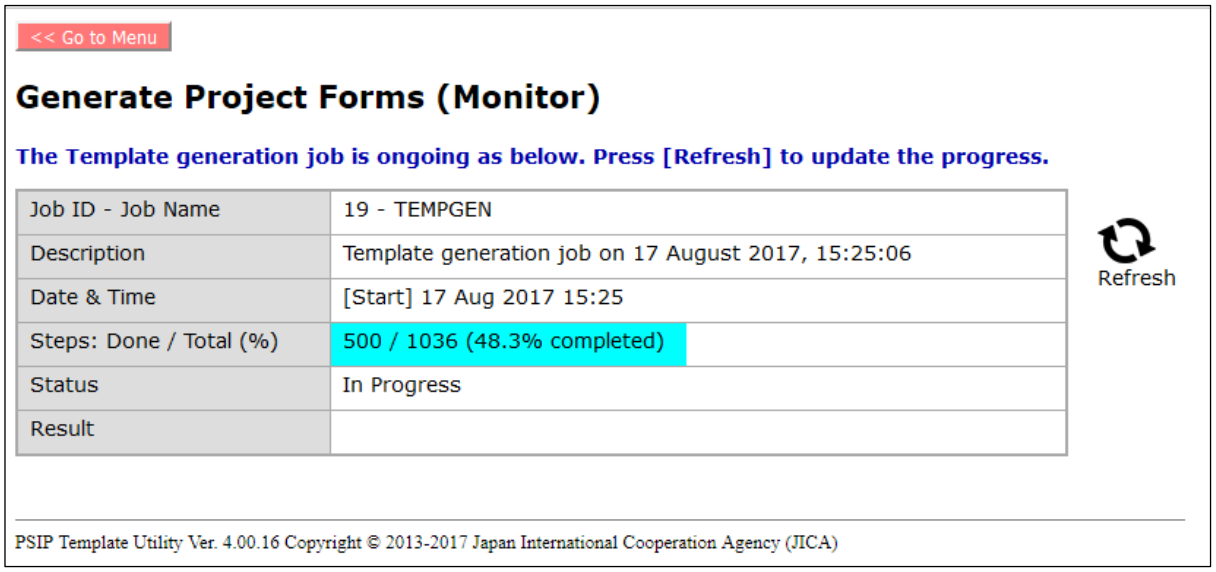


Figure 8 Job monitor of Template Generator (Batch)

Because the generation job is running as a background process, the screen can be closed anytime. The generation job is still running and you can get back to this monitoring screen by navigating "System Setup" → "Template Generator (Batch)".

The directories that the generated templates saved are:

~/public_html/psip/2018-19/***template-type-directory***

The year part "2018-19" is changed according to the Database's fiscal year and "***template-type-directory***" varies in the directory name according to the template types. Next table shows the template type and corresponding directory name.

Table 7 Template name vs Directory name

Template Type	Directory Name
New Project Proposal (Blank)	Project_Templates_NEW
New Project Proposal (Pipeline)	Project_Templates_NEWP
Ongoing Project Proposal	Project_Templates_ONG
Quarterly Progress Report Form	Project_Templates_QT
PFM-IT Form	Project_Templates_PFM

Under such template type dependent directories, the templates are stored in the vote code directory such as “050_001” where “005” is the vote code and “_001” is the common suffix. For example, an ongoing project which belongs to the Ministry of Health (vote code is 310), the template of FY2018/19 will be saved into the directory “~/public_html/2018-19/Project_Templates_ONG/310_001”.
In batch way, the previously existed directories are automatically renamed by adding “_old” and prevented to be overwritten (i.e. Project_Templates_NEWP → Project_Templates_NEWP_old). But the previously existed “_old” directories are removed automatically.
The file name of the templates/forms follows next format.

*<year>*_*<vote>*_*<type>*_*<project title>*.xlsm

The meaning of each part is as below.

<year>	In case of FY2018/19, this part is “1819”.
<vote>	3 digits vote code (i.e. 070)
<type>	One of NEW, ONGOING, QTREPORT, PFM-IT
<project title>	Maximum 50 letters and spaces are converted to underscore (_).
.xlsm	Common file extension (Excel macro format file)

The generated templates have to be downloaded and tested accordingly.
Note that the creation of Project_Templates_NEW is not automatic. It must be manually created and the symbolic link to ~/base_templates2/new.xlsm must be created manually. See follows for the operation. The explanation assumes for the FY2018/19 PSIP operation.

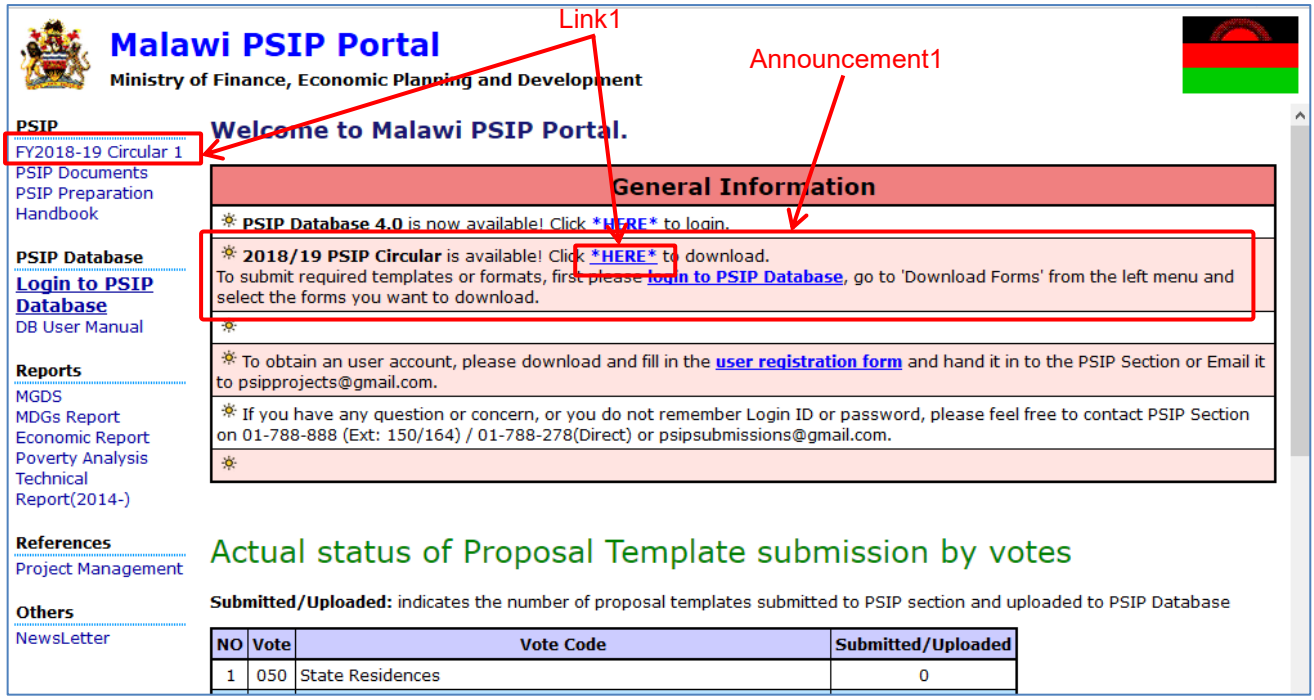
<Login as psip user to PSIP Production server>

```
[psip@pusip33 ~]$ cd public_html/psip/2018-19
[psip@pusip33 ~]$ mkdir Project_Templates_NEW
[psip@pusip33 ~]$ cd Project_Templates_NEW
[psip@psip33 Project_Templates_NEW]$ ln -sf ~/base_templates2/new.xlsm NEW_BLANK.xlsm
```

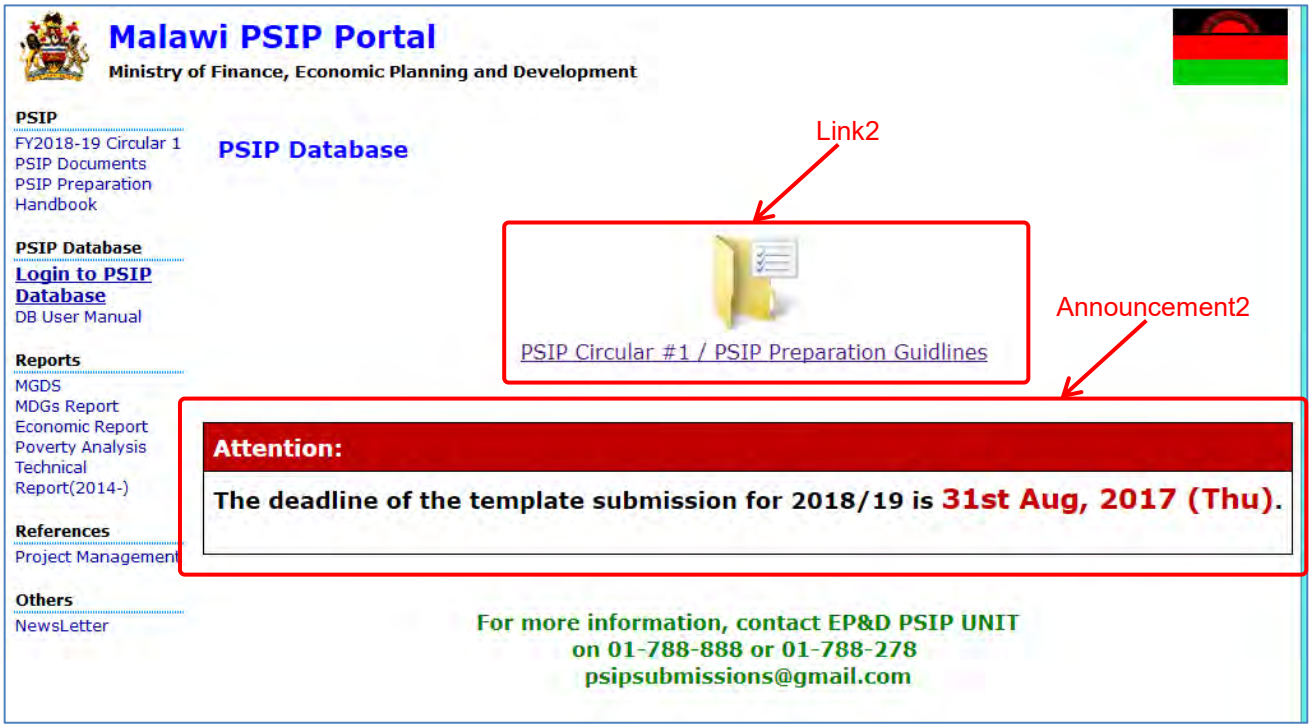
This must be done every year before Circular #1 starts.

2.11 Announce Circular#1 on Portal

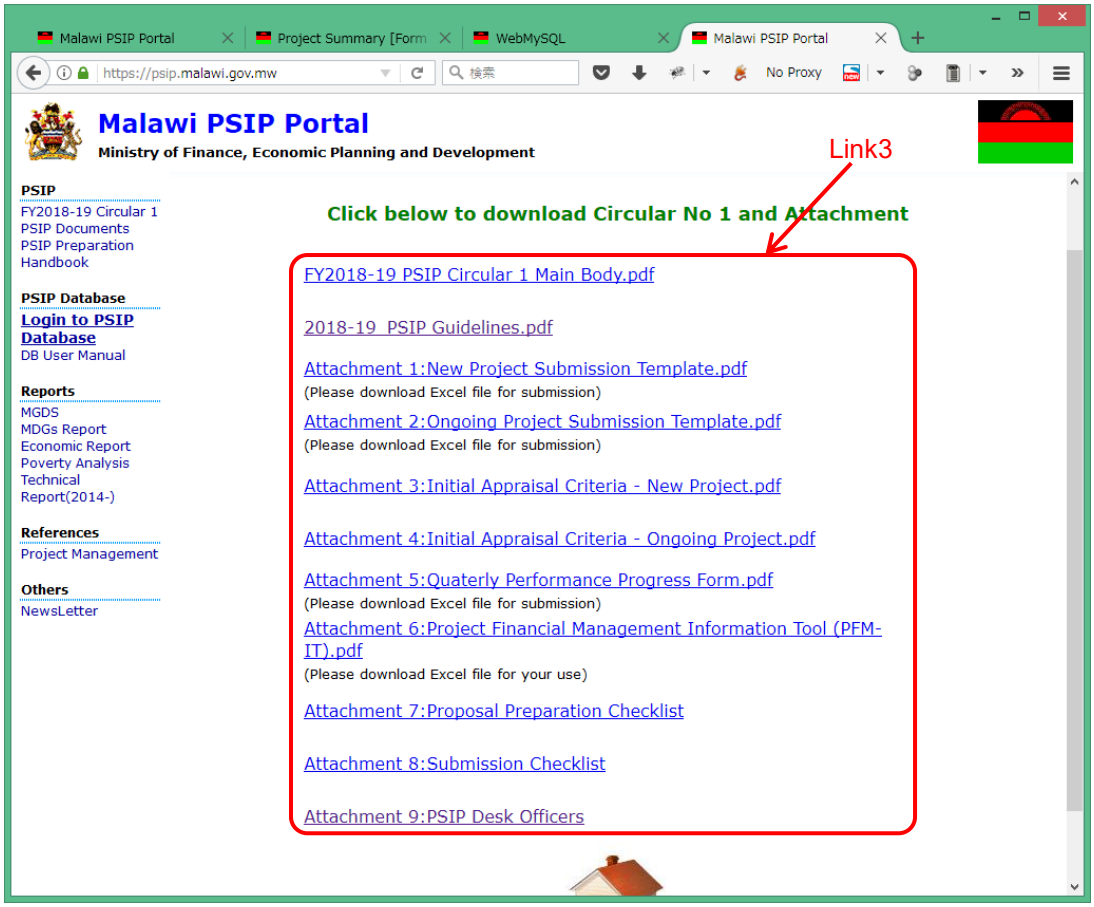
This requires modifications of PSIP Portal sources. At first, the front page must have following announcement and links.



After clicking one of the Link1, page will be move to next.



After clicking the Link2, page will be move to next.



Next table summarizes the source files which contains above announcements and links.

No.	Announcement/Link	Directory (from psip's home directory)	Source file
1	Announcement1 (with Link1)	public_html	settings.ini
2	Link1 (Side menu)	public_html	navi.php
3	Announcement2	public_html/psip/2018-19	index.php
4	Link2	public_html/psip/2018-19	index.php
5	Link3	public_html/psip/2018-19/Circular	index.php
6	Circular#1 documents (PDF, Excel)	public_html/psip/2018-19/Circular	N.A.

Note: 2018-19 varies according to the Databases fiscal year setting.

The files have to be copied and revised every year. For example, in FY2019/20, an IT staff has to do followings.

(1) Login as psip user.

(2) Copy contents of "2018-19" to "2019-20" directory.

```
[psip@pusip33 ~]$ cd public_html/psip
[psip@psip33 psip]$ cp -r 2018-19 2019-20
```

(3) Edit index.php file in 2019-20 directory accordingly.

(4) Remove old Circular documents and copy new Circular documents into "Circular" directory.

```
[psip@psip33 psip]$ cd
[psip@psip33 ~]$ cd public_html/psip/2019-20/Circular
[psip@psip33 psip]$ rm *.pdf *.xlsx
[psip@psip33 psip]$ cp documents-source-location/* .
```

(5) Edit index.php file in Circular directory accordingly.

(6) Edit settings.ini and navi.php in public_html

2.12 Load submitted Templates to Database

The templates submitted by MDAs must immediately be loaded to the database. There are 3 ways to do it such as manual way (Template Loader), drag & drop way (Web-based Submission) and another drag & drop way (Drop into shared folder). The differences between manual way and drag & drop ways are summarized below.

(1) Manual way can accepts any fiscal year's template but drag & drop way only accepts Database's fiscal year for New/Ongoing proposal templates and Database's fiscal year - 1 for Quarterly Progress Report forms.

(2) Manual way can know the result (success/fail) immediately but for drag & drop way, the result can be known by checking the submission log.

(3) Manual way can check the differences of contents between previous loading and new loading before registering to the database. But drag & drop way is unable to do it beforehand.

2.12.1 Loading Templates using Template Loader

The page can be reached by PSIP Management → Template Loader.

Figure 9 Template Loader

The file to be uploaded is located in your local PC or shared folder and it's specified from [Choose File] button. After specifying the file, press [Load the file] to load. Next screen comes out if the loading is succeeded.

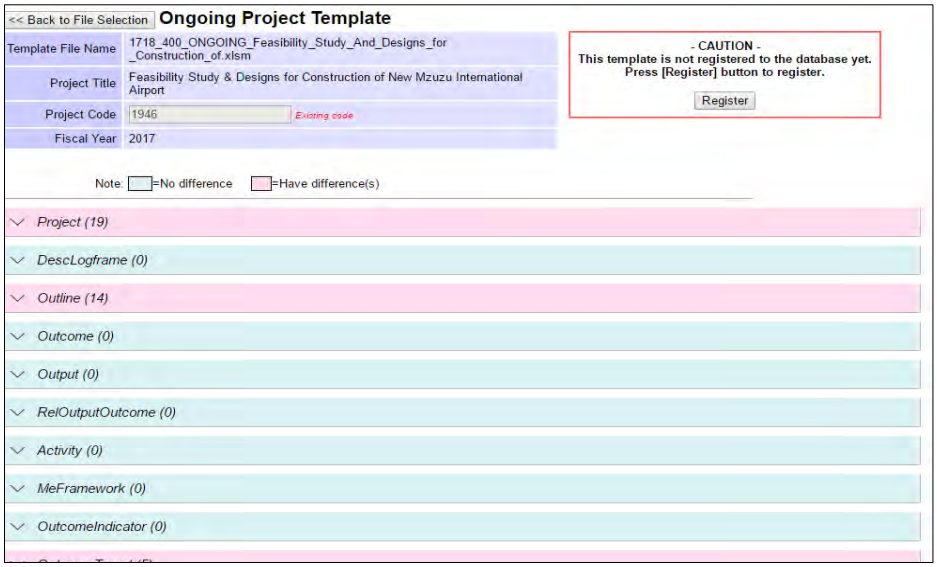


Figure 10 Loading file comparison screen

Each bar corresponds to the database table and pink color indicates there are differences between loaded data and database contents, and blue color indicates there is no difference. The detail can be seen by clicking the bar. After confirming the contents, press [Register] button to register the loaded data to be a new or updated project record.

2.12.2 Loading Templates using Web-based Submission

The page can be reached by PSIP Management → Web-based Submission.

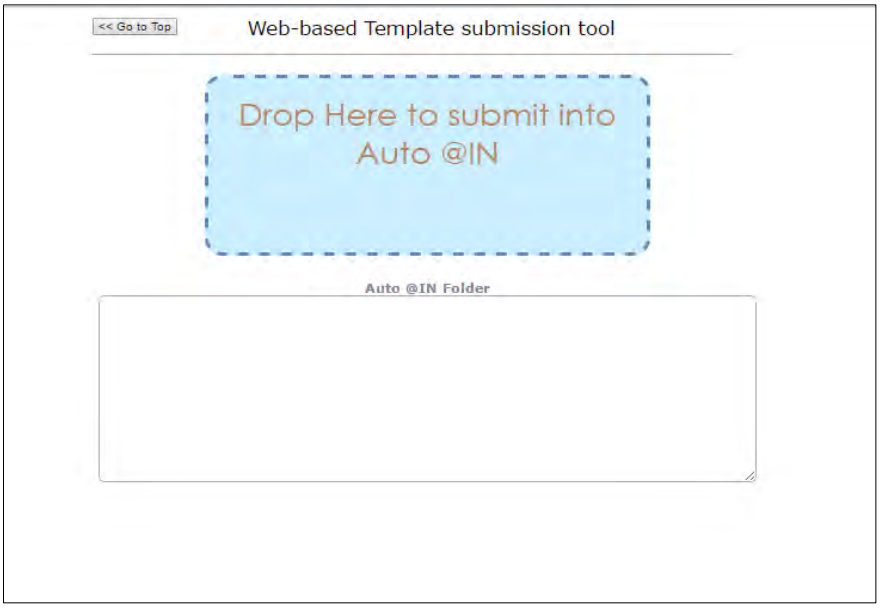
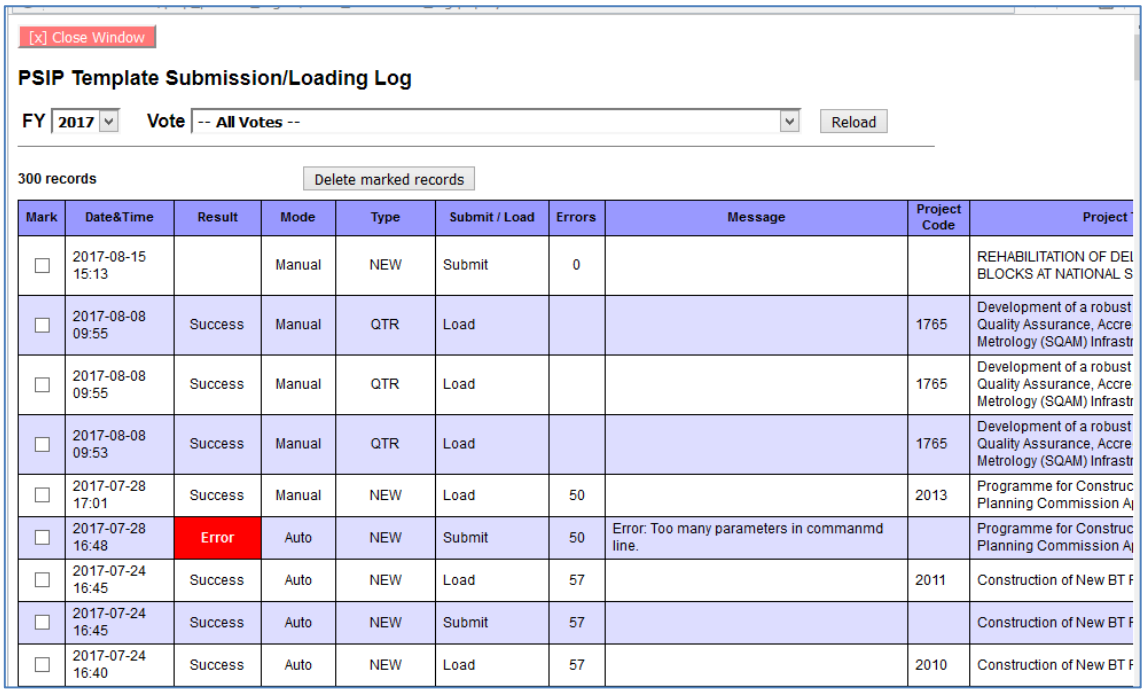


Figure 11 Web-based Submission

The Template file(s) can be drag & drop into the upper rounded rectangular box. After the files are uploaded, the file names appear in the below rectangular box. After loading to the database is completed, the file disappears from the box. The result of the loading can be known by checking the submission log which can be reached by PSIP Proposal → Submission Status → Show submission log.


[x] Close Window

PSIP Template Submission/Loading Log

FY 2017 Vote -- All Votes -- Reload

300 records Delete marked records

Mark	Date&Time	Result	Mode	Type	Submit / Load	Errors	Message	Project Code	Project
☐	2017-08-15 15:13		Manual	NEW	Submit	0			REHABILITATION OF DEI BLOCKS AT NATIONAL S
☐	2017-08-08 09:55	Success	Manual	QTR	Load			1765	Development of a robust Quality Assurance, Accre Metrology (SQAM) Infrastr
☐	2017-08-08 09:55	Success	Manual	QTR	Load			1765	Development of a robust Quality Assurance, Accre Metrology (SQAM) Infrastr
☐	2017-08-08 09:53	Success	Manual	QTR	Load			1765	Development of a robust Quality Assurance, Accre Metrology (SQAM) Infrastr
☐	2017-07-28 17:01	Success	Manual	NEW	Load	50		2013	Programme for Construc Planning Commission Ap
☐	2017-07-28 16:48	Error	Auto	NEW	Submit	50	Error: Too many parameters in commanmd line.		Programme for Construc Planning Commission Ap
☐	2017-07-24 16:45	Success	Auto	NEW	Load	57		2011	Construction of New BT F
☐	2017-07-24 16:45	Success	Auto	NEW	Submit	57			Construction of New BT F
☐	2017-07-24 16:40	Success	Auto	NEW	Load	57		2010	Construction of New BT F

Figure 12 Submission log screen

If the Result column indicates "Error" with red color, the loading is failed. The submission log records affects the submission status appears in PSIP Portal and "Project Template Submission Status" screen. In case the particular record(s) of submission log should be removed due to unexpected submission status, ADMIN privileged users can do it from submission log screen. To remove the records, give mark the desired record(s) and press [Delete marked records].

This submission log deletion is not only applicable for Web-based Submission but also applicable to all other loading ways.

2.12.3 Loading Templates using Shared folder

By doing drag & drop into a Windows shared folder provided by PSIP Database, template loading can be done as same condition as Web-based Submission. The shared folder name that the templates have to be dropped is "50_Auto @IN".

In any ways, the templates will be automatically moved to another directory "51_Auto @Success" or "52_Auto @Fail" according to the result. Actually the templates are classified based on the fiscal year, template type (NEW/ONGOING/QT) and vote and saved into appropriate folder. For example, a

template is for FY2018/19 Ongoing proposal submission and the vote belongs to is "275 - Subvented Organizations", the folder tree "2018/ONGOING/275-Subvented_Organizations" is automatically created and the template is saved into the folder. This is applicable to all 3 ways.

2.13 Support Economists on using Database functions

There are several functions that can help economists' activities. The IT staffs have to help in order to make their work efficient and accurate. Next section introduces the reporting capability of PSIP Database. And following sections introduces administrative utilities which can be used for removing project information from the database, rolling back the project record history.

2.13.1 Make detail reports and summary reports

From the side menu, navigate Reports → Project List so that you can make project detail reports and summary report as well.

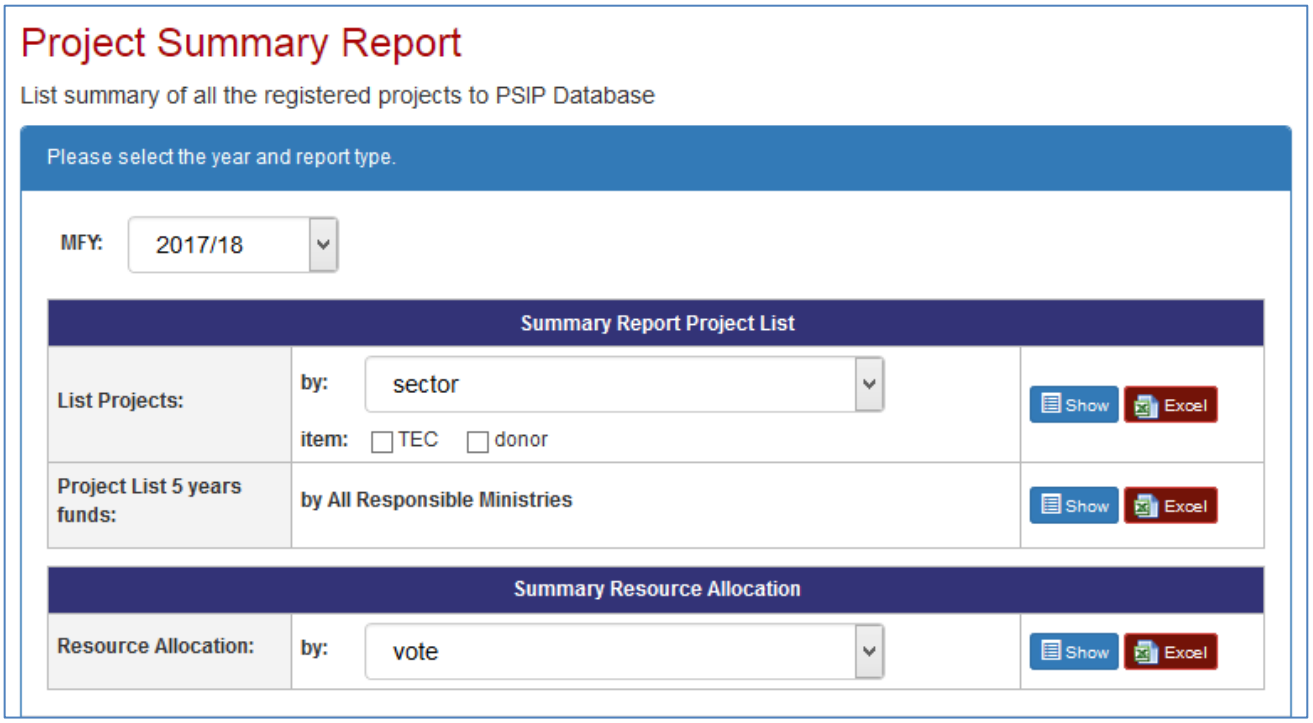
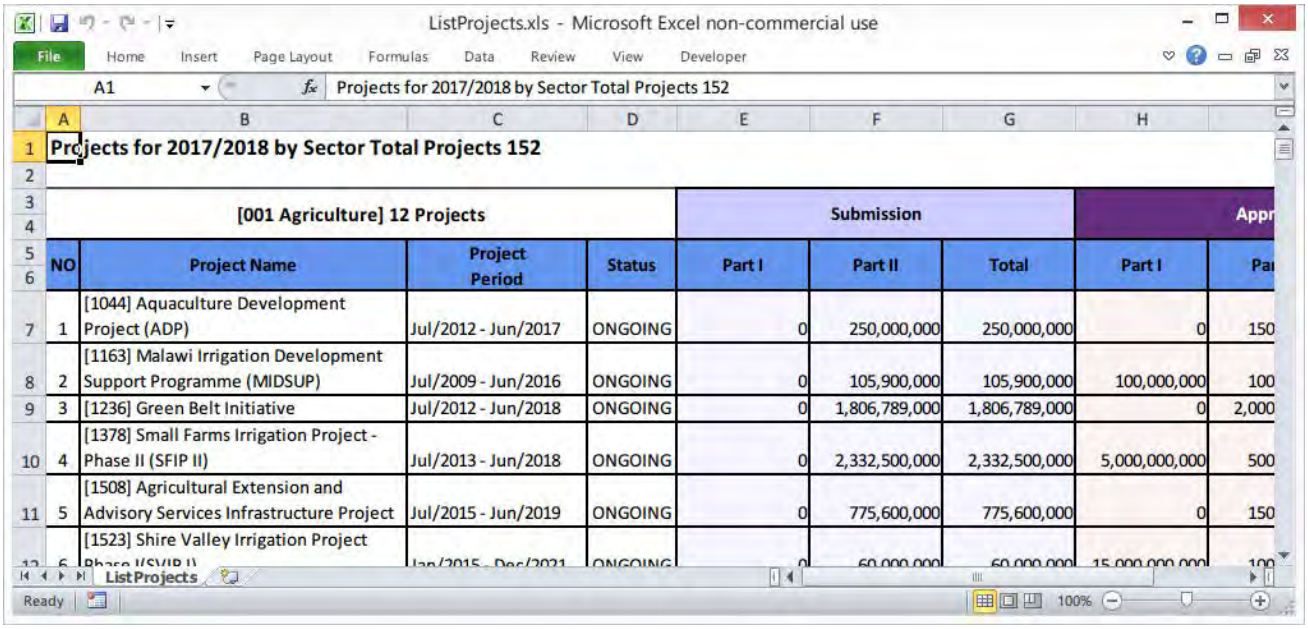


Figure 13 Project Summary Report

From this page, several types of report can be generated and to be downloaded as Excel file. Below is the example of Excel formatted report "Project Details by Sector".



ListProjects.xls - Microsoft Excel non-commercial use

Projects for 2017/2018 by Sector Total Projects 152

NO	Project Name	Project Period	Status	[001 Agriculture] 12 Projects / Submission Part I	Part II	Total	Appr Part I	Pa
1	[1044] Aquaculture Development Project (ADP)	Jul/2012 - Jun/2017	ONGOING	0	250,000,000	250,000,000	0	150
2	[1163] Malawi Irrigation Development Support Programme (MIDSUP)	Jul/2009 - Jun/2016	ONGOING	0	105,900,000	105,900,000	100,000,000	100
3	[1236] Green Belt Initiative	Jul/2012 - Jun/2018	ONGOING	0	1,806,789,000	1,806,789,000	0	2,000
4	[1378] Small Farms Irrigation Project - Phase II (SFIP II)	Jul/2013 - Jun/2018	ONGOING	0	2,332,500,000	2,332,500,000	5,000,000,000	500
5	[1508] Agricultural Extension and Advisory Services Infrastructure Project	Jul/2015 - Jun/2019	ONGOING	0	775,600,000	775,600,000	0	150
6	[1523] Shire Valley Irrigation Project Phase II(SVIP II)	Jan/2015 - Dec/2021	ONGOING	0	60,000,000	60,000,000	15,000,000,000	100

Please refer to corresponding user's manual for other useful functions.

2.13.2 Remove project information from the database

Below example is to remove all information about project code 1234 of FY2018/19 from the database.

<Login to Production Server as psip user>

```
[psip@pusip33 ~]$ cd public_html/tload2/adm
[psip@psip33 adm]$ php cmd_remove_project.php 1234 2018
3 record(s) removed.
[psip@psip33 adm]$
```

Be careful for using this utility because there is no confirmation before removing and no way to take it back.

2.13.3 Roll back the project history in the database

Project records are managed by history number. Every project can have one or more histories in every fiscal year according to the updates of the project proposal / progress information. The history number of the latest available record is 0 (zero) and 1 generation older record's history number is 1 (one), and 2 generations back is 2 (two) and so on. The special history number -1 means "Loaded but not used". The history number -1 appears when a template is loaded but not registered ([Register] button is not pressed in Template Loader screen). The meaning of "roll back history" is to shift the specified history number to 0. For example, in case that there are 5 histories (0 - 4) and rollback the history number 2, the effect is to change the history number 2 → 0, 3 → 1 and 4 → 2.

Below example is to roll back the history of project code 1234 of FY2018/19. The target history number is 1. This operation is usually be done when a loading is to be cancelled.

<Login to Production Server as psip user>

```
[psip@pusip33 ~]$ cd tools/ 50_rollback_history
[psip@psip33 50_rollback_history]$ php rollback_history.php 1234 2018 1
Removing records from achievement... done.
Removing records from contact... done.
Removing records from cost_matrix... done.
  :
Updating project_id of records in app_score_resultoriginal... done.
Updating project_id of records in qt_report... done.
Change hist_num from 1 to 0 in project table ... done.
[psip@pusip33 ~]$
```

Be careful because there is no confirmation and no way to take it back.

2.13.4 Generate database table creation script from the table definition (Excel file)

There is a utility to generate the "CREATE TABLE …" script by reading the table's specification written in Excel format Data Dictionary file. The usage of the utility is as below.

usage: **php generate_script.php [-u]** *file-path sheet-name* [*table-option*]

options

-u Generate unique constraint option for natural keys.

Followings are the example to generate the table creation script for "Job, Job_Step" sheet of PSIP_DB-Dictionary_Ver.4.00.01-20170811-01.xlsx.

<Login to Production Server as psip user>

```
[psip@psip33 ~]$ cd tools/20_db_maintenance_scripts
[psip@psip33 20_db_maintenance_scripts]$ php generate_script.php -u
~/tmp/PSIP_DB-Dictionary_Ver.4.00.01-20170811-01.xlsx "Job, Job_Step" "ENGINE=InnoDB DEFAULT
CHARSET=utf8 ROW_FORMAT=DYNAMIC"
```

<Below is the output of this execution>

```
DROP TABLE IF EXISTS job;
CREATE TABLE job (
  id                INT PRIMARY KEY AUTO_INCREMENT,
  job_name           VARCHAR(200) NOT NULL,
  job_desc           VARCHAR(2000),
  schedule           VARCHAR(200),
```

```
  os_user           VARCHAR(20),
  max_duration       INT,
  steps             INT,
  progress           INT,
  pause             VARCHAR(5),
  status            VARCHAR(5),
  result            VARCHAR(5),
  start_dtime        VARCHAR(20),
  finish_dtime       VARCHAR(20),
  ts                TIMESTAMP,
  log_id             INT
) ENGINE=InnoDB DEFAULT CHARSET=utf8 ROW_FORMAT=DYNAMIC;

DROP TABLE IF EXISTS job_step;
CREATE TABLE job_step (
  id                INT PRIMARY KEY AUTO_INCREMENT,
  job_id             INT NOT NULL,
  odr               INT,
  level              INT,
  cmd               TEXT,
  status             VARCHAR(5),
  exit_code          VARCHAR(5),
  message           TEXT,
  start_dtime        VARCHAR(20),
  finish_dtime       VARCHAR(20),
  ts                TIMESTAMP,
  log_id             INT,
  UNIQUE (job_id, odr)
) ENGINE=InnoDB DEFAULT CHARSET=utf8 ROW_FORMAT=DYNAMIC;
```

3 Monitoring the sever health

It is needed to keep server stable and being health. This chapter describes how to monitor the server health. It's expected to perform the health checking at least one a week. The actual steps of health checking by each server are described in following sections.

3.1 Monitoring Physical Server's health

The monitoring items of Physical Server's health are as below.

- Disk space usage including the external USB HDD
- Backup log abnormality
- RAID disk status
- UPS status

3.1.1 Checking the disk space usage including the external USB HDD

Do followings.

(1) Login as root user to the Physical Server (10.1.99.152).

```
[root@psip30 ~]#
```

(2) Mount the external USB HDD

```
[root@psip30 ~]# mount /mnt-ext-hdd
[root@psip30 ~]#
```

(3) Check the disk space usage with df command

```
[root@psip30 ~]# df
Filesystem                              1K-blocks     Used Available Use% Mounted on
/dev/mapper/vg_psip10-LogVol01       952383436 334319972 569685200  37% /
tmpfs                                  4004432       88   4004344   1% /dev/shm
/dev/sda1                               495844    40193    430051   9% /boot
/usr/local/share/iso/CentOS-6.5-x86_64-bin-DVD1.iso     4363088   4363088   0   100%
/mnt/centos-iso
/dev/sdb1                            976726876 713540372 263186504  74% /mnt/ext-hdd
[root@psip30 ~]#
```

The important lines are highlighted. The 1st line is an OS's main disk space and the usage must be managed below 80%. The usage of this disk space is rather higher than other servers because this server disk space contains the other servers' virtual disk images. The 2nd line is the external USB HDD. It is used for backup of all servers' disk spaces. This usage must be managed below 90%. If it exceeds 90%, the backup strategy must be reconsidered or purchase much bigger volume USB HDD (Currently it's 1TB).

(4) Unmount the external USB HDD

```
[root@psip30 ~]# umount /mnt/ext-hdd
```

```
[root@psip30 ~]#
```

3.1.2 Checking the backup log abnormality

Do followings.

```
[root@psip30 ~]# tail -20 /var/log/daily_backup.log
stty: standard input: Inappropriate ioctl for device
stty: standard input: Inappropriate ioctl for device
stty: standard input: Inappropriate ioctl for device
Warning: Using a password on the command line interface can be insecure.
stty: standard input: Inappropriate ioctl for device
stty: standard input: Inappropriate ioctl for device
stty: standard input: Inappropriate ioctl for device
backup completed at 2017/08/26 01:14:36
backup started at 2017/08/27 01:05:01
stty: standard input: Inappropriate ioctl for device
stty: standard input: Inappropriate ioctl for device
stty: standard input: Inappropriate ioctl for device
stty: standard input: Inappropriate ioctl for device
stty: standard input: Inappropriate ioctl for device
Warning: Using a password on the command line interface can be insecure.
stty: standard input: Inappropriate ioctl for device
stty: standard input: Inappropriate ioctl for device
stty: standard input: Inappropriate ioctl for device
stty: standard input: Inappropriate ioctl for device
backup completed at 2017/08/27 01:31:53
[root@psip30 ~]#
```

This is to display last 20 line of the log file /var/log/daily_backup.log. During the lines “backup started …” and “backup completed …” some warning messages appear but these can be ingnored. If you found other messages, you must investigate the cause and fix it.

3.1.3 Checking RAID disk status (using omreport command)

This is done by using a command omreport which is installed as a part of OSMA (OpenManage Server Administrator). See Server Setup Manual for more details about the installation.

```
[root@psip30 ~]# omreport storage pdisk controller=0 | grep -i stat
Status                    : Ok
State                     : Online
Power Status              : Spun Up
Status                    : Ok
State                     : Online
```

```
Power Status                : Spun Up
Status                      : Ok
State                       : Ready
Power Status                : Spun Up
[root@psip30 ~]#
```

These output lines are OK. If you found some other words such as “Critical” or “Degraded”, you must investigate the cause and fix it. Currently there are 2 physical disks and 2 of them are working as RAID 1 (mirroring) and the rest one is in hot standby. See backup chapter for more details.

3.1.4 Checking RAID disk status (using GUI utility)

Web based server monitoring utility OPENMANAGE is available. Login from next URL.

https://10.1.99.152:1311/

The user name is root and the password is root’s password.

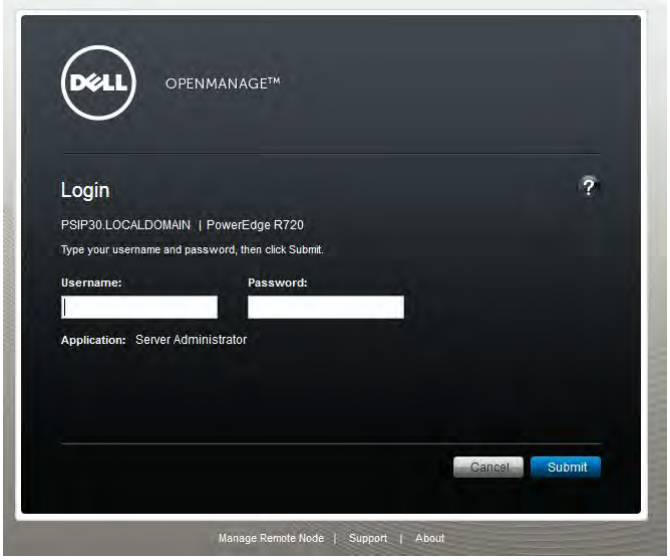


Figure 14 OSMA login screen

The main concern is the health of disks. It can be seen by drilling down to Storage→PERC H710 Mini→Connector 0 (RAID)→Physical Disks. Next example shows all disks are OK.

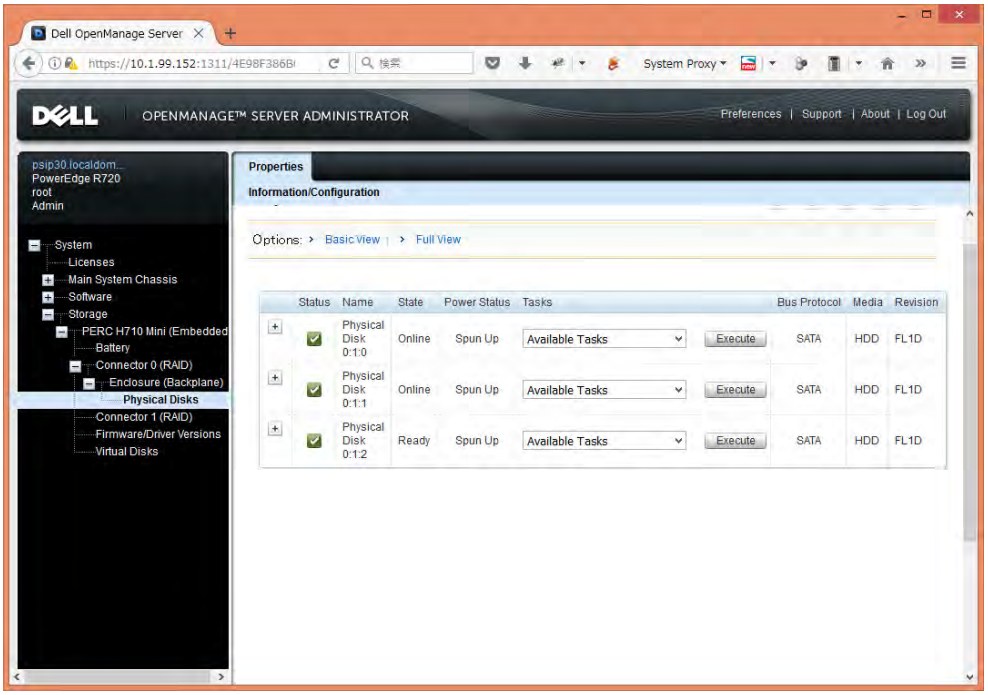


Figure 15 OSMA physical disk page

2 disks (0:1:0 and 0:1:1) organize RAID1 (Mirror) and another disk (0:1:2) is ready for hot standby.

3.1.5 Replacing a disk drive

When a trouble on disk drive happens, the hot standby disk will take place instead of the spoilt disk. In such case, the administrator has to replace the spoilt disk as soon as possible. This section describes how to replace the disk drive.

(1) Take the spoilt disk offline.

There are 2 ways. One is command line base and the other is GUI base.

- Command line base

<Login to Physical server as root>

<Below is an example to take disk 0:1:1 to offline>

```
[root@psip30 ~]# omconfig storage pdisk action=offline controller=0 pdisk=0:1:1
```

<Confirm the result>

```
[root@psip30 ~]# omreport storage pdisk controller=0 pdisk=0:1:1
[root@psip30 ~]# omreport storage pdisk controller=0 pdisk=0:1:1
Physical Disk 0:1:1 on Controller PERC H710 Mini (Embedded)

Controller PERC H710 Mini (Embedded)
ID                            : 0:1:1
Status                        : Ok
Name                          : Physical Disk 0:1:1
State                         : Offline
```

```
Power Status                    : Spun Up
Bus Protocol                    : SATA
Media                          : HDD
 :
```

- GUI Base

  Login to OPENMANAGE and navigate to Storage→PERC H710 Mini→Connector 0 (RAID)→Physical Disks. Select “Offline” from Available Tasks and press [Execute].

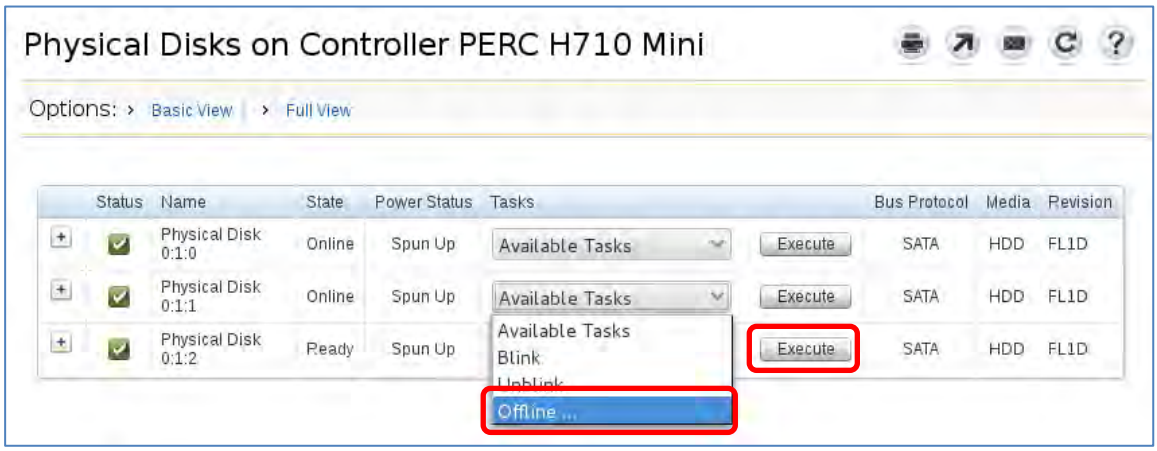


Figure 16 OPENMANAGE: Disk offline

(2) Replace the spoilt disk with spare disk on the server machine.

(3) Reboot the server and press **Ctrl+R** to select “Run Configuration Utility” in BIOS startup screen.

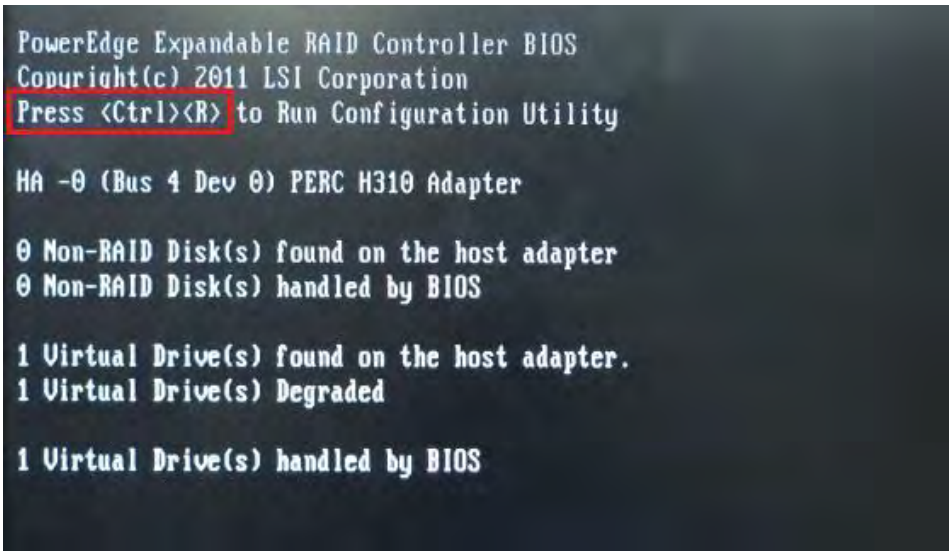


Figure 17 Dell Server BIOS startup screen

(4) Move to “PF Mgmt” tab.

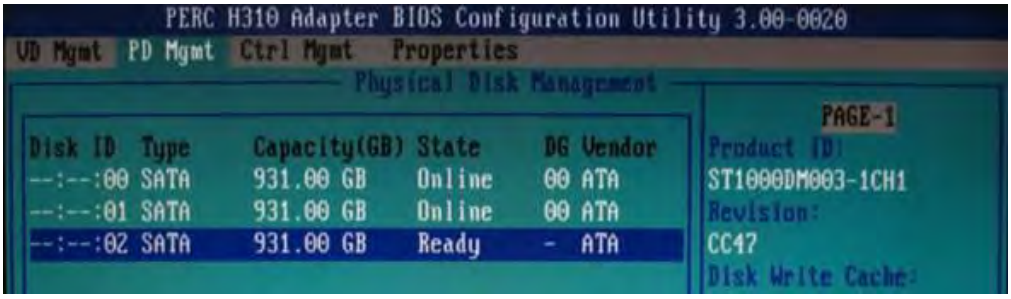


Figure 18 Dell Perc Hxx Adapter BIOS screen (1)

(5) Select “Make Global HS” on the replaced drive.

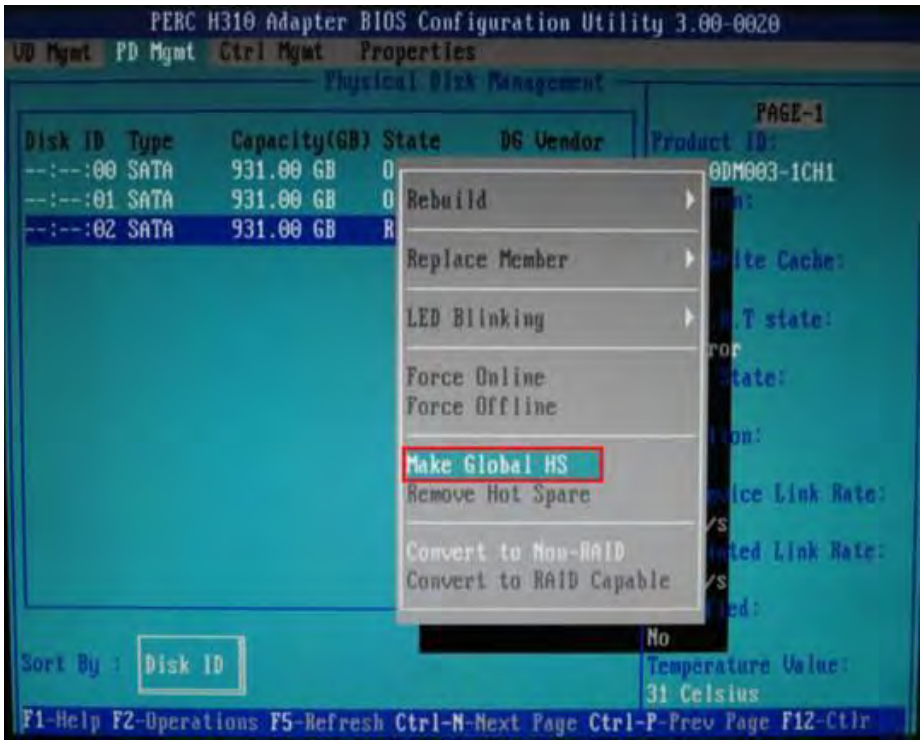


Figure 19 Dell Perc Hxx Adapter BIOS screen (2)

(6) Confirm Rebuild starts.

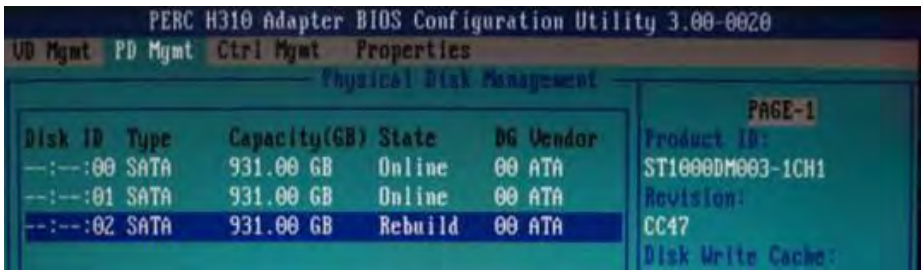


Figure 20 Dell Perc Hxx Adapter BIOS screen (3)

(7) Exit the BIOS Configuration Utility and start server as usual.

(8) Monitor the rebuild status using OPENMANAGE.
The rebuild will take few hours.

3.1.6 Checking UPS status

Use Web based UPS monitor. If any error occurs, it will be shown on the page.

http://10.1.99.152:8080/index.html

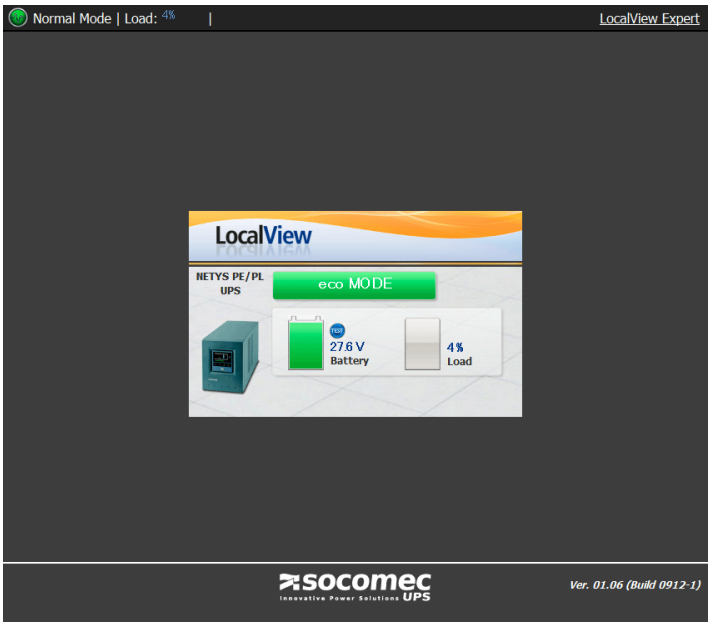


Figure 21 UPS Monitor

To see the measurement and event log, click [LocalView Expert] link in right upper corner.

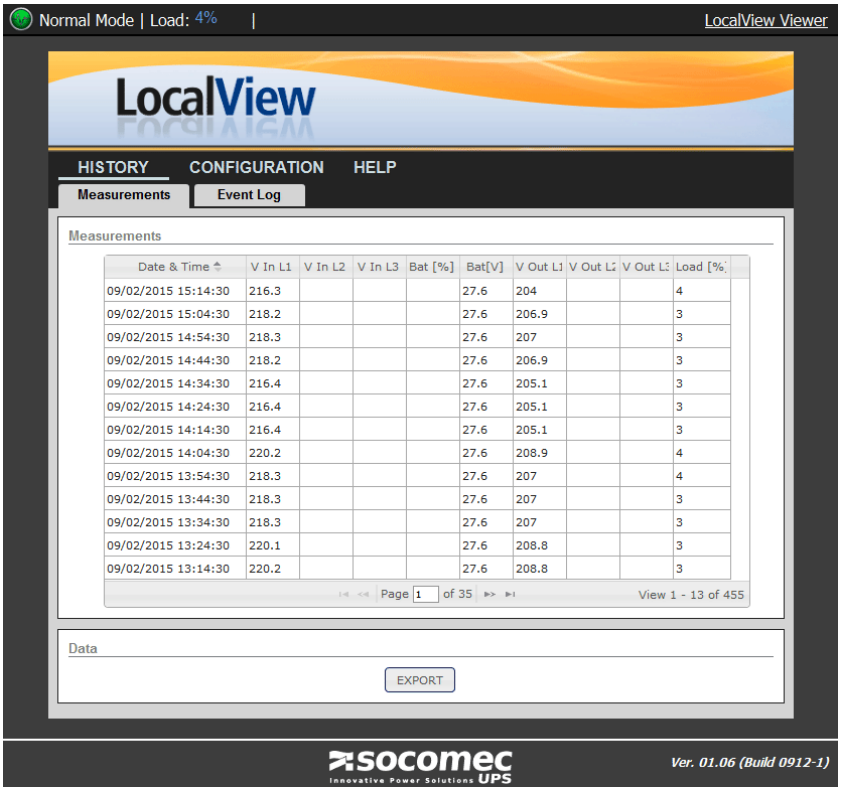


Figure 22 UPS Monitor (LocalView Expert)

3.2 Monitoring PSIP Production Server's health

The monitoring items of Physical Server's health are as below.

- Disk space usage
- Cron job's abnormality

3.2.1 Checking the disk space usage

(1) Login as psip user to the PSIP Production Server (10.1.99.153) and switch to root user.

```
[psip@psip33 ~]$ su -
Password:
Last login: Sun Aug 27 12:50:54 SAST 2017 on pts/1
Last failed login: Sun Aug 27 19:07:15 SAST 2017 from 116.31.116.28 on ssh:notty
There were 1078 failed login attempts since the last successful login.
[root@psip33 ~]#
```

Note that above highlighted part reports there are 1078 times failed login attempts to this server as root user. Because this server's ssh port (22) is exposed to Internet, attackers are trying the brute force attacking but it is safe because the ssh configuration of this server disables the direct login of root user. If the other users such as psip become the target of brute force, we can say it is not safe anymore. But what we can do against such attacks is to set the strong password for these uses. You can observe the more detail situation by checking a log

file /var/log/secure.

(2) Check the disk space usage with df command

```
[root@psip33 ~]# df
Filesystem            1K-blocks    Used Available Use% Mounted on
/dev/mapper/centos-root  52403200  8094892  44308308  16% /
devtmpfs                  1531300        0   1531300   0% /dev
tmpfs                     1540624        0   1540624   0% /dev/shm
tmpfs                     1540624   155996   1384628  11% /run
tmpfs                     1540624        0   1540624   0% /sys/fs/cgroup
/dev/loop0                4209322  4209322         0 100% /mnt/centos-iso
/dev/mapper/centos-home 153484060  3646952 149837108   3% /home
/dev/vdb1             206291944 11701920 184087932   6% /var/samba
/dev/vda1                508588   129252    379336  26% /boot
[root@psip33 ~]#
```

The important lines are highlighted. The 1st line is the main disk space of OS and the 2nd line is for /home which is the space for PSIP Database application and the 3rd line is the disk space for Windows shared folder. All of these must be managed below 80% and sudden increase such as 10% increase may have special reason therefore it must be investigated.

3.2.2 Check the cron job's abnormality

```
[root@psip33 ~]# egrep -i 'error|fail' /var/log/cron
[root@psip33 ~]#
```

If one or more lines are displayed, you have to investigate the cause and fix it. In normal case, no line is displayed.

3.3 Monitoring PSIP Test Server's health

The monitoring items of Physical Server's health are as below.

- Disk space usage

3.3.1 Checking the disk space usage

(1) Login as root user to the PSIP Test Server (10.1.99.153) and switch to root user.

```
[psip@psip34 ~]$ su -
Password:
Last failed login: Sun Aug 27 20:52:33 SAST 2017 from 116.31.116.28 on ssh:notty
There were 16930 failed login attempts since the last successful login.
Last login: Fri Aug 25 10:34:45 2017
[root@psip34 ~]#
```

Note that above highlighted part reports there are 16930 times failed login attempts to this server as root user. Because this server's ssh port (22) is exposed to Internet, attackers are

trying the brute force attacking but it is safe because the ssh configuration of this server disables the direct login of root user. If the other users such as psip become the target of brute force, we can say it is not safe anymore. But what we can do against such attacks is to set the strong password for these uses. You can observe the more detail situation by checking a log file /var/log/secure.

(2) Check the disk space usage with df command

```
[root@psip34 ~]# df
Filesystem            1K-blocks    Used Available Use% Mounted on
/dev/mapper/centos-root  52403200 7284020  45119180  14% /
devtmpfs                  1015204       0   1015204   0% /dev
tmpfs                     1024528       0   1024528   0% /dev/shm
tmpfs                     1024528   98176    926352  10% /run
tmpfs                     1024528       0   1024528   0% /sys/fs/cgroup
/dev/loop0                4209322 4209322         0 100% /mnt/centos-iso
/dev/vda1                  508588  129252    379336  26% /boot
/dev/mapper/centos-home 153484060 2239344 151244716   2% /home
[root@psip34 ~]#
```

The important lines are highlighted. The 1st line is the main disk space of OS and the 2nd line is for /home which is the space for PSIP Database Both must be managed below 80% and sudden increase such as 10% increase may have special reason therefore it must be investigated.

4 Backup and recovery

There are several levels of backup schemes implemented in the server. The entire backup schemes are integrated in the physical server (psip30). This chapter describes types and features of each backup scheme and its implementation details.

Below is the content of main backup script which is executed once a day.

tools/psip30/daily_backup.sh

```
#! /bin/sh
# backup sybose data files
# 2016-11-21
# Author: Y.Ishikawa
# HISTORY:
# 2016-11-21 Initial version
# 2017-05-02 VM image backup is added
# 2017-08-11 Add echos for VM image backup. Add samba backup for psip33
# 2017-08-17 Change the frequency of Samba backup from daily to weekly
#
DATE=`date +%Y%m%d`
# WDAY is day of week number. 0=Sun, 1=Mon ... 6=Sat
WDAY=`date +%w`
# DDAY is day number
DDAY=`date +%d`
MOUNTPOINT=/mnt/ext-hdd
DESTBASE=$MOUNTPOINT/daily_backup
DBBACKUP=$MOUNTPOINT/db_backup
LOGBACKUP=$MOUNTPOINT/log_backup
VMBACKUP=$MOUNTPOINT/vm_backup
KEEPDAYS=30             ← Number of days to keep the backup files
PSIP2ID=psip            ← Database user
PSIP2PW=Kanrisya        ← Database password
#SSH_OPT=-t
SSH_OPT=""

#======
# 0 means Sunday, For once a week backup
SAMBA_BACKUP_DAY=0      ← Day of week to take samba backup (0=Sunday, 1=Monday …)
#======
# For VM image backup
VM_NAMES="psip33 psip34"        ← VM image files names (without extension)
# Once a month on this day
VM_BACKUP_DAY=10        ← Day of month to take VM backup
VM_BACKUP_CMD="/home/psip/tools/psip30/vm_backup.sh"    ← VM backup command
#======

echo -n "backup started at "
```

```
date "+%Y/%m/%d %H:%M:%S"

#Check if the drive is already mounted
df | grep -iq "$MOUNTPOINT"
if [ $? != 0 ]; then
    #If not mounted, mount it
     mount /mnt/ext-hdd
     RETVAL=$?

    if [ $RETVAL != 0 ]; then
       echo "error: $0: External HDD mount failure ($RETVAL)."
       exit 1
    fi
fi
#Create backup base directory if not exists.
if ! [ -d $DESTBASE ]; then
    echo "making directory $DESTBASE"
    mkdir $DESTBASE
fi
if ! [ -d $DBBACKUP ]; then
    echo "making directory $DBBACKUP"
    mkdir $DBBACKUP
fi
if ! [ -d $LOGBACKUP ]; then
    echo "making directory $LOGBACKUP"
    mkdir $LOGBACKUP
fi
if ! [ -d $VMBACKUP ]; then
    echo "making directory $VMBACKUP"
    mkdir $VMBACKUP
fi

#Cleanup old directories
find "${DESTBASE}" -type f -mtime "+${KEEPDAYS}" -exec rm -f {} \;

#Local filesystem backup
HOSTNAME=`hostname -s`
cd /
DIR=home
tar cf - ${DIR} | gzip > $DESTBASE/"${HOSTNAME}_${DATE}_${DIR}".tgz
DIR=etc
tar cf - ${DIR} | gzip > $DESTBASE/"${HOSTNAME}_${DATE}_${DIR}".tgz

#Remote filesystem backup

#========================
HOSTNAME="psip33"
#========================
DIR=home
```

```
ssh ${SSH_OPT} root@${HOSTNAME} "(cd /; tar cf - ${DIR} | gzip)" >
$DESTBASE/"${HOSTNAME}_${DATE}_${DIR}".tgz
DIR=etc
ssh ${SSH_OPT} root@${HOSTNAME} "(cd /; tar cf - ${DIR} | gzip)" >
$DESTBASE/"${HOSTNAME}_${DATE}_${DIR}".tgz
# Added 2015-02-12 Ishikawa
DIR=mysql
ssh ${SSH_OPT} root@${HOSTNAME} "(cd /var/lib; tar cf - ${DIR} --exclude mysql.sock | gzip)"
> $DESTBASE/"${HOSTNAME}_${DATE}_${DIR}".tgz
# Save httpd log, No purge (2016-08-04 Ishikawa)
DIR=httpd
#ssh root@${HOSTNAME} "(cd /var/log; tar cf - ${DIR} | gzip)" >
$LOGBACKUP/"${HOSTNAME}_${DATE}_${DIR}".log.tgz
ssh ${SSH_OPT} root@${HOSTNAME} "(cd /var/log; tar cf - ${DIR} | gzip)" | (cd $LOGBACKUP; tar
xzf -)
# Save psip2 database dump, No purge (2016-11-08 Ishikawa)
ssh ${SSH_OPT} root@${HOSTNAME} "mysqldump -u ${PSIP2ID} -p${PSIP2PW} psip2 | gzip" >
$DBBACKUP/"${HOSTNAME}_${DATE}"-psip2.sql.gz
# Add samba backup for psip33 by Ishikawa 2017-08-11
# Once a week on spified day (Sunday)
if [ $WDAY = "$SAMBA_BACKUP_DAY" ]; then
  DIR=samba
  ssh ${SSH_OPT} root@${HOSTNAME} "(cd /var; tar cf - ${DIR} | gzip)" >
$DESTBASE/"${HOSTNAME}_${DATE}_${DIR}".tgz
fi
#=========================
HOSTNAME="psip34"
#=========================
DIR=home
ssh ${SSH_OPT} root@${HOSTNAME} "(cd /; tar cf - ${DIR} | gzip)" >
$DESTBASE/"${HOSTNAME}_${DATE}_${DIR}".tgz
DIR=etc
ssh ${SSH_OPT} root@${HOSTNAME} "(cd /; tar cf - ${DIR} | gzip)" >
$DESTBASE/"${HOSTNAME}_${DATE}_${DIR}".tgz
# Added 2015-02-12 Ishikawa
DIR=mysql
ssh ${SSH_OPT} root@${HOSTNAME} "(cd /var/lib; tar cf - ${DIR} --exclude mysql.sock | gzip)"
> $DESTBASE/"${HOSTNAME}_${DATE}_${DIR}".tgz

sync;sync;sync

#======
# VM image backup. Once a month on the day specified by VM_BACKUP_DAY
#======
VM_KEEPDAYS=60
if [ $DDAY = "$VM_BACKUP_DAY" ]; then
  #Cleanup old vm image
  find "${VMBACKUP}" -type d -mtime "+${VM_KEEPDAYS}" -exec rm -rf {} \;
  if ! [ -d "${VMBACKUP}/${DATE}"]; then
```

```
    echo "making directory ${VMBACKUP}/${DATE}"
    mkdir "${VMBACKUP}/${DATE}"
  fi
  for vm_name in $VM_NAMES; do
    # This may take an hour or more
    echo "take backup for vm image for $vm_name"
    $VM_BACKUP_CMD -z "$vm_name" "${VMBACKUP}/${DATE}"
  done
fi
sync;sync;sync
#======

cd /
umount $MOUNTPOINT

echo -n "backup completed at "
date "+%Y/%m/%d %H:%M:%S"
exit 0
```

Below is the content of VM (Virtual Machine image) backup script which is executed once a month.

tools/psip30/vm_backup.sh

```
#!/bin/sh
# vm_backup.sh
# Take backup for KVM virtual machine. If the VM is running, once shutdown it and
# take backup, then start the VM again.
# Author: Y. Ishikawa
# HISTORY:
# 2017-08-11 Modify to take backup for additional disk images of each vm
# 2017-05-01 Initial version
#
#
#================================
# exit_with_usage ()
#  print usage and exit this shell
#================================
exit_with_usage () {
cat <<EOF
 Usage
 ./vm_backup.sh [-z] <vm name> <destination path>
    <vm name> Virtual machine name
    <destinatoin path> Path for saving the backup file
    -z       Compress the image file (gzip)
EOF
exit 0
}

#================================
```

```
# get_vm_status()
#  $1=vm name
#  return the specified vm's status to the stdout
#================================
get_vm_status() {
  echo `virsh list --all | grep "$1" | sed 's/^ *//' | sed 's/ \+/\t/g' | cut -f 3`
}
#
#*************************************************************
# Main part
#*************************************************************
#
# Process options
opt_compress=0
while getopts z OPT; do
  case $OPT in
    "z" ) opt_compress=1 ;;
     *  ) exit_with_usage ;;
  esac
done
num_opts=`expr $OPTIND - 1`
num_params=`expr $# - $num_opts`
# Process other parameters
shift $num_opts
if [ $num_params -ne 2 ]; then
  exit_with_usage
fi
# Set required values from paramters
vm_name="$1"
dest_path="$2"
#
if [ ! -d "$dest_path" ]; then
  echo "Error: $dest_path: Diretory not exists."
  exit 1
fi
#
# wait for 60 sec for shutdown
max_wait_count=60
#*** Examine vm status and shutdown if it's running
vm_status=`get_vm_status "$vm_name"`
if [ "$vm_status" = "" ]; then
  echo "Error: $vm_name: VM not exists."
  exit 1
fi
#
count=0
#
if [ $vm_status = 'running' ]; then
  # shutdown
```

```
  virsh shutdown "$vm_name" >/dev/null 2>&1
  sleep 1
  while [ $count -le $max_wait_count ]; do
    if [ `get_vm_status "$vm_name"` = 'shut' ]; then
      break
    else
      sleep 1
      count=$(($count + 1))
    fi
  done
fi
#*** If unable to shutdown try destroy
vm_status_next=`get_vm_status "$vm_name"`
#
if [ $count -gt $max_wait_count -a $vm_status_next = 'running' ]; then
  echo "Warning: $vm_name shutdown failure: Use 'destory' insted."
  count=0
  # destroy
  virsh destroy "$vm_name" >/dev/null 2>&1
  sleep 1
  while [ $count -le $max_wait_count ]; do
    if [ `get_vm_status "$vm_name"` = 'shut' ]; then
      break
    else
      sleep 1
      count=$(($count + 1))
    fi
  done
fi
#*** Take backup
image_path=/var/lib/libvirt/images
#Step1: XML file
virsh dumpxml "$vm_name" > "$dest_path/${vm_name}.xml"
#Step2: Take image backup for possible extentions
for ext in img qcow2; do
  for vm_file in `find $image_path -name ${vm_name}*.$ext`; do
    vm_base_name=`basename "$vm_file"`
    echo -n " VM image backup for $vm_base_name start at "
    date "+%Y/%m/%d %H:%M:%S"
    if [ $opt_compress -eq 1 ]; then
      # Compress
      gzip -c "$vm_file" > "$dest_path/$vm_base_name.gz"
    else
      # No compress
      cp -p "$image_path/$vm_file" "$dest_path"
    fi
    echo -n " done at "
    date "+%Y/%m/%d %H:%M:%S"
  done
```

```
done
#*** Start the vm if originally it was running
if [ "$vm_status" = "running" ]; then
  virsh start "$vm_name" >/dev/null 2>&1
fi
exit 0

#*** End of script
```

4.1 Backup type and strategy

Next table summarizes the backup target, purpose, frequency & retain days and applicable servers.

Table 8 Summary of backups

Target	Purpose (backup directory)	Frequency (Retain days)	Physical Server (psip30)	Production Server (psip33)	Test Server (psip34)
/etc	Backup OS configuration files (daily_backup)	Daily (30 days)	Yes	Yes	Yes
/home	Backup application files and user files (daily_backup)	Daily (30 days)	Yes	Yes	Yes
/var/samba	Backup shared folders (daily_backup)	Weekly (30 days)		Yes	
/var/lib/mysql	Backup MySQL data files (daily_backup)	Daily (30 days)		Yes	Yes
psip2 database dump	Backup psip2 database content (db_backup)	Daily (Infinite)		Yes	
/var/log/httpd	Backup httpd log files (log_backup)	Daily (Infinite)		Yes	
/var/lib/libvirt/images	Backup VM image files and configuration XML files (vm_backup)	Monthly (60 days)	Yes		

4.1.1 File backups in daily_backup directory

The backups of /etc, /home, /var/samba and /var/lib/mysql are taken and saved into daily_backup directory of external USB HDD. The contents are as below.

```
[root@psip30 ~]# mount /mnt/ext-hdd
[root@psip30 ~]# cd /mnt/ext-hdd
[root@psip30 ext-hdd]# ls -lrt daily_backup/
total 595038856
-rwxrwxrwx 1 root root  1914239274 Jul 27 01:07 psip30_20170727_home.tgz
```

```
-rwxrwxrwx 1 root root    9337975 Jul 27 01:07 psip30_20170727_etc.tgz
-rwxrwxrwx 1 root root  544499629 Jul 27 01:08 psip30_20170727_samba.tgz
-rwxrwxrwx 1 root root 8568290514 Jul 27 01:21 psip33_20170727_home.tgz
-rwxrwxrwx 1 root root    7268520 Jul 27 01:21 psip33_20170727_etc.tgz
-rwxrwxrwx 1 root root   40136361 Jul 27 01:22 psip33_20170727_mysql.tgz
-rwxrwxrwx 1 root root 6979911585 Jul 27 01:33 psip34_20170727_home.tgz
-rwxrwxrwx 1 root root    7178910 Jul 27 01:33 psip34_20170727_etc.tgz
-rwxrwxrwx 1 root root   46368865 Jul 27 01:33 psip34_20170727_mysql.tgz
  :
-rwxrwxrwx 1 root root    7265602 Aug 27 01:10 psip33_20170827_etc.tgz
-rwxrwxrwx 1 root root   47878679 Aug 27 01:10 psip33_20170827_mysql.tgz
-rwxrwxrwx 1 root root 9970589565 Aug 27 01:28 psip33_20170827_samba.tgz
-rwxrwxrwx 1 root root 1500569984 Aug 27 01:31 psip34_20170827_home.tgz
-rwxrwxrwx 1 root root    7172400 Aug 27 01:31 psip34_20170827_etc.tgz
-rwxrwxrwx 1 root root   47218471 Aug 27 01:31 psip34_20170827_mysql.tgz
[root@psip30 ext-hdd]#
```

The file name of the backup files is as below.

<host name>_<date>_<target>`.tgz`

To see the contents of a backup file, use tar command with tvzf option as below.

```
[root@psip30 ext-hdd]# tar tvzf daily_backup/psip34_20170827_mysql.tgz
drwxr-xr-x mysql/mysql      0 2017-08-15 17:05 mysql/
drwx------ mysql/mysql      0 2015-07-23 16:47 mysql/mysql/
-rw-rw---- mysql/mysql   9582 2015-07-23 16:47 mysql/mysql/db.frm
-rw-rw---- mysql/mysql   5120 2015-11-18 14:58 mysql/mysql/db.MYI
-rw-rw---- mysql/mysql   3080 2015-11-18 14:58 mysql/mysql/db.MYD
-rw-rw---- mysql/mysql  10684 2015-07-23 16:47 mysql/mysql/user.frm
  :
```

To retrieve the contents of a backup file, also use tar command with xvzf option. Note that the extracted files are save into current location unless otherwise specified.

4.1.2 psip2 database dumps in db_backup directory

The dump of psip2 database are taken and saved into db_backup directory of external USB HDD. The contents are as below.

```
[root@psip30 ext-hdd]# ls -lrt db_backup/
total 2222632
-rwxrwxrwx 1 root root  4656110 Nov  9  2016 psip33_20161109-psip2.sql.gz
-rwxrwxrwx 1 root root  4787624 Nov 10  2016 psip33_20161110-psip2.sql.gz
-rwxrwxrwx 1 root root  4824257 Nov 11  2016 psip33_20161111-psip2.sql.gz
-rwxrwxrwx 1 root root  4831194 Nov 12  2016 psip33_20161112-psip2.sql.gz
```

```
  :
-rwxrwxrwx 1 root root 11122404 Aug 25 01:12 psip33_20170825-psip2.sql.gz
-rwxrwxrwx 1 root root 11366226 Aug 26 01:11 psip33_20170826-psip2.sql.gz
-rwxrwxrwx 1 root root 11366318 Aug 27 01:11 psip33_20170827-psip2.sql.gz
[root@psip30 ext-hdd]#
```

To retrieve the contents of a backup file, use zcat command with specifying the extracted file name. Below is the example.

```
zcat /mnt/ext-hdd/db_backup/psip33_20170827-psip2.sql.gz > /tmp/psip2.sql
```

This is to retrieve the SQL dump file into /tmp directory with the filename “psip2.sql”.
Because the contents of db_backup are never purged, IT staff has to manually purge the contents. To do it, use find command with specifying the number of days to be purged. Next example is to purge files older than 180 days.

```
[root@psip30 ~]# mount /mnt/ext-hdd
[root@psip30 ~]# cd /mnt/ext-hdd/db_backup
[root@psip30 db_backup]# find . -mtime +360 -exec rm -f {} \;
```

4.1.3 Httpd log file backups in log_backup directory

The httpd log file backups are taken for monitoring the access rate. The directory /var/log/httpd is just copied into log_backup directory of external USB HDD. The contents of /var/log/httpd are purged by log rotate utility but all files are copied into log_backup directory before purging. The contents of log_backup is as below. The log files exist under httpd directory.

```
[root@psip30 ext-hdd]# ls -lrt log_backup/httpd/
total 770520
-rwxrwxrwx 1 root root  4143080 Feb 28  2016 error_log-20160228
-rwxrwxrwx 1 root root   843604 Feb 28  2016 access_log-20160228
-rwxrwxrwx 1 root root  3319905 Mar  7  2016 error_log-20160307
-rwxrwxrwx 1 root root   333053 Mar  7  2016 access_log-20160307
-rwxrwxrwx 1 root root 32527457 Mar 13  2016 error_log-20160313
-rwxrwxrwx 1 root root   781203 Mar 13  2016 access_log-20160313
 :
-rwxrwxrwx 1 root root 16557577 Aug 27 00:15 error_log
-rwxrwxrwx 1 root root  2270212 Aug 27 00:15 access_log
-rwxrwxrwx 1 root root 14387814 Aug 27 01:04 ssl_access_log
[root@psip30 ext-hdd]#
```

4.1.4 VM image file backups in vm_backup directory

The VM image backups are saved under vm_backup directory and date sub directory.

```
[root@psip30 ext-hdd]# ls vm_backup
20170710  20170813
[root@psip30 ext-hdd]# ls -l vm_backup/20170813
total 68071292
-rwxrwxrwx 1 root root 14406119295 Aug 13 04:10 psip33-1.img.gz ← psip33 samba disk image
-rwxrwxrwx 1 root root 34509608951 Aug 13 03:21 psip33.img.gz ← psip33 VM image
-rwxrwxrwx 1 root root       2769 Aug 13 02:00 psip33.xml     ← psip33 VM configuration
-rwxrwxrwx 1 root root 20789264355 Aug 13 05:10 psip34.img.gz ← psip34 VM image
-rwxrwxrwx 1 root root       2487 Aug 13 04:11 psip34.xml     ← psip34 VM configuration
[root@psip30 ext-hdd]#
```

4.2 Restoring from backups

4.2.1 Restore /etc directory from the backup

Following example extracts /etc backup and retrieves /etc/httpd content and replace with current one.

```
[root@psip30 ~]# mount /mnt/ext-hdd
[root@psip30 ~]# ls -l /mnt/ext-hdd/daily_backup | less
<Identify the backup file to use and determine to use psip30_20170727_etc.tgz>
<The file contents are extracted to current working directory>
[root@psip30 ~]# tar xvzf /mnt/ext-hdd/daily_backup/psip30_20170727_etc.tgz
drwxr-xr-x root/root        0 2017-07-27 01:05 etc/
-rw-r--r-- root/root       28 2012-05-10 10:17 etc/ethers
drwxr-xr-x root/root        0 2014-10-22 16:19 etc/event.d/
-rw-r--r-- root/root      141 2010-11-11 00:09 etc/event.d/ck-log-system-start
-rw-r--r-- root/root      137 2010-11-11 00:09 etc/event.d/ck-log-system-stop
-rw-r--r-- root/root      146 2010-11-11 00:09 etc/event.d/ck-log-system-restart
drwxr-xr-x root/root        0 2013-11-22 17:15 etc/rsyslog.d/
  :
drwxr-xr-x root/root        0 2014-10-22 16:17 etc/default/
-rw------- root/root      119 2009-11-20 15:16 etc/default/useradd
-rw-r--r-- root/root     1756 2013-11-21 23:15 etc/default/nss
[root@psip30 ~]# mv /etc/httpd /etc/httpd_old          ← Take backup of previous one
[root@psip30 ~]# cp -pr ./etc/httpd /etc               ← Copy extracted contents
[root@psip30 /]# umount /mnt/ext-hdd
```

4.2.2 Restore /home directory from the backup

Following example extracts /home backup and replace with current one.

```
[root@psip30 ~]# mount /mnt/ext-hdd
[root@psip30 ~]# ls -l /mnt/ext-hdd/daily_backup | less
```

```
<Identify the backup file to use and determine to use psip30_20170730_home.tgz>
[root@psip30 ~]# cd /
[root@psip30 /]# mv home home_old      ← Remain present one as home_old
[root@psip30 /]# tar xvzf /mnt/ext-hdd/daily_backup/psip30_20170730_home.tgz
  :
[root@psip30 /]# umount /mnt/ext-hdd
```

4.2.3 Restore /var/lib/mysql directory from the backup (psip33)

Following example extracts /var/lib/mysql backup and replace with current one in psip33.

```
[root@psip30 ~]# mount /mnt/ext-hdd
[root@psip30 ~]# ls -l /mnt/ext-hdd/daily_backup | less
<Identify the backup file to use and determine to use psip33_20170727_mysql.tgz>
[root@psip30 ~]# scp /mnt/ext-hdd/daily_backup/psip33_20170727_mysql.tgz
root@192.168.1.31:/tmp/        ← Remote copy the backup file
[root@psip30 ~]# ssh 192.168.1.31      ← Remote login to psip33
[root@psip33 ~]# cd /var/lib
[root@psip33 lib]# cd /var/lib
[root@psip33 lib]# systemctl stop mysqld      ← Stop mysqld service
[root@psip33 lib]# mv mysql mysql_old         ← Remain present one as mysql_old
[root@psip33 lib]# tar xvzf /tmp/psip33_20170727_mysql.tgz    ← Extract the backup file
  :
[root@psip33 lib]# systemctl start mysqld     ← Start mysqld service
[root@psip33 lib]# exit        ← Logout from psip33
[root@psip30 ~]# umount /mnt/ext-hdd
```

4.2.4 Restore psip2 dump into mysql database (psip33)

Following example extracts psip2 dump backup and restore it into psip2 database in psip33.

```
[root@psip30 ~]# mount /mnt/ext-hdd
[root@psip30 ~]# ls -l /mnt/ext-hdd/db_backup | less
<Identify the backup file to use and determine to use psip33_20170826-psip2.sql.gz>
[root@psip30 ~]# scp /mnt/ext-hdd/daily_backup/psip33_20170826-psip2.sql.gz
root@192.168.1.31:/tmp/        ← Remote copy the backup file
[root@psip30 ~]# ssh 192.168.1.31      ← Remote login to psip33
[root@psip33 ~]# zcat /tmp/psip33_20170826-psip2.sql.gz | mysql -u psip -p psip2
Password:       ← Enter psip user's password of mysql
[root@psip33 ~]# exit ← Logout from psip33
[root@psip30 ~]# umount /mnt/ext-hdd
```

Note that if you want to load the dump into different database name such as "psip2_ref", the database has to be created so that the dump can be loaded.

4.2.5 Restore VM image and restore

Following example retrieves VM image of psip33 and restore.

```
[root@psip30 ~]# mount /mnt/ext-hdd
```

```
[root@psip30 ~]# ls -l /mnt/ext-hdd/vm_backup
20170710  20170813
[root@psip30 ~]# ls -l /mnt/ext-hdd/vm_backup/20170813
-rwxrwxrwx 1 root root 14406119295 Aug 13 04:10 psip33-1.img.gz
-rwxrwxrwx 1 root root 34509608951 Aug 13 03:21 psip33.img.gz
-rwxrwxrwx 1 root root       2769 Aug 13 02:00 psip33.xml
-rwxrwxrwx 1 root root 20789264355 Aug 13 05:10 psip34.img.gz
-rwxrwxrwx 1 root root       2487 Aug 13 04:11 psip34.xml
```

<Identify the backup files to use and determine to use the contents in 20170813 sub directory>

```
[root@psip30 ~]# cd /var/lib/libvirt/images/
[root@psip30 images]# ls -l
-rw------- 1 qemu qemu 214748364800 Aug 27 15:27 psip33-1.img
-rw------- 1 qemu qemu 214748364800 Aug 27 23:25 psip33.img
-rw------- 1 root root   8589934592 Aug 15 16:48 psip34-1.img
-rw------- 1 qemu qemu 214748364800 Aug 27 23:25 psip34.img
[root@psip30 images]# virsh stop psip33        ← Stop psip33
[root@psip30 images]# mv psip33.img psip33.img-backup  ← Remain present image file
[root@psip30 images]# zcat /mnt/ext-hdd/vm_backup/20170810/psip33.img.gz > psip33.img ←
Extract image
[root@psip30 images]# virsh define /mnt/ext-hdd/vm_backup/20170810/psip33.xml  ← Configure
VM
[root@psip30 images]# virsh start psip33       ← Start psip33
[root@psip30 images]# umount /mnt/ext-hdd
```

5 Development environment

This chapter describes how to setup and use the development environment in your PC.

5.1 Setup development environment into a PC

Following steps is removing current psip user and create it again as git managed development environment.

<Login as root>

Note: This operation contains the removal of psip user. You should take the backups before proceeding if there are important files.

```
[root@psip104 ~]# userdel -r psip        ← Remove existing psip user
[root@psip104 ~]# useradd -m psip        ← Create psip user again
[root@psip104 ~]# passwd psip            ← Set password
Changing password for user psip.
New password:
BAD PASSWORD: The password fails the dictionary check - it is based on a dictionary word
Retype new password:
passwd: all authentication tokens updated successfully.
[root@psip104 ~]#
```

<Switch user to psip>

<The PC is supposed to be connected to GWAN>

```
[root@psip104 ~]# su - psip
[psip@psip104 ~]$ cd ..
[psip@psip104 home]$ chmod 755 psip
[psip@psip104 home]$ cd
[psip@psip104 ~]$ scp -r psip@10.1.99.153:install .  ← Copy install directory from PSIP Test Server
psip@10.1.99.153's password:
install_base_templates2.tgz    100% 2137KB   2.1MB/s   00:01
  :

[psip@psip104 ~]$
[psip@psip104 ~]$ cp install/dot_gitconfig .gitconfig
[psip@psip104 ~]$ vi .gitconfig
```

<Change highlighted part accordingly>

```
[user]
 name = Yasumitsu Ishikawa
```

```
  email = ishikawa@jds21.com
[core]
  editor = emacs
[color]
  diff = auto
  status = auto
  branch = auto
[push]
  default = simple
```

<Clone public_html>

```
[psip@psip104 ~]$ git clone -b develop psip@10.1.99.153:public_html.git ← GWAN path
Cloning into 'public_html'...
psip@10.1.99.153's password:
remote: Counting objects: 11732, done.
  :
[psip@psip104 ~]$ cd public_html
[psip@psip104 public_html]$ git remote add inet psip@196.11.82.27      ← Add internet path
```

<Clone tools>

```
[psip@psip104 public_html]$ cd
[psip@psip104 ~]$ git clone -b develop psip@10.1.99.153:tools.git      ← GWAN path
Cloning into 'tools'...
psip@10.1.99.153's password:
remote: Counting objects: 128, done.
remote: Compressing objects: 100% (125/125), done.
  :
[psip@psip104 ~]$ cd tools
[psip@psip104 tools]$ git remote add inet psip@196.11.82.27            ← Add internet path
```

<Clone smarty>

```
[psip@psip104 tools]$ cd
[psip@psip104 ~]$ git clone -b develop psip@10.1.99.153:smarty.git     ← GWAN path
Cloning into 'smarty'...
psip@10.1.99.153's password:
remote: Counting objects: 36, done.
remote: Compressing objects: 100% (34/34), done.
  :
[psip@psip104 ~]$ cd smarty
[psip@psip104 smarty]$ git remote add inet psip@196.11.82.27           ← Add internet path
```

<Extract Smarty library>

```
[psip@psip104 smarty]$ cd
[psip@psip104 ~]$ tar xvzf install/install_smarty.tgz
Smarty
smarty-3.1.27/
smarty-3.1.27/.gitattributes
 :
```

<Extract base_templates2>

```
[psip@psip104 ~]$ tar xvzf install/install_base_templates2.tgz
base_templates2/
base_templates2/20161216_1718_ONGOING_V41_BLANK.xlsm
base_templates2/20161216_1718_NEW_V41_BLANK.xlsm
 :
```

<Initialize symfony and smarty environment>

```
[psip@psip104 ~]$ cd public_html/
[psip@psip104 public_html]$ ./init_env_smarty.sh
[psip@psip104 public_html]$ ./init_env_symfony.sh
[psip@psip104 public_html]$ cd
[psip@psip104 ~]$ cp install/dot_emacs .emacs
```

5.2 Usage of git based development environment

5.2.1 Basic usage

```
[psip@psip104 ~]$ cd public_html
```

<1st Pull the latest contents>

```
[psip@psip104 public_html]$ git pull origin develop
[psip@psip104 public_html]$ cd tload2
[psip@psip104 tload2]$ emacs version.php                ← Editing for example
```

<Edit the source code>

```
[psip@psip104 tload2]$ git add .
[psip@psip104 tload2]$ git commit -am "Edit version by Ishikawa"
[develop 3a9fc94] Edit version by Ishikawa
 2 files changed, 7 insertions(+), 7 deletions(-)
[psip@psip104 tload2]$ git push origin develop          ← Editing for example
psip@10.1.99.153's password:
  :
```

In case your PC is connected via Internet, pull and push command line should be like below.

```
[psip@psip104 public_html]$ git pull inet develop
[psip@psip104 public_html]$ git push inet develop
```

“origin” and “inet” indicates the remote path. “origin” is translated to the IP address 10.1.99.153 and “inet” is translated to the global IP address 196.11.82.27.

5.2.2 Advanced usage

To retrieve change log

```
[psip@psip104 tload2]$ git log
commit 036d62bd741a4f523c7280d3ca9dc8f7408c0259
Author: Yasumitsu Ishikawa <ishikawa@jds21.com>
Date:   Wed Apr 26 00:26:21 2017 +0200

    Edit version by Ishikawa

commit 3a9fc943ab5c2f679d9083ff2dd8059f75178be3
Author: Yasumitsu Ishikawa <ishikawa@jds21.com>
Date:   Wed Apr 26 00:23:01 2017 +0200

    Edit version by Ishikawa

commit 9f6dbb3ce36fa9cfd960ee4021340667fef406d8
Author: PSIP Developer <psip@localhost>
Date:   Tue Apr 25 23:43:39 2017 +0200

    Initial commit by Ishikawa
```

To retrieve differences

```
[psip@psip104 tload2]$ git log -p
commit 036d62bd741a4f523c7280d3ca9dc8f7408c0259
Author: Yasumitsu Ishikawa <ishikawa@jds21.com>
Date:   Wed Apr 26 00:26:21 2017 +0200
 :
```

To retrieve differences for latest 2 updates

```
[psip@psip104 tload2]$ git log -p -2
commit 036d62bd741a4f523c7280d3ca9dc8f7408c0259
Author: Yasumitsu Ishikawa <ishikawa@jds21.com>
Date:   Wed Apr 26 00:26:21 2017 +0200
```

To cancel the change

```
[psip@psip104 tload2]$ git log
Author: Yasumitsu Ishikawa <ishikawa@jds21.com>
Date:   Tue May 2 16:29:00 2017 +0200

    Test4 by Ishikawa

commit ed14418f72412c96dc83464de97641471fb942cd

[psip@psip104 tload2]$ git revert ed144
```

- In case you have pushed to the remote git already, you have to push again -

```
[psip@psip104 tload2]$ git push origin develop
```

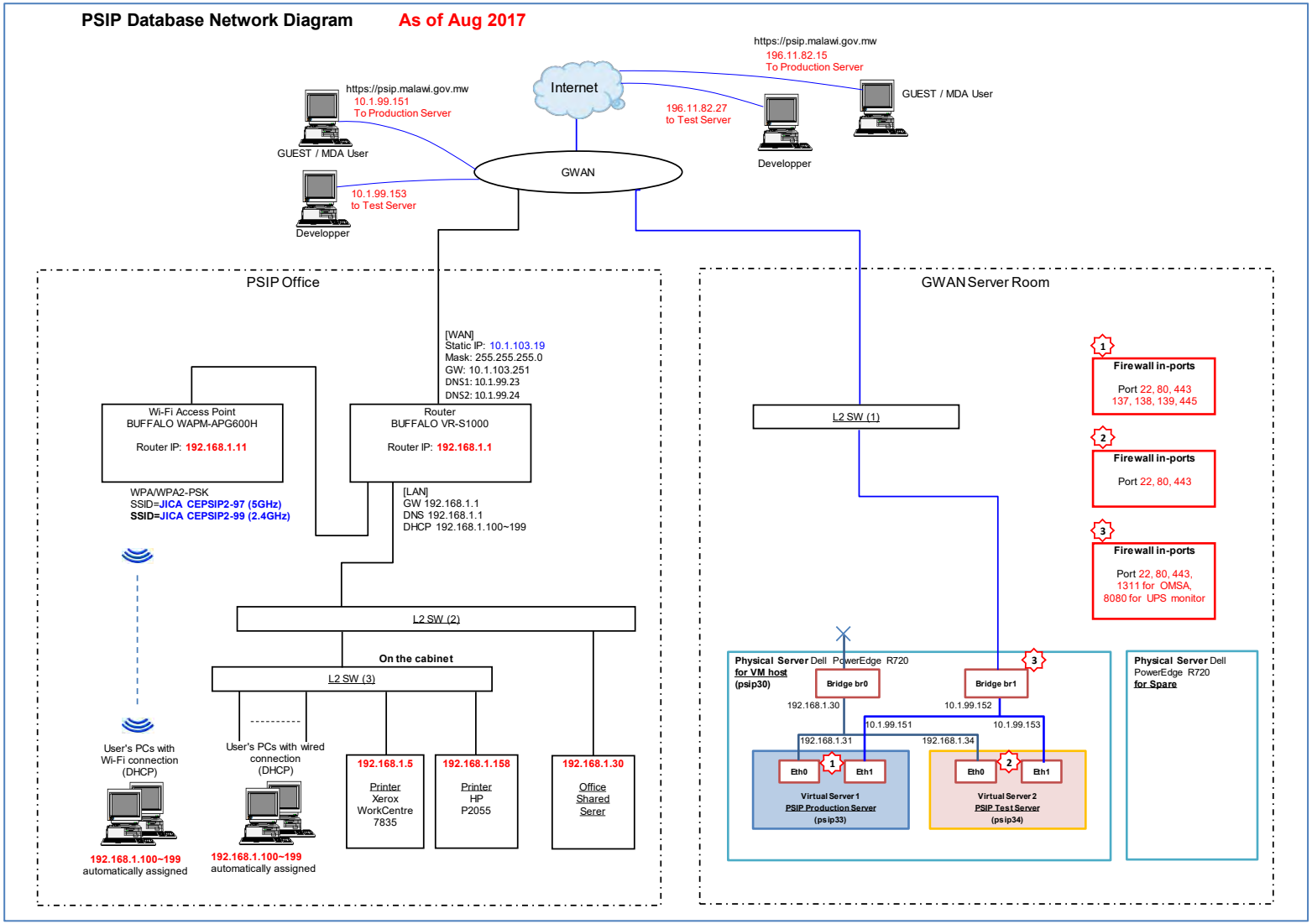
5.2.3 Reflect changes from Test Server to Production Server

To reflect the changes from PSIP Test Server (git server) to PSIP Production Server, it has to be done on PSIP Test Server. Push contents of public_html, tools and smarty one by one using a remote path name “rmtprod”.

<Login to Test Serer>

```
[psip@psip34 ~]$ cd public_html
[psip@psip34 public_html]$ git push rmtprod develop
[psip@psip34 public_html]$ cd ../tools
[psip@psip34 tools]$ git push rmtprod develop
[psip@psip34 tools]$ cd ../smarty
[psip@psip34 smarty]$ git push rmtprod develop
```

Appendix A Network Diagram



Appendix B PSIP IT Annual Schedule

PSIP IT Annual Schedule

Ver.1.1

No.	Summary of Activity	March	April	May	June	July	August	September	October	November	December	January	February
1	Review PSIP formulation and gather/compile the requirements for Database improvement	Gather requirements for improvement PSIP Database review meeting (PSIP IT + Economists)											
2	Prepare for Development	Make Change Request for Server Side Make Excel Template Modification Design											
3	Design		Make Detail Design Development meeting (PSIP IT + e-Government)										
4	Coding, Debugging and Testing		Excel Templates Coding & Debugging Server Side Coding, Debugging, Module Testing		Integrate Testing (Templates + Server) Development meeting (PSIP IT + e-Government)								
5	Preparatoin for Circular#1					Process Extension Request by Economist Collect latest Master Data info. by Economist Renew Template's Master Data Upload Template's Master Data to Database Compile Project's vote change info. by Economist Register Vote Rewrite Spec to Database Collect Approved Budget Info. by Economist Collect Donor funded Projects' Info. by Economist Revise Budget/Status data in Database Switch Database's FY Generate Templates/Forms & Test Announce Circular#1 on Portal Preparatoin review meeting (PSIP IT + Economists)							
6	Activities after Circular#1						Issue Circular#1 Seminar/Workshops Load submitted Templates to Database Support Economists on using Database functions (Initial/Final Appraisal, Site Validation Log, Ministerial Meeting Record, etc.)				Collect Mid-Year revised Budget Info. by Economist Revise Budget/Status		
7	Quarterly Progress Report		Load submitted QT Report to Database (Q3)		Load submitted QT Report to Database (Q4)			Load submitted QT Report to Database (Q1)				Load submitted QT Report to Database (Q2)	

Appendix C Change Request Form

Requestor:

Date of Request:

Change Request Detail - The Change Request form is the document of record for a change request. It provides the business reasons and justification for the change and assesses the risk and impact of the change.	
Type of Change	**Description of change**
☐ Business Change or Need	
☐ Enhancement	
☐ Correction	
☐ Other	
Priority	☐ – **Critical:** "We can't move forward until this change is resolved." ☐ – **High:** "We are fine for right now, but unless this change is resolved by the due date, we won't be able to move forward." ☐ – **Normal:** "We are fine for the right now, but this may impact our ability to move forward in the near future." ☐ – **Low:** "This change is not impacting our ability to move forward."
The additional benefits the proposed change would have.	

_____

Signature of Requester

Authorization

Decision	☐ Approved	☐ Approved with conditions	☐ Rejected	☐ More Information
Decision Date				
Decision Explanation				
Authorizing Officer				

_____

Signature of Authorizing Officer

Project Manager

Date Received:

Change Request #:

Time Required for Change(Days): Estimated Cost:

Estimated Completion Date of Change:

_____

Signature of Project Manager

Appendix D PSIP Database and Excel tools Development Plan & Progress

PSIP Database and Excel tools Development Plan & Progress As of **11/Aug/2017**

No	Discussion Points (Issues)	Measures from IT side	ID	Has Detail Design?	What to be develop	Necessary Days for Development	Party in charge	Priority	Person in-charge	PSIP in charge	Timing to be completed	Idea of implementation	Statusas of 11/Aug/2017	Progress, Challenges, Recommendationsas of 11/Aug/2017
5	summary of the progress need to be added on the template	Before the arear input button add Summary of the progress on template	**5D**	Yes	**DB**	1 week (or less than 1 week)	**PSIP**	High		**Chimwemwe**	Apr	New field --> progress_summary in finance_summary table FINANCE_SUMMARY table, add column PROGRESS_SUMMARY	Ongoing	Completed.
17	Need to add another status Not applicable as a PBB status	If that vote does not have PBB, the user should click Not Applicable. This applies only to subvented projects.	**17D**	Yes	**DB**	1 week (or less than 1 week)	**PSIP**	Normal		**Chimwemwe**	Apr	Add new code into tables; [mst_pbb_program]vote_code:275, pbb_program_code:99, name:99.not applicable [mst_pbb_subprogram]:vote_code:275, pbb_program_code:99, name:99.not applicable This does not involve structure change of tables. The change in template will be reflected to the database when master data uploading.	Ongoing	Completed.
21	Need additional field for PSIP desk officers for project progress.	Add new fields for PSIP desk officers to update about progress of the project in process management unit.	**21D**	Yes	**DB**	1 week (or less than 1 week)	**PSIP**	Normal		**Gift**	Apr	No.5 is for MDA users to write the progress. This is for PSIP desk officer to write the progress. ~~New field in Project Table. --> Has been added (memo in project table) @ver.3.01.06.~~ The "progress" must be divided into "Progress", "Challenges" and (maybe) "Recommendations". Therefore, those collesponding columns have to be added into project table instead of "memo".	Ongoing	The specifiation is being deisussed. The necessary columns of the report are: Vote, NEW/ONGOING (FY2016/17 Status), Project Title, Project Purpose, Physical Progress as at 30th March 2017, Challenges Faced --> New table "project_progress" is added by Ishikawa.
22	Need project status completed	To add new project status completed.	**22D**	Yes	**DB**	1 week (or less than 1 week)	**PSIP**	High		**Gift**	Apr	Add new code to table Const1 This does not involve structure change of tables	Ongoing	The addition of COMPLETED status is held because the effect of the addition has to be examined. --> COMPLETED status can be added only in development environment. It will be done anytime during development period on the development server.
23	Another sheet to quartely progress format	To add another sheet to quarterly progess format. To make MDAs users to write compleetion report.	**23D**	Yes	**DB**	1 week (or less than 1 week)	**PSIP**	Normal		**Shalom**	Apr	Start Date, End Date, Note for Completion Report, Person who write completion report Add new table COMPLETION_REPORT	Ongoing	Completed.
5	summary of the progress need to be added on the template	Before the arear input button add Summary of the progress on template	**5WM**	No	**Web - Smarty**	1 week (or less than 1 week)	**PSIP**	High		**Shalom**	Apr	Add a difinition into loadspec.php Modify model and view of project detail screen	Ongoing	The feature has been added into Ongoing proposal template and Quarterly Progress Report, and also loader/generator + Ongoing view and Quarterly report view are confirmed working well.
13	Updating old template to the database does not counted as errors and uploaded as the one for the wrong years	When uploading a template the usr should specify that templates are for which year on the web before uploading, and if the template with wrong fiscal year tries to be updated, that should be rejected	**13WM**	Yes	**Web - Smarty**	2 weeks (or less than 2 weeks)	**PSIP**	Critical	Ishikawa	**Chimwemwe**	May	After the discussion, below is the idea. Implement year restriction in automatic upload (Shared folder and web-based). But not in manual upload. Because old year's upload is still needed for maintenance purpose. --> Issue: How to know that the upload is rejected	Ongoing	Design is ongoing by Ishikawa. Supposed to be completed by the End of May. Done by Ishikawa as following the idea. The error can be confirmed with checking the submission table.
14	Need summary of minesterial minutes	System should be able to produce a summary of minesterial minutes	**14WM**	Yes	**Web - Smarty**	more than 2 weeks	**e-government**	High	Leviticus	**Shalom**	May	vote, vote code, overall comments, remarks Need new dsign screen with Excel output. --> How to reach this screen? --> Put a button "Ministerial Meeting Summary" on the top of PSIP Process Management screem	Ongoing	Completed.
15	Projects submitted need to be equal to automatically uploaded projects	Remove submitted project column	**15WM**	No	**Web - Smarty**	1 week (or less than 1 week)	**PSIP**	Normal	Ishikawa	**Shalom**	Apr	After the discussion, below is the conclusion. - Remove submission count - Remove Submission folder - Make vote folders in Auto@Success and Auto@Fail folders so that the templates are automatically stored into corresponding vote folders - All submitted templates are stored in Auto@Scuccess and Auto@Fail folders --> Ishikawa does	Ongoing	Design is ongoing by Ishikawa. Supposed to be completed by the End of May. --> Creation of vote folders remains but others have been done. Will be done by 14 Aug 2017 by Ishikawa.
17	Need to add another status Not applicable as a PBB status	If that vote does not have PBB,show ″Not Applicable″. This applies only to subvented projects.	**17WM**	No	**Web - Smarty**	1 week (or less than 1 week)	**PSIP**	Normal		**Chimwemwe**	Apr	Modification in general info. Maybe no modification required -> Yes it is	Ongoing	Completed.
21	Need additional field for PSIP desk officers for project progress.	Add new fields for PSIP desk officers to update about progress of the project in process management unit.	**21WM**	No	**Web - Smarty**	more than 2 weeks	**e-government**	Normal	Khumbo	**Shalom**	May	No.5 is for MDA users to write the progress. This is for PSIP desk officer to write the progress. Add new window launched from PSIP Process management screen	Ongoing	Progress=70% - Buttons on the process management screenn completed. - Database modification completed. - Input window design and coding completed. - Doing debugging. --> Finalised by Ishikawa
22	Need project status completed	To add new project status completed.	**22WM**	No	**Web - Smarty**	1 week (or less than 1 week)	**PSIP**	High		**Gift**	Apr	Just for testing (need to check ISHIKAWA) --> I think addition of COMPLETE status (code='C') into CONST1 table is enough. ~~No modification is needed in program. By Ishikawa~~ Appraisal Summary -> Statistics and Generator (status selection) have to be modified	Ongoing	Completed.
23	Another sheet to quartely progress format	To add another sheet to quarterly progess format. To make MDAs users to write completion report.	**23WM**	No	**Web - Smarty**	more than 2 weeks	**e-government**	Normal	Wezi, Yvonne	**Shalom**	May	Attach Excel template Add COMPLETION_REPORT table, add completion report tab and contents in Quarterly Report view, add definition of COMPLETION_REPORT table in data.class.php, add loading spec of template info into loadspec.php	Ongoing	Completed.
24	How can we pay attention to ending projects.	label template indicating new,ongoing ,ending,pended,completed (when project is generated, need more appropriate project status)	**24WM**	No	**Web - Smarty**	1 week (or less than 1 week)	**PSIP**	Normal	Anderson	**Gift**	Apr	ONGOING (ENDING) --> Must be added to Template generator Modify the part in libTemplate.php, refer to the part which is making NEW(PIPELINE) indication.	Ongoing	Completed.

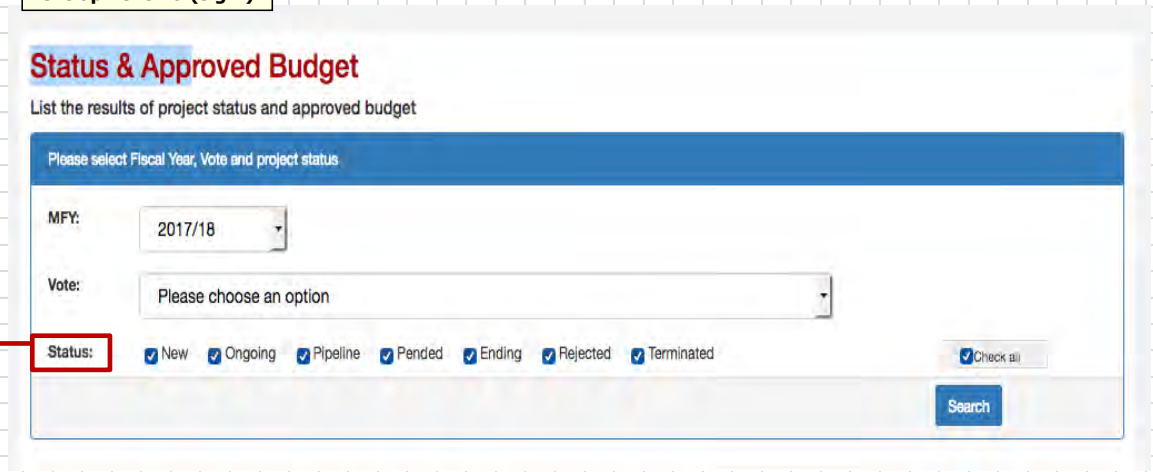
Appendix E PSIP Database Detail Design Form (Page Design)

Screen Design	Dev. No	25	Title	Search condition using submission status
			Screen Name	Project status screen
			Navigation	Menu->Project status->Status & Approved Budget
			Responsible In PSIP	Gift	Date	27 Mar,2017

Created date of this DDesign

Set corresponding Development No.(e.g 1)

Screen Image or Hard Copy



1 Add the Submission status (New, Ongoing,,Ending) under Status.

Submission Status: New Ongoing Ending

2 Change Caption "Status" to "Recent Status"

Government of Malawi

Public Sector Investment Programme (PSIP)

PSIP DATABASE
DATABASE SPECIFICATION

The Ministry of Finance, Economic Planning and Development
Department of Economic Planning and Development
P. O. Box 30136
Lilongwe 3, Malawi

August 2017

Revision

Date	Version No.	Author	Remarks
2017-04-15	3.02.01	Ishikawa	Add PROGRESS_SUMMARY column into FINANCE_SUMMARY table. Add COMPLETION_REPORT table. ~~Add 'COMPLETED' status into CONST1 table (Only addition of data)~~
2017-05-03	3.02.02	Ishikawa	Modify data type of PROGRESS_SUMMARY from INT to TEXT. (Correction)
2017-05-04	3.02.03	Ishikawa	Add PROGRESS_SUMMARY column into QT_REPORT table.
2017-05-14	3.02.04	Ishikawa	Add PROJECT_PROGRESS table
2017-05-15	3.02.05	Khumbo	Remove PROJECT_PROGRESS table and add PROJECT_MEMO table
2017-05-23	3.02.06	Shiraishi	Add COPY_FROM column in APP_DECISION_TRANSITION table
2017-07-01	3.02.07	Ishikawa	Remove SCHEDULED_JOB table. Add JOB table and JOB_STEP table
2017-06-15	3.02.08	Shalom	Add FLAGSHIP column into PROJECT table.
2017-07-16	3.02.09	Ishikawa	Add UESD4 into UNMET_OUTCOME and UNMET_OUTPUT tables

Revision

Date	Version No.	Author	Remarks
2017-08-11	4.00.01	Ishikawa	Delete a regacy tables such as: COST_OUTLAY MST_BUDGET_PROGRAM MST_BUDGET_ITEM MST_BUDGET_SUB_ITEM
2017-08-18	4.00.02	Ishikawa	Add column FOR_FY in OUTCOME_INDICATOR and OUTPUT_INDICATOR

PSIP Database Ver. 4 E-R Diagram

ABC PRIMARY KEY | *ABC* FOREIGN KEY REFERENCE | REFERENCE INFO | TS TIME STAMP | *NATURAL KEY(S) | REFERENCING POINT

PSIP Proposal

PROJECT_CODE
ID
*PROJECT_CODE
EXT_CODE1
EXT_CODE2
EXT_CODE3
EXT_CODE4
REMARK
TS
LOG_ID → LOG_ID

PROJECT
PROJECT_ID
*PROJECT_CODE
*YEAR
*HIST_NUM
MST_VER_NUM
PSIP_PROFILE_CODE
PROJECT_TITLE
PROJECT_TYPE
PROJECT_STATUS
PROJECT_READINESS
PROJECT_READINESS_OTHER
FLAGSHIP
PROJECT_SOURCE
PROGRAM_TITLE
PBB_APPLICABILITY
PBB_PROGRAM
PBB_PROGRAM_CODE → PBB_PROGRAM_CODE
PBB_SUB_PROGRAM_CO → PBB_SUB_PROGRAM_CODE
MGDS_ALIGN
THEME_CODE → MGDS_THEME_CODE
PRIORITY_CODE → MGDS_PRIORITY_COD
BP_CODE
SECTOR_CODE → SECTOR_CODE
HAS_SECTOR_POLICY
SECTOR_POLICY
VOTE_CODE → VOTE_CODE
REP_MINISTRY_CODE → MDA_CODE
IMP_AGENCY_NAME
PRIORITY_NO
PRIORITY_TOTAL
TEC
TEC_YEAR_APPROVAL
TEC_ORIG
TEC_YEAR_APPROVAL_ORIG
YEAR_FIRST_SUBMITTED
YEAR_FIRST_BUDGETTED
YEAR_FIRST_FUNDED
PART1_TOTAL
PART2_TOTAL
START_DATE
END_DATE
START_DATE_PREV
END_DATE_PREV
CONTRACT
CONTRACT_NUM
CONTRACT_DESC
LOCATION
SPECIFIC_LOCATION
IFMIS_CODE
AMP_CODE
PART1_EXP_PAST_FY
PART2_EXP_PAST_FY
PART1_APP_THIS_FY
PART2_APP_THIS_FY
PART1_REQUEST_NEXT_FY
PART2_REQUEST_NEXT_FY
ISSUES_PAST_FY
ISSUES_THIS_FY
TARGET_NEXT_FY
STATUS_SUBMITTED
STATUS_PSIP_RECOMMEND
STATUS_BUDGET_APPROVED
STATUS_MIDYEAR_REVISED
PART1_SUBMITTED
PART1_PSIP_RECOMMEND
PART1_BUDGET_APPROVED
PART1_MIDYEAR_REVISED
PART2_SUBMITTED
PART2_PSIP_RECOMMEND
PART2_BUDGET_APPROVED
PART2_MIDYEAR_REVISED
APP_PSIP_COMMENT
TEMPLATE_VERSION
TEMPLATE_TYPE
TEMPLATE_ERRORS
MEMO
FILEST_ID → FILESET_ID
TS
LOG_ID → LOG_ID

OUTLINE
ID
*PROJECT_CODE
*PROJECT_ID
BACKGROUND
RATIONALE
DESC_GOAL
DESC_PURPOSE
DESC_OUTPUTS
DESC_OUTCOMES
DESC_COMPONENTS
DESC_ACTIVITIES
BENEFICIARIES
IMPACT_OTHER_PROJECTS
IMPACT_BUSINESS
IMPACT_COMMUNITY
IMPACT_ENVIRONMENT
COST_BENEFIT
FINANTIAL_SUSTAINABILITY
INST_SUSTAINABILITY
INST_FRAMEWORK
TS
LOG_ID → LOG_ID

OUTCOME
ID
*PROJECT_CODE
*PROJECT_ID
*OUTCOME_ODR → OUTCOME_ODR
DESCRIPTION
REMARK
TS
LOG_ID → LOG_ID

REL_OUTPUT_OUTCOME
ID
PROJECT_CODE
*PROJECT_ID
*OUTPUT_ODR
OUTCOME_ODRS
TS
LOG_ID → LOG_ID

OUTPUT
ID
PROJECT_CODE
*PROJECT_ID
*OUTPUT_ODR → OUTPUT_ODR
DESCRIPTION
REMARK
TS
LOG_ID → LOG_ID

ACTIVITY
ID
PROJECT_CODE
*PROJECT_ID
*OUTPUT_ODR
*ACTIVITY_ODR
DESCRIPTION
TIME_FRAME
COST
REMARK
TS
LOG_ID → LOG_ID

DESC_LOGFRAME
ID
PROJECT_CODE
*PROJECT_ID
PROJECT_PURPOSE
REMARK
TS
LOG_ID → LOG_ID

CONTACT
ID
PROJECT_CODE
*PROJECT_ID
*ROLE_CODE
ROLE_NAME
NAME
MDA
ORGANIZATION
DIVISION
POSITION
TEL
EMAIL
REMARK
TS
LOG_ID → LOG_ID

ME_FRAMEWORK
ID
PROJECT_CODE
*PROJECT_ID
ME_FRAMEWORK
REMARK
TS
LOG_ID → LOG_ID

OUTCOME_INDICATOR
ID
PROJECT_CODE
*PROJECT_ID
*USED4
*ODR
*FOR_FY
OUTCOME_ODR
INDICATOR
BASELINE
ENDLINE_TARGET
MOV
REMARK
TS
LOG_ID → LOG_ID

OUTCOME_TARGET
ID
PROJECT_CODE
*PROJECT_ID
*USED4
*ODR
*TERM_TYPE
*TERM_AT
INITIAL_TARGET
TARGET
REMARK
TS
LOG_ID → LOG_ID

OUTPUT_INDICATOR
ID
PROJECT_CODE
*PROJECT_ID
*USED4
*ODR
*FOR_FY
OUTPUT_ODR
INDICATOR
BASELINE
ENDLINE_TARGET
MOV
REMARK
TS
LOG_ID → LOG_ID

OUTPUT_TARGET
ID
PROJECT_CODE
*PROJECT_ID
*USED4
*ODR
*TERM_TYPE
*TERM_AT
INITIAL_TARGET
TARGET
REMARK
TS
LOG_ID → LOG_ID

OUTPUT_ACHIEVEMENT
ID
PROJECT_CODE
*PROJECT_ID
*USED4
*ODR
*TERM_TYPE
*TERM_AT
EXP_PART1
EXP_PART2
ACHIEVEMENT
REMARK
TS
LOG_ID → LOG_ID

FUND_SOURCE
ID
PROJECT_CODE
*PROJECT_ID
*DONOR_CODE → DONOR_CODE
DISP_ODR
*FUND_TYPE
ON_OFF
SECURED
CURRENCY_CODE → CURRENCY_CODE
EXCHANGE_RATE
AMOUNT
TS
LOG_ID → LOG_ID

FUND_OUTLAY
ID
PROJECT_CODE
*PROJECT_ID
*DONOR_CODE → DONOR_CODE
*YEAR
*FUND_TYPE
EXCHANGE_RATE
AMOUNT
TS
LOG_ID → LOG_ID

FINANCE_MISC
ID
PROJECT_CODE
*PROJECT_ID
FINANCE_OTHER
TS
LOG_ID → LOG_ID

FINANCE_SUMMARY
ID
PROJECT_CODE
*PROJECT_ID
*USED4
CUM_EXP_TO_YEAR
CUM_EXP_PART1
CUM_EXP_PART2
FUND_PART1_APPROVED
FUND_PART2_APPROVED
FUND_PART1_REVISED
FUND_PART2_REVISED
FUND_PART1_ACTUAL
FUND_PART2_ACTUAL
FUND_P1_DISBURSE_Q1
FUND_P1_DISBURSE_Q2
FUND_P1_DISBURSE_Q3
FUND_P1_DISBURSE_Q4
FUND_P1_OFFBDG_Q1
FUND_P1_OFFBDG_Q2
FUND_P1_OFFBDG_Q3
FUND_P1_OFFBDG_Q4
FUND_P2_Q1
FUND_P2_Q2
FUND_P2_Q3
FUND_P2_Q4
EXP_PART1_Q1
EXP_PART1_Q2
EXP_PART1_Q3
EXP_PART1_Q4
EXP_PART2_Q1
EXP_PART2_Q2
EXP_PART2_Q3
EXP_PART2_Q4
PROGRESS_SUMMARY
ARREAR_TOTAL
ARREAR_DESCRIPTION
AFFECT_FACTORS
OTHER_REMARK
REMARK
TS
LOG_ID → LOG_ID

COST_MATRIX
ID
PROJECT_CODE
*PROJECT_ID
*YEAR
*USED4
OP_ACT_01
OP_ACT_02
OP_ACT_03
OP_ACT_04
OP_ACT_05
OP_ACT_06
OP_ACT_07
OP_ACT_08
OP_ACT_09
OP_ACT_10
OP_ACT_11
OP_ACT_12
OP_ACT_13
OP_ACT_14
OP_ACT_15
OP_ACT_16
OP_ACT_17
OP_ACT_18
OP_ACT_19
OP_ACT_20
OP_ACT_21
OP_ACT_22
OP_ACT_23
OP_ACT_24
OP_ACT_25
OP_ACT_26
OP_ACT_27
OP_ACT_28
OP_ACT_29
OP_ACT_30
OP_ACT_44
OP_ACT_45
TS
LOG_ID → LOG_ID

COST_MATRIX_DATA
ID
PROJECT_CODE
*PROJECT_ID
*YEAR
*USED4
LINE_ITEM_COD → LINE_ITEM_CODE
COST_ADM
COST_01
COST_02
COST_03
COST_04
COST_05
COST_06
COST_07
COST_08
COST_09
COST_10
COST_11
COST_12
COST_13
COST_14
COST_15
COST_16
COST_17
COST_18
COST_19
COST_20
COST_21
COST_22
COST_23
COST_24
COST_25
COST_26
COST_27
COST_28
COST_29
COST_30
COST_44
COST_45
TS
LOG_ID → LOG_ID

Quarterly Report

QT_REPORT
QT_REPORT_ID
*PROJECT_CODE
*YEAR
*HIST_NUM
QT
CONT_QT1
CONT_QT2
CONT_QT3
CONT_QT4
PROJECT_ID
PROJECT_TITLE
VOTE_CODE → VOTE_CODE
RESP_MDA_NAME
PBB_PROGRAM_CODE
PBB_SUB_PROGRAM_CODE
PBB_PROGRAM_NAME
PBB_SUB_PROGRAM_NAME
IMP_AGENCY_NAME
LOC_HQ
LOC_NORTH
LOC_CENTRAL
LOC_SOUTH
LOC_OTHER
LOC_SPECIFIC
PR_PURPOSE
PR_OUTCOME
PR_OUTPUT
START_DATE
END_DATE
START_DATE_REVISED
END_DATE_REVISED
START_DATE_EXTEND
END_DATE_EXTEND
TEC_ORIGINAL
TEC_REVISED
FINANCE_ISSUES_Q1
FINANCE_ISSUES_Q2
FINANCE_ISSUES_Q3
FINANCE_ISSUES_Q4
PERF_ISSUES_Q1
PERF_ISSUES_Q2
PERF_ISSUES_Q3
PERF_ISSUES_Q4
ACTIONS_Q1
ACTIONS_Q2
ACTIONS_Q3
ACTIONS_Q4
OTHER_Q1
OTHER_Q2
OTHER_Q3
OTHER_Q4
REMARK_Q1
REMARK_Q2
REMARK_Q3
REMARK_Q4
PROGRESS_SUMMARY
ARREAR_TOTAL
ARREAR_DESCRIPTION
AFFECT_FACTORS
NAME
MDA
DIVISION
POSITION
TEL
EMAIL
TEMPLATE_VERSION
TEMPLATE_ERRORS
REMARK
TS
LOG_ID → LOG_ID

EXTENSION_REQUEST
ID
PROJECT_CODE
*QT_REPORT_ID
REQ_DATE
REQ_NAME
REQ_POSITION
REQ_DIVISION
REQ_TEL
REQ_EMAIL
START_DATE
END_DATE
START_DATE_REV
END_DATE_REV
TEC
TEC_REQ
REASON
START_DATE_APP
END_DATE_APP
TEC_APP
APP_RESULT
APP_COMMENT
SET_FOR_WITHDRAW_APP
REMARK
TS
LOG_ID → LOG_ID

Ad-hoc Report

AD_HOC
ID
*PROJECT_CODE
*REPORT_ID
PROJECT_ID
EVENT_DATE
REPORT_DATE
TITLE
TYPE
SERIOUSNESS
AUTHOR_NAME
AUTHOR_EMAIL
AUTHOR_TEL
MAIL_TO
MESSAGE
ATTACHMENT1
ATTACHMENT2
ATTACHMENT3
ATTACHMENT4
ATTACHMENT5
ATTACHMENT6
ATTACHMENT7
ATTACHMENT8
STATUS
TS
LOG_ID → LOG_ID

MAIL_GROUP
ID
*MG_NAME
DESCRIPTION
LEVEL
RELATED_VOTES
TS
LOG_ID → LOG_ID

MAIL_LIST
ID
*MAIL_GROUP_ID
*EMAIL
NAME
DESCRIPTION
TS
LOG_ID → LOG_ID

UNMET_OUTCOME
ID
PROJECT_CODE
*QT_REPORT_ID
*USED4
*OUTCOME_ODR
UNMET
CHALLENGES
TS
LOG_ID → LOG_ID

UNMET_OUTPUT
ID
PROJECT_CODE
*QT_REPORT_ID
*USED4
*OUTPUT_ODR
UNMET
CHALLENGES
TS
LOG_ID → LOG_ID

COMPLETION_REPORT
ID
PROJECT_CODE
*QT_REPORT_ID
COM_DATE
FILLED_NAME
FILLED_POSITION
FILLED_DIVISION
FILLED_TEL
FILLED_EMAIL
START_DATE
END_DATE
START_DATE_ACT
END_DATE_ACT
TEC
TEC_ACT
ARREARS
LESSON_LEARNT
SUSTAINABILITY
REMARK
TS
LOG_ID → LOG_ID

Appraisal

APP_DECISION_RESULT
ID
*YEAR
*PROJECT_CODE
PROJECT_ID
INI_DESK_OFFICER
INI_HAS_PIPELINE
FIN_PRIORITY_VOTE
FIN_COMPLIANCE
FIN_DONOR_CONFIRMED
FIN_READINESS
FIN_CRITICAL_INFO
STATUS
TS
LOG_ID → LOG_ID

APP_SCORE_RESULT
ID
*YEAR
*PROJECT_CODE
APP_CATEGORY_ID → APP_ITEM_ID
APP_ITEM_ODR → APP_ITEM_ODR
PROJECT_ID
APP_SCORE
APP_SCORE_DESCRIP
APP_REMARKS
STATUS
TS
LOG_ID → LOG_ID

APP_DECISION_TRANSITION
ID
*YEAR
*PROJECT_CODE
*DECISION_STAGE
PROJECT_ID
PROJECT_STATUS
PART1 _BUDGET
PART2_BUDGET
REMARKS
ACTION_TYPE
COPY_FROM
STATUS
TS
LOG_ID → LOG_ID

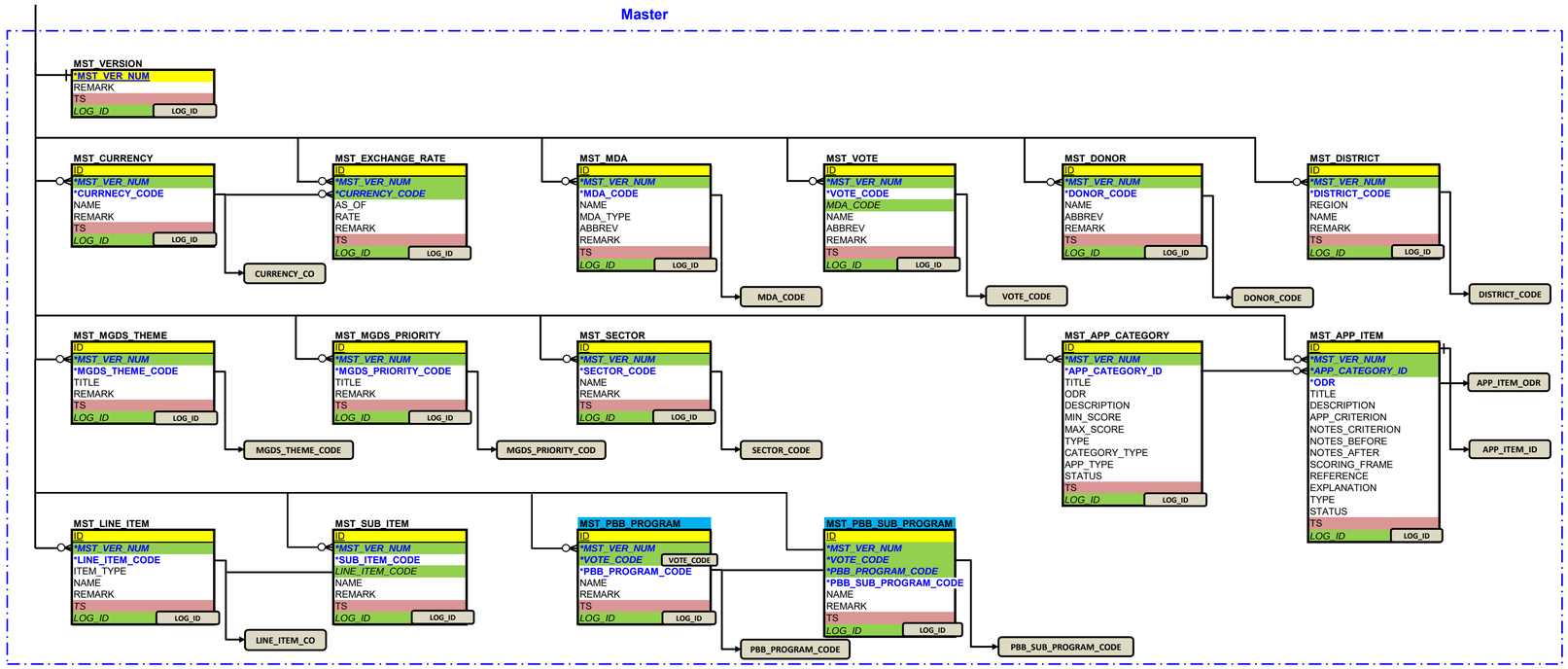
APP_DECISION
ID
*PROJECT_CODE
*YEAR
PROJECT_ID
SATIOSFACTORY
READINESS
JUDGE
JUDGE_BD
REMARK
TS
LOG_ID → LOG_ID

SITE_VALIDATION_LOG
ID
YEAR (Index)
PROJECT_CODE (Index)
DTIME
FILESET_ID
MDA_NAME
IMP_AGENCY
SITE
TEAM_MEMBERS
MET_PERSONS
PROGRESS
CHALLENGE
RECOMMENDATION
TS
LOG_ID → LOG_ID
FILESET_ID

PROJECT_MEMO
ID
*PROJECT_CODE
*YEAR
AS_OF
PROGRESS
CHALLENGE
RECOMMENDATION
MEMO1
MEMO2
MEMO3
MEMO4
TS
LOG_ID → LOG_ID

MM_VOTE_DESC
ID
*YEAR
VOTE_CODE → VOTE_CODE
VOTE_NAME
CONCLUDE_FLAG
MDAS
OTHER_ENTS
OVERALL_COMMENT
START_DTIME_1
END_DTIME_1
VENUE_1
ATTEND_PSIP_1
ATTEND_MDA_1
START_DTIME_2
END_DTIME_2
VENUE_2
ATTEND_PSIP_2
ATTEND_MDA_2
START_DTIME_3
END_DTIME_3
VENUE_3
ATTEND_PSIP_3
ATTEND_MDA_3
START_DTIME_4
END_DTIME_4
VENUE_4
ATTEND_PSIP_4
ATTEND_MDA_4
TS
LOG_ID → LOG_ID

MM_PROJECT_RECORD
ID
*YEAR
*VOTE_CODE
*PROJECT_CODE
DECISION_FLAG
MEMO
TS
LOG_ID → LOG_ID


Master
MST_VERSION
*MST_VER_NUM
REMARK
TS
LOG_ID
LOG_ID
MST_CURRENCY
ID
*MST_VER_NUM
*CURRNECY_CODE
NAME
REMARK
TS
LOG_ID
LOG_ID
CURRENCY_CO
MST_EXCHANGE_RATE
ID
*MST_VER_NUM
*CURRENCY_CODE
AS_OF
RATE
REMARK
TS
LOG_ID
LOG_ID
MST_MDA
ID
*MST_VER_NUM
*MDA_CODE
NAME
MDA_TYPE
ABBREV
REMARK
TS
LOG_ID
LOG_ID
MDA_CODE
MST_VOTE
ID
*MST_VER_NUM
*VOTE_CODE
MDA_CODE
NAME
ABBREV
REMARK
TS
LOG_ID
LOG_ID
VOTE_CODE
MST_DONOR
ID
*MST_VER_NUM
*DONOR_CODE
NAME
ABBREV
REMARK
TS
LOG_ID
LOG_ID
DONOR_CODE
MST_DISTRICT
ID
*MST_VER_NUM
*DISTRICT_CODE
REGION
NAME
REMARK
TS
LOG_ID
LOG_ID
DISTRICT_CODE
MST_MGDS_THEME
ID
*MST_VER_NUM
*MGDS_THEME_CODE
TITLE
REMARK
TS
LOG_ID
LOG_ID
MGDS_THEME_CODE
MST_MGDS_PRIORITY
ID
*MST_VER_NUM
*MGDS_PRIORITY_CODE
TITLE
REMARK
TS
LOG_ID
LOG_ID
MGDS_PRIORITY_COD
MST_SECTOR
ID
*MST_VER_NUM
*SECTOR_CODE
NAME
REMARK
TS
LOG_ID
LOG_ID
SECTOR_CODE
MST_APP_CATEGORY
ID
*MST_VER_NUM
*APP_CATEGORY_ID
TITLE
ODR
DESCRIPTION
MIN_SCORE
MAX_SCORE
TYPE
CATEGORY_TYPE
APP_TYPE
STATUS
TS
LOG_ID
LOG_ID
MST_APP_ITEM
ID
*MST_VER_NUM
*APP_CATEGORY_ID
*ODR
TITLE
DESCRIPTION
APP_CRITERION
NOTES_CRITERION
NOTES_BEFORE
NOTES_AFTER
SCORING_FRAME
REFERENCE
EXPLANATION
TYPE
STATUS
TS
LOG_ID
LOG_ID
APP_ITEM_ODR
APP_ITEM_ID
MST_LINE_ITEM
ID
*MST_VER_NUM
*LINE_ITEM_CODE
ITEM_TYPE
NAME
REMARK
TS
LOG_ID
LOG_ID
LINE_ITEM_CO
MST_SUB_ITEM
ID
*MST_VER_NUM
*SUB_ITEM_CODE
LINE_ITEM_CODE
NAME
REMARK
TS
LOG_ID
LOG_ID
MST_PBB_PROGRAM
ID
*MST_VER_NUM
*VOTE_CODE
*PBB_PROGRAM_CODE
NAME
REMARK
TS
LOG_ID
LOG_ID
VOTE_CODE
PBB_PROGRAM_CODE
MST_PBB_SUB_PROGRAM
ID
*MST_VER_NUM
*VOTE_CODE
*PBB_PROGRAM_CODE
*PBB_SUB_PROGRAM_CODE
NAME
REMARK
TS
LOG_ID
LOG_ID
PBB_SUB_PROGRAM_CODE

USER
ID
*LOGIN_ID
FIRST_NAME
LAST_NAME
ROLE
VOTE_CODE
PASS
PASS_CHANGE
PASS_CHANGE_FLAG
STATUS
GENDER
ORGANIZATION
POSITION
ADDRESS
POBOX
EMAIL1
EMAIL2
TEL1
TEL2
CELL1
CELL2
LAST_LOGIN_DATE
LOGIN_COUNT
TS
LOG
ID
LOGIN_ID
*USER_ID
*LOGIN_TIME
LOGOUT_TIME
IP_ADDRESS
RESULT
REMARK
*TS
LOG_ID
CONST1
ID
*SECTION
*NAME
VALUE
TS
LOG_ID
LOG_ID
PSIP_OPERATION
ID
CURRENT_YEAR
PSIP_STATUS
SUBMISSION_DEADLINE
TS
LOG_ID
LOG_ID
ANNOUNCEMENT
ID
ODR
VALUE
REMARK
TS
LOG_ID
LOG_ID
SUBMISSION
ID
PROJECT_CODE
PROJECT_TITLE
VOTE_CODE
REP_MINISTRY_CODE
TEMPATE_YEAR
TEMPLATE_VERSION
TEMPLATE_TYPE
FILE_PATH
FILE_SIZE
FILE_NAME
FILE_TIMESTAMP
MODE
FLAG_SUBMITTED
FLAG_CHECKED
FLAG_LOADED
NUM_ERRORS
RESULT1
MESSAGE
TS
LOG_ID
LOG_ID
VOTE_REWRITE
ID
PROJECT_CODE
YEAR
FROM_VOTE_CODE
TO_VOTE_CODE
TS
LOG_ID
LOG_ID
FILE_SET
ID
FS_NAME
PARENT_FILESET_ID
TS
LOG_ID
LOG_ID
FILESET_ID
FILE
ID
*FILESET_ID
*ODR
FNAME
MIME_TYPE
MEMO
TS
LOG_ID
LOG_ID
SCHEDULED_JOB
ID
JOB_TITLE
JOB_DESC
SCHEDULE_DTIME
MAX_DURATION
OPERATION
STATUS
START_DTIME
FINISH_DTIME
RESULT
TS
LOG_ID
LOG_ID

{{ **PSIP_OPERATION**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key	0.75
2	CURRENT_YEAR	VARCHAR(20)	NOT NULL	Current Year	'2016'		0.74
3	PSIP_STATUS	VARCHAR(20)		PSIP Status	'O'	See below	0.74
4	SUBMISSION_DEADLINE	VARCHAR(20)		Submission Deadline	'2016-10-31'		0.95
5	TS	TIMESTAMP					
6	*LOG_ID*	INT		Log ID	10223		

}}

{{ **PROJECT_CODE**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key	0.75
2	***PROJECT_CODE**	VARCHAR(20)	NOT NULL	Project Code	'14-320-001'		
3	EXT_CODE1	VARCHAR(20)		External system's project code 1		UPC	0.96
4	EXT_CODE2	VARCHAR(20)		External system's project code 2		IFMIS CODE?	0.96
5	EXT_CODE3	VARCHAR(20)		External system's project code 3		AMP CODE?	0.96
6	EXT_CODE4	VARCHAR(20)		External system's project code 4			0.96
7	REMARK	TEXT		Remark			0.95
8	TS	TIMESTAMP					
9	*LOG_ID*	INT		Log ID	10223		

}}

{{ **PROJECT**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	PROJECT_ID	INT	PRIMARY KEY AUTO_INCREMEN	Project ID	243	Surrogate key	
2	***PROJECT_CODE**	VARCHAR(20)	NOT NULL	Project Code	'14-320-001'		
3	***YEAR**	INT	NOT NULL	Year	2015	2015 --> 2015/16	0.74
4	***HIST_NUM**	INT	NOT NULL	History number	0	-1=Loader, 0=Current, 1,2,3…=Old	0.74
5	*MST_VER_NUM*	INT	NOT NULL	Master version number	110		
6	PSIP_PROFILE_CODE	VARCHAR(20)		PSIP profile code	143201109001	See below	
7	PROJECT_TITLE	VARCHAR(400)	NOT NULL	Project Title	'Construction of XXX'		
8	PROJECT_TYPE	VARCHAR(3)		Project type	1	See below	0.82
9	PROJECT_STATUS	VARCHAR(10)		Project status (Latest)	'O'		
10	PROJECT_READINESS	VARCHAR(400)		Project rediness	'1,2,5,6,10'	Encoded, See below	
11	PROJECT_READINESS_OTH	VARCHAR(1000)		Project rediness, other descriptic	'Suggested by XXX'		
12	FLAGSHIP	VARCHAR(10)		Flagship			3.02.08
13	PROJECT_SOURCE	VARCHAR(3)		Project origin	1	See below	0.82
14	PROGRAM_TITLE	VARCHAR(400)		Affiliating Programme Title	'YYY Programme'		
15	PBB_APPLICABILITY	VARCHAR(10)		PBB Applicability	'Yes'	'Yes' or 'No'	0.84
16	PBB_PROGRAM	VARCHAR(400)		PBB Program name	'A Program'		0.84
17	*PBB_PROGRAM_CODE*	VARCHAR(4)		PBB Program code	'20'		0.95
18	*PBB_SUB_PROGRAM_CODE*	VARCHAR(4)		PBB Sub Program code	'25'		0.95
19	MGDS_ALIGN	VARCHAR(10)		Alignment to MGDS	'Yes'	'Yes' or 'No'	
20	*THEME_CODE*	VARCHAR(10)		MGDS theme code	110		
21	*PRIORITY_CODE*	VARCHAR(10)		MGDS priority code	410		
22	*BP_CODE*	VARCHAR(10)		Budget program code	03	Not used since Ver.2	
23	*SECTOR_CODE*	VARCHAR(10)		Sector code	104		
24	HAS_SECTOR_POLICY	VARCHAR(10)		Has Sector Policy?	'Yes'	'Yes' or 'No'	0.73
25	SECTOR_POLICY	VARCHAR(400)		Sector Policy	'The policy is …'		0.73
26	*VOTE_CODE*	VARCHAR(10)		Vote code	320		
27	*REP_MINISTRY_CODE*	VARCHAR(10)		Representing ministry code	320		
28	IMP_AGENCY_NAME	VARCHAR(200)		Implementing ministry name	'ABC University'		
29	PRIORITY_NO	VARCHAR(3)		Priority within the vote	1		0.82
30	PRIORITY_TOTAL	VARCHAR(3)		Total number for priority	10		0.82
31	TEC	DECIMAL(20,3)		Total estimated cost	123,456,789,012	TEC and	
32	TEC_YEAR_APPROVAL	VARCHAR(5)		TEC year approval	2015	TEC_DATE_APPROVAL keep the	0.82
33	TEC_ORIG	DECIMAL(20,3)		Total estimated cost (original)	222,333,444,55	latest	0.80
34	TEC_YEAR_APPROVAL_ORI	VARCHAR(5)		TEC year approval (original)	2014	XXX_ORIG keep the original	0.82
35	YEAR_FIRST_SUBMITTED	VARCHAR(5)		Year of 1st submitted	2014		0.82
36	YEAR_FIRST_BUDGETTED	VARCHAR(5)		Year of 1st budgetted	2015		0.82
37	YEAR_FIRST_FUNDED	VARCHAR(5)		Year of 1st funded	2015		0.82
38	PART1_TOTAL	DECIMAL(20,3)		Part1 total	123,456,789,012		
39	PART2_TOTAL	DECIMAL(20,3)		Part2 total	123,456,789,012		
40	START_DATE	VARCHAR(10)		Start date	'201404'		0.85
41	END_DATE	VARCHAR(10)		End date	'201703'		0.85
42	START_DATE_PREV	VARCHAR(10)		Start date (Previous)	'201304'		0.85
43	END_DATE_PREV	VARCHAR(10)		End date (Previous)	'201603'		0.85
44	CONTRACT	VARCHAR(10)		Contract	'Y'		
45	CONTRACT_NUM	VARCHAR(3)		Number of contracts	2		0.82
46	CONTRACT_DESC	VARCHAR(2000)		Contract description	'Amount: $30,000 …'		
47	LOCATION	VARCHAR(1000)		Location	################		
48	SPECIFIC_LOCATION	VARCHAR(500)		Specific Location	'Traditional Authority'		0.95
49	IFMIS_CODE	VARCHAR(10)		IFMIS code	067		
50	AMP_CODE	VARCHAR(20)		AMP code	8722612610804		
51	PART1_EXP_PAST_FY	DECIMAL(20,3)		FY2014/15 Expenditure PART I	123,456,789,012	Proposal for applied FY (On-Going)	0.74
52	PART2_EXP_PAST_FY	DECIMAL(20,3)		FY2014/15 Expenditure PART II	123,456,789,012	Proposal for applied FY (On-Going)	0.74
53	PART1_APP_THIS_FY	DECIMAL(20,3)		FY2015/16 Approved PART I	123,456,789,012	Proposal for applied FY (On-Going)	0.74
54	PART2_APP_THIS_FY	DECIMAL(20,3)		FY2015/16 Approved PART II	123,456,789,012	Proposal for applied FY (On-Going)	0.74
55	PART1_REQUEST_NEXT_FY	DECIMAL(20,3)		FY2016/17 Request PART I	123,456,789,012	Proposal for applied FY (New/On-G	0.74
56	PART2_REQUEST_NEXT_FY	DECIMAL(20,3)		FY2016/17 Request PART II	123,456,789,012	Proposal for applied FY (New/On-G	0.74
57	ISSUES_PAST_FY	TEXT		Issues & Challenges of past FY		Proposal for applied FY (On-Going)	0.74
58	ISSUES_THIS_FY	TEXT		Issues & Challenges of this FY		Proposal for applied FY (On-Going)	0.74
59	TARGET_NEXT_FY	TEXT		Target of next FY			0.74
60	STATUS_SUBMITTED	VARCHAR(10)		Status (On submission)	'O'	See below	3.00
61	STATUS_PSIP_RECOMMEND	VARCHAR(10)		Status (PSIP recommendded)	'O'	See below	3.00
62	STATUS_BUDGET_APPROVE	VARCHAR(10)		Status (Budget approved)	'O'	See below	3.00
63	STATUS_MIDYEAR_REVISED	VARCHAR(10)		Status (Mid-year revised)	'O'	See below	3.00
64	PART1_SUBMITTED	DECIMAL(20,3)		Part1 (On submission)	333,444,555		3.00
65	PART1_PSIP_RECOMMENDE	DECIMAL(20,3)		Part1 (PSIP recommendded)	333,444,555		3.00
66	PART1_BUDGET_APPROVEI	DECIMAL(20,3)		Part1 (Budget approved)	333,444,555		3.00
67	PART1_MIDYEAR_REVISED	DECIMAL(20,3)		Part1 (Mid-year revised)	333,444,555		3.00
68	PART2_SUBMITTED	DECIMAL(20,3)		Part2 (On submission)	111,223,333		3.00
69	PART2_PSIP_RECOMMENDE	DECIMAL(20,3)		Part2 (PSIP recommendded)	111,223,333		3.00
70	PART2_BUDGET_APPROVEI	DECIMAL(20,3)		Part2 (Budget approved)	111,223,333		3.00
71	PART2_MIDYEAR_REVISED	DECIMAL(20,3)		Part2 (Mid-year revised)	111,223,333		3.00
72	APP_PSIP_COMMENT	TEXT		Appraisal PSIP comment			3.00
73	TEMPLATE_VERSION	VARCHAR(10)		Template version	2.0.33		0.74
74	TEMPLATE_TYPE	VARCHAR(1)		Template type	'N' or 'O'		0.74
75	TEMPLATE_ERRORS	INT		Template errors	2		0.98
76	MEMO	TEXT		Memo	'Merged into project …'		3.01.06
77	*FILESET_ID*	INT		Fileset ID	999	Fileset for attachments	3.01.07
78	TS	TIMESTAMP					
79	*LOG_ID*	INT		Log ID	10223		

}}

~~**PROFILE_CODE**~~
~~i.e.) Supposed code format~~
~~**YYVVVTFPPSSS**~~
~~Where:~~
~~**YY**: Year~~
~~**VVV**: Vote code~~
~~**T**: Project Type~~
~~1 = Infrastructure~~

PROJECT_TYPE
1 = Development/Infrastructure
2 = Development/Service
3 = Development/Hybrid
4 = Recurrent

PROJECT_REDINESS (multi-choice)

{{ **CONTACT**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23		
4	*ROLE_CODE	VARCHAR(10)	NOT NULL	Role	'PM'		0.74
5	ROLE_NAME	VARCHAR(100)		Role name	'Project Auditor'	Empty if other than 'OT	0.74
6	NAME	VARCHAR(100)		Name	'Thomas Cruise'		
7	MDA	VARCHAR(100)		MDA	'Ministry of Health'		
8	ORGANIZATION	VARCHAR(100)		Organization	'Malawi University'		0.95
9	DIVISION	VARCHAR(100)		Division/Section/Unit	'Research division'		
10	POSITION	VARCHAR(100)		Position	'Chief accountant'		
11	TEL	VARCHAR(100)		Telephone	'09991234567'		
12	EMAIL	VARCHAR(100)		Email	'xxx@yyy.zzz'		
13	REMARK	VARCHAR(100)		Remark			
14	TS	TIMESTAMP					
15	*LOG_ID*	INT		Log ID	10223		

}}

ROLE_CODE
'PM' = Project Manager
'PC' = Project Coordinator
'PB' = Programme Manager (PBB)
'RB' = Responsible Officer (Budgeting)
'RM' = Responsible Officer (M&E)
'PA' = Project Accountant
'PF' = Project Forcal Person
'CO' = Controlling Officer
'OT' = Other --> ROLE_NAME is required

{{ **OUTLINE**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23	
4	BACKGROUND	TEXT		Background		
5	RATIONALE	TEXT		Rationale		
6	DESC_GOAL	TEXT		Overall goal		
7	DESC_PURPOSE	TEXT		Purpose		
8	DESC_OUTCOMES	TEXT		Outcomes		
9	DESC_OUTPUTS	TEXT		Outputs		
10	DESC_COMPONENTS	TEXT		Components (Ver.1.5)		
11	DESC_ACTIVITIES	TEXT		Activities		
12	BENEFICIARIES	TEXT		Beneficialies		
13	IMPACT_OTHER_PROJECT	TEXT		Impact on projects		
14	IMPACT_BUSINESS	TEXT		Impact on business sector		
15	IMPACT_COMMUNITY	TEXT		Impact on proverty and Social		
16	IMPACT_ENVIRONMENT	TEXT		Impact on environment		
17	COST_BENEFIT	TEXT		Cost benefit analysis		
17	FINANTIAL_SUSTAINABILIT	TEXT		Finantial Sustainability		
18	INST_SUSTAINABILITY	TEXT		Institutional Sustainability		
19	INST_FRAMEWORK	TEXT		Institutional framework		
20	TS	TIMESTAMP				
21	*LOG_ID*	INT		Log ID	10223	

}}

0.7

{{ **DESC_LOGFRAME**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23	
4	PROJECT_PURPOSE	VARCHAR(2000)		Project purpose	'The purpose is ...'	
5	REMARK	VARCHAR(100)		Remark		
6	TS	TIMESTAMP				
7	*LOG_ID*	INT		Log ID	10223	

}}

{{ **OUTCOME**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23	
4	***OUTCOME_ODR**	VARCHAR(5)	NOT NULL	Order (A, B, C …)	'A'	
5	DESCRIPTION	VARCHAR(1000)		Descripton	'Outcome A is ...'	
6	REMARK	VARCHAR(100)		Remark		
7	TS	TIMESTAMP				
8	*LOG_ID*	INT		Log ID	10223	

}}

{{ **OUTPUT**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23	
4	***OUTPUT_ODR**	VARCHAR(5)	NOT NULL	Order (1, 2, 3 …)	'1'	
5	DESCRIPTION	VARCHAR(1000)		Descripton	'Output 1 is ...'	
6	REMARK	VARCHAR(100)		Remark		
7	TS	TIMESTAMP				
8	*LOG_ID*	INT		Log ID	10223	

}}

{{ **REL_OUTPUT_OUTCOME** 0.81

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23		
4	***OUTPUT_ODR**	VARCHAR(5)	NOT NULL	Order (1, 2, 3 …)	'1'		0.81
5	OUTCOME_ODRS	VARCHAR(5)	NOT NULL	Order (A, B, C …)	'AB'		0.81
6	TS	TIMESTAMP					
7	*LOG_ID*	INT		Log ID	10223		

}}

{{ **ACTIVITY**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23	
4	***OUTPUT_ODR**	VARCHAR(5)	NOT NULL	Order (1, 2, 3 …)	'1'	
5	***ACTIVITY_ODR**	VARCHAR(5)	NOT NULL	Order (1, 2, 3 …)	'1'	
6	DESCRIPTION	VARCHAR(1000)		Descripton	'Activity 1 is ...'	
7	TIME_FRAME	VARCHAR(1000)		Time frame		For v1.5 compatibility
8	COST	VARCHAR(100)		Cost		For v1.5 compatibility
9	REMARK	VARCHAR(100)		Remark		
10	TS	TIMESTAMP				
11	*LOG_ID*	INT		Log ID	10223	

}}

{{ **ME_FRAMEWORK**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23	
4	ME_FRAMEWORK	VARCHAR(2000)		M&E framework	'Ministry of Education does ..'	
5	REMARK	VARCHAR(100)		Remark		
6	TS	TIMESTAMP				
7	*LOG_ID*	INT		Log ID	10223	

}}

{{ **OUTCOME_INDICATOR**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23	See below	0.87
4	***USED4**	VARCHAR(5)	NOT NULL	Used for (What is this for?)	'Q4'	See below	
5	***ODR**	VARCHAR(5)		Order	'1'		
6	***FOR_FY**	VARCHAR(5)		For FY	'2017'		4.00.02
7	OUTCOME_ODR	VARCHAR(5)		Outcome Order (A, B, C …)	'A'		0.80
8	INDICATOR	VARCHAR(1000)		Indicator	'Indicator 1 is ...'		
9	BASELINE	VARCHAR(1000)		Baseline	'Baseline is ...'		
10	ENDLINE_TARGET	VARCHAR(1000)		Endline Target	'Endline is ...'		
11	MOV	VARCHAR(1000)		Means Of Verification	'Verification is ...'		
12	REMARK	VARCHAR(100)		Remark			
13	TS	TIMESTAMP					
14	*LOG_ID*	INT		Log ID	10223		

}}

{{ **OUTCOME_TARGET**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23	See below	0.87
4	***USED4**	VARCHAR(5)	NOT NULL	Used for (What is this for?)	'Q4'	See below	
5	***ODR**	VARCHAR(5)		Order	'1'		
6	***TERM_TYPE**	VARCHAR(5)		Term type	'Q'		
7	***TERM_AT**	VARCHAR(10)		Term at	'2015Q2'		
8	INITIAL_TARGET	VARCHAR(1000)		Term target	'Build 100 hauses'		0.74
9	TARGET	VARCHAR(1000)		Term target	'Build 90 hauses'		0.74
10	REMARK	VARCHAR(100)		Remark			
11	TS	TIMESTAMP					
12	*LOG_ID*	INT		Log ID	10223		

}}

{{ **OUTPUT_INDICATOR**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23	See below	0.87
4	***USED4**	VARCHAR(5)	NOT NULL	Used for (What is this for?)	'Q4'	See below	
5	***ODR**	VARCHAR(5)		Order	'1'		
6	***FOR_FY**	VARCHAR(5)		For FY	'2017'		4.00.02
7	OUTPUT_ODR	VARCHAR(5)		Output Order (1, 2, 3 …)	'1'		0.80
8	INDICATOR	VARCHAR(1000)		Indicator	'Indicator 1 is ...'		
9	BASELINE	VARCHAR(1000)		Baseline	'Baseline is ...'		
10	ENDLINE_TARGET	VARCHAR(1000)		Endline Target	'Endline is ...'		
11	MOV	VARCHAR(1000)		Means Of Verification	'Verification is ...'		
12	REMARK	VARCHAR(100)		Remark			
13	TS	TIMESTAMP					
14	*LOG_ID*	INT		Log ID	10223		

}}

{{ **OUTPUT_TARGET**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23	See below	0.87
4	***USED4**	VARCHAR(5)	NOT NULL	Used for (What is this for?)	'Q4'	See below	
5	***ODR**	VARCHAR(5)		Order	'1'		
6	***TERM_TYPE**	VARCHAR(5)		Term type	'Q'		
7	***TERM_AT**	VARCHAR(10)		Term at	'2015Q2'		
8	INITIAL_TARGET	VARCHAR(1000)		Term target	'Build 100 hauses'	Annual?	0.74
9	TARGET	VARCHAR(1000)		Term target	'Build 90 hauses'	Annual?	0.74
10	REMARK	VARCHAR(100)		Remark			
11	TS	TIMESTAMP					
12	*LOG_ID*	INT		Log ID	10223		

}}

{{ **OUTPUT_ACHIEVEMENT**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23	See below	0.87
4	***USED4**	VARCHAR(5)		Used for (What is this for?)	'Q4'	See below	
5	***ODR**	VARCHAR(5)		Order	'1'		
6	***TERM_TYPE**	VARCHAR(5)		Term type	'Q'		
7	***TERM_AT**	VARCHAR(10)		Term at	'2015Q2'		
8	EXP_PART1	DECIMAL(20,3)		Expenditure Part1			0.80
9	EXP_PART2	DECIMAL(20,3)		Expenditure Part2			0.80
10	ACHIEVEMENT	TEXT					0.74
11	REMARK	VARCHAR(100)		Remark			
12	TS	TIMESTAMP					
13	*LOG_ID*	INT		Log ID	10223		

}}

{{ **FINANCE_SUMMARY** 0.80

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	0.80

1	ID	INT	PRIMARY KEY AUTO_INCREMEN	ID	22	Surrogate key	0.80
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	0.80
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23	See below	0.87
4	***USED4**	VARCHAR(5)		Used for (What is this for?)	'Q4'	See below	0.80
5	***TERM_TYPE**	VARCHAR(5)		Term type	'Y'		
6	***TERM_AT**	VARCHAR(10)		Term at	'2015'		
7	CUM_EXP_TO_YEAR	VARCHAR(10)		Cumlative Expenditure to year			0.80
8	CUM_EXP_PART1	DECIMAL(20,3)		Cumlative Expenditure PART 1			0.80
9	CUM_EXP_PART2	DECIMAL(20,3)		Cumlative Expenditure PART 2			0.80
10	FUND_PART1_APPROVED	DECIMAL(20,3)		Approved Provisoin / Commitment PART 1			0.80
11	FUND_PART2_APPROVED	DECIMAL(20,3)		Approved Provisoin / Commitment PART 2			0.80
12	FUND_PART1_REVISED	DECIMAL(20,3)		Revised Provisoin / Commitment PART 1			0.80
13	FUND_PART2_REVISED	DECIMAL(20,3)		Revised Provisoin / Commitment PART 2			0.80
14	FUND_PART1_ACTUAL	DECIMAL(20,3)		Actual Funding/Disbursement PART 1			0.80
15	FUND_PART2_ACTUAL	DECIMAL(20,3)		Actual Funding/Disbursement PART 2			0.80
16	FUND_P1_DISBURSE_Q1	DECIMAL(20,3)		Part1 disbursement (Q1)			0.95
17	FUND_P1_DISBURSE_Q2	DECIMAL(20,3)		Part1 disbursement (Q2)			0.95
18	FUND_P1_DISBURSE_Q3	DECIMAL(20,3)		Part1 disbursement (Q3)			0.95
19	FUND_P1_DISBURSE_Q4	DECIMAL(20,3)		Part1 disbursement (Q4)			0.95
20	FUND_P1_OFFBDG_Q1	DECIMAL(20,3)		Part1 off budget (Q1)			0.95
21	FUND_P1_OFFBDG_Q2	DECIMAL(20,3)		Part1 off budget (Q2)			0.95
22	FUND_P1_OFFBDG_Q3	DECIMAL(20,3)		Part1 off budget (Q3)			0.95
23	FUND_P1_OFFBDG_Q4	DECIMAL(20,3)		Part1 off budget (Q4)			0.95
24	FUND_P2_Q1	DECIMAL(20,3)		Part2 funding (Q1)			0.95
25	FUND_P2_Q2	DECIMAL(20,3)		Part2 funding (Q2)			0.95
26	FUND_P2_Q3	DECIMAL(20,3)		Part2 funding (Q3)			0.95
27	FUND_P2_Q4	DECIMAL(20,3)		Part2 funding (Q4)			0.95
28	EXP_PART1_Q1	DECIMAL(20,3)		Expenditure Part1 (Q1)			0.80
29	EXP_PART1_Q2	DECIMAL(20,3)		Expenditure Part1 (Q2)			0.80
30	EXP_PART1_Q3	DECIMAL(20,3)		Expenditure Part1 (Q3)			0.80
31	EXP_PART1_Q4	DECIMAL(20,3)		Expenditure Part1 (Q4)			0.80
32	EXP_PART2_Q1	DECIMAL(20,3)		Expenditure Part2 (Q1)			0.80
33	EXP_PART2_Q2	DECIMAL(20,3)		Expenditure Part2 (Q2)			0.80
34	EXP_PART2_Q3	DECIMAL(20,3)		Expenditure Part2 (Q3)			0.80
35	EXP_PART2_Q4	DECIMAL(20,3)		Expenditure Part2 (Q4)			0.80
36	PROGRESS_SUMMARY	TEXT		Progress summary			3.02.01
37	ARREAR_TOTAL	DECIMAL(20,3)		Arrear Total			0.80
38	ARREAR_DESCRIPTION	TEXT		Arrear description			0.80
39	AFFECT_FACTORS	TEXT		Factors and issues affecting implementation			0.80
40	OTHER_REMARK	TEXT		Any other remarks			3.03
41	REMARK	VARCHAR(100)		Remark			0.80
42	TS	TIMESTAMP					0.80
43	*LOG_ID*	INT		Log ID	10223		0.80

}}

TERM_TYPE
'Y' = Year
'2Y' = Bi-Year
'Q' = Quarter
'2Q' = Bi-Quarter
'M' = Month
'2M' = Bi-Month
'CU'=Cummlative

TERM_AT
- In case TERM_TYPE='Y' or '2Y'
  '2015'
- In case TERM_TYPE='Q' or '2Q'
  '2015Q1' --> 2015 Q1
- In case TERM_TYPE='M' or '2M'
  '201506' --> 2015 June
- In case TERM_TYPE='CU'
  '2013' --> Cummulative achievement asof 2013/14

USED4
'T'=Total Project period (New Proposal)
'A'=Annual (On-Going proposal)
'Q'=Quarterly report

PROJECT_ID
There are 2 cases as below.
[Annual Proposal]
PROJECT.PROJECT_ID
[Quarterly Report]
QT_REPORT.QT_REPORT_ID

0.86b
0.74
0.74

{{ **FUND_SOURCE**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREME	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23		
4	***DONOR_CODE**	VARCHAR(5)	NOT NULL	Donor code	'20'	'00' = GoM	
5	DISP_ODR	VARCHAR(5)		Donor order (for display)	'1'		
6	***FUND_TYPE**	VARCHAR(5)		Fund type (Grant|Loan)	'Grant'	Added as a unique k	0.95
7	ON_OFF	VARCHAR(5)		On/Off budget	'On'		
8	FUND_START_YEAR	VARCHAR(8)		Funding start year	2015 or 20150701		0.95
9	FUND_END_YEAR	VARCHAR(8)		Funding end year	2016 or 20160630		0.95
10	SECURED	VARCHAR(5)		Secured? (Y|N)	'Y'		
11	*CURRENCY_CODE*	VARCHAR(5)		Currency code	'USD'		
12	EXCHANGE_RATE	DECIMAL(20,9)		Exchange rate	409.0219		
13	AMOUNT	DECIMAL(20,3)		Fund amount (total)	10,000,000	In specified currency	
14	REMARK	VARCHAR(1000)		Remark	'Information about ..'		0.95
15	TS	TIMESTAMP					
16	*LOG_ID*	INT		Log ID	10223		

}}

{{ **FUND_OUTLAY**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREME	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23		
4	***DONOR_CODE**	VARCHAR(5)	NOT NULL	Donor code	'18'	'00'=GoM, '**'=Part1 total	
5	***FUND_TYPE**	VARCHAR(5)		Fund type (Grant|Loan)	'Grant'	Added as a unique k	0.99
6	***YEAR**	VARCHAR(5)		Year	2015	2015 --> 2015/16	0.82
7	EXCHANGE_RATE	DECIMAL(20,9)		Exchange rate	409.0219		
8	AMOUNT	DECIMAL(20,3)		Fund amount	2,562,330		
9	TS	TIMESTAMP					
10	*LOG_ID*	INT		Log ID	10223		

}}

{{ **FINANCE_MISC**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREME	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23		
4	FINANCE_OTHER	VARCHAR(2000)		Others Highlight …			0.92
5	TS	TIMESTAMP					
6	*LOG_ID*	INT		Log ID	10223		

}}

{{ **COST_MATRIX**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREME	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23		
4	***YEAR**	VARCHAR(5)	NOT NULL	Fiscal year	2015	Ignore if Usage='T'	
5	***USED4**	VARCHAR(5)	NOT NULL	Used for (What is this for?)	'Q4'	See below	
6	OP_ACT_01	VARCHAR(10)		OUTPUT-ACTIVITY 01	'1-1'		
7	OP_ACT_02	VARCHAR(10)		OUTPUT-ACTIVITY 02	'1-1'		
8	OP_ACT_03	VARCHAR(10)		OUTPUT-ACTIVITY 03	'1-1'		
9	OP_ACT_04	VARCHAR(10)		OUTPUT-ACTIVITY 04	'1-1'		
10	OP_ACT_05	VARCHAR(10)		OUTPUT-ACTIVITY 05	'1-1'		
11	OP_ACT_06	VARCHAR(10)		OUTPUT-ACTIVITY 06	'1-1'		
12	OP_ACT_07	VARCHAR(10)		OUTPUT-ACTIVITY 07	'1-1'		
13	OP_ACT_08	VARCHAR(10)		OUTPUT-ACTIVITY 08	'1-1'		
14	OP_ACT_09	VARCHAR(10)		OUTPUT-ACTIVITY 09	'1-1'		
15	OP_ACT_10	VARCHAR(10)		OUTPUT-ACTIVITY 10	'1-1'		
16	OP_ACT_11	VARCHAR(10)		OUTPUT-ACTIVITY 11	'1-1'		
17	OP_ACT_12	VARCHAR(10)		OUTPUT-ACTIVITY 12	'1-1'		
18	OP_ACT_13	VARCHAR(10)		OUTPUT-ACTIVITY 13	'1-1'		
19	OP_ACT_14	VARCHAR(10)		OUTPUT-ACTIVITY 14	'1-1'		
20	OP_ACT_15	VARCHAR(10)		OUTPUT-ACTIVITY 15	'1-1'		
21	OP_ACT_16	VARCHAR(10)		OUTPUT-ACTIVITY 16	'1-1'		
22	OP_ACT_17	VARCHAR(10)		OUTPUT-ACTIVITY 17	'1-1'		
23	OP_ACT_18	VARCHAR(10)		OUTPUT-ACTIVITY 18	'1-1'		
24	OP_ACT_19	VARCHAR(10)		OUTPUT-ACTIVITY 19	'1-1'		
25	OP_ACT_20	VARCHAR(10)		OUTPUT-ACTIVITY 20	'1-1'		
26	OP_ACT_21	VARCHAR(10)		OUTPUT-ACTIVITY 21	'1-1'		
27	OP_ACT_22	VARCHAR(10)		OUTPUT-ACTIVITY 22	'1-1'		
28	OP_ACT_23	VARCHAR(10)		OUTPUT-ACTIVITY 23	'1-1'		
29	OP_ACT_24	VARCHAR(10)		OUTPUT-ACTIVITY 24	'1-1'		
30	OP_ACT_25	VARCHAR(10)		OUTPUT-ACTIVITY 25	'1-1'		
31	OP_ACT_26	VARCHAR(10)		OUTPUT-ACTIVITY 26	'1-1'		
32	OP_ACT_27	VARCHAR(10)		OUTPUT-ACTIVITY 27	'1-1'		
33	OP_ACT_28	VARCHAR(10)		OUTPUT-ACTIVITY 28	'1-1'		
34	OP_ACT_29	VARCHAR(10)		OUTPUT-ACTIVITY 29	'1-1'		
35	OP_ACT_30	VARCHAR(10)		OUTPUT-ACTIVITY 30	'1-1'		
36	OP_ACT_31	VARCHAR(10)		OUTPUT-ACTIVITY 31	'1-1'		1
37	OP_ACT_32	VARCHAR(10)		OUTPUT-ACTIVITY 32	'1-1'		1
38	OP_ACT_33	VARCHAR(10)		OUTPUT-ACTIVITY 33	'1-1'		1
39	OP_ACT_34	VARCHAR(10)		OUTPUT-ACTIVITY 34	'1-1'		1
40	OP_ACT_35	VARCHAR(10)		OUTPUT-ACTIVITY 35	'1-1'		1
41	OP_ACT_36	VARCHAR(10)		OUTPUT-ACTIVITY 36	'1-1'		1
42	OP_ACT_37	VARCHAR(10)		OUTPUT-ACTIVITY 37	'1-1'		1
43	OP_ACT_38	VARCHAR(10)		OUTPUT-ACTIVITY 38	'1-1'		1
44	OP_ACT_39	VARCHAR(10)		OUTPUT-ACTIVITY 39	'1-1'		1
45	OP_ACT_40	VARCHAR(10)		OUTPUT-ACTIVITY 40	'1-1'		1
46	OP_ACT_41	VARCHAR(10)		OUTPUT-ACTIVITY 41	'1-1'		1
47	OP_ACT_42	VARCHAR(10)		OUTPUT-ACTIVITY 42	'1-1'		1
48	OP_ACT_43	VARCHAR(10)		OUTPUT-ACTIVITY 43	'1-1'		1
49	OP_ACT_44	VARCHAR(10)		OUTPUT-ACTIVITY 44	'1-1'		1
50	OP_ACT_45	VARCHAR(10)		OUTPUT-ACTIVITY 45	'1-1'		1
51	TS	TIMESTAMP					
52	*LOG_ID*	INT		Log ID	10223		

}}

{{ **COST_MATRIX_DATA**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREME	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***PROJECT_ID**	INT	NOT NULL	Project ID	23		
4	***YEAR**	VARCHAR(5)	NOT NULL	Fiscal year	2015	Ignore if Usage='T'	
5	***USED4**	VARCHAR(5)	NOT NULL	Usage code (What is this	'T'	See below	
6	***LINE_ITEM_CODE**	VARCHAR(10)	NOT NULL	Budget item code	'01'		0.7
7	COST_ADM	DECIMAL(20,3)		Cost of Administrative			
8	COST_01	DECIMAL(20,3)		Cost of OP_ACT_01			
9	COST_02	DECIMAL(20,3)		Cost of OP_ACT_02			
10	COST_03	DECIMAL(20,3)		Cost of OP_ACT_03			
11	COST_04	DECIMAL(20,3)		Cost of OP_ACT_04			
12	COST_05	DECIMAL(20,3)		Cost of OP_ACT_05			
13	COST_06	DECIMAL(20,3)		Cost of OP_ACT_06			
14	COST_07	DECIMAL(20,3)		Cost of OP_ACT_07			
15	COST_08	DECIMAL(20,3)		Cost of OP_ACT_08			
16	COST_09	DECIMAL(20,3)		Cost of OP_ACT_09			
17	COST_10	DECIMAL(20,3)		Cost of OP_ACT_10			
18	COST_11	DECIMAL(20,3)		Cost of OP_ACT_11			
19	COST_12	DECIMAL(20,3)		Cost of OP_ACT_12			
20	COST_13	DECIMAL(20,3)		Cost of OP_ACT_13			
21	COST_14	DECIMAL(20,3)		Cost of OP_ACT_14			
22	COST_15	DECIMAL(20,3)		Cost of OP_ACT_15			
23	COST_16	DECIMAL(20,3)		Cost of OP_ACT_16			
24	COST_17	DECIMAL(20,3)		Cost of OP_ACT_17			
25	COST_18	DECIMAL(20,3)		Cost of OP_ACT_18			
26	COST_19	DECIMAL(20,3)		Cost of OP_ACT_19			
27	COST_20	DECIMAL(20,3)		Cost of OP_ACT_20			
28	COST_21	DECIMAL(20,3)		Cost of OP_ACT_21			
29	COST_22	DECIMAL(20,3)		Cost of OP_ACT_22			
30	COST_23	DECIMAL(20,3)		Cost of OP_ACT_23			
31	COST_24	DECIMAL(20,3)		Cost of OP_ACT_24			
32	COST_25	DECIMAL(20,3)		Cost of OP_ACT_25			
33	COST_26	DECIMAL(20,3)		Cost of OP_ACT_26			
34	COST_27	DECIMAL(20,3)		Cost of OP_ACT_27			
35	COST_28	DECIMAL(20,3)		Cost of OP_ACT_28			
36	COST_29	DECIMAL(20,3)		Cost of OP_ACT_29			
37	COST_30	DECIMAL(20,3)		Cost of OP_ACT_30			

38	COST_31	DECIMAL(20,3)		Cost of OP_ACT_31			1
39	COST_32	DECIMAL(20,3)		Cost of OP_ACT_32			1
40	COST_33	DECIMAL(20,3)		Cost of OP_ACT_33			1
41	COST_34	DECIMAL(20,3)		Cost of OP_ACT_34			1
42	COST_35	DECIMAL(20,3)		Cost of OP_ACT_35			1
43	COST_36	DECIMAL(20,3)		Cost of OP_ACT_36			1
44	COST_37	DECIMAL(20,3)		Cost of OP_ACT_37			1
45	COST_38	DECIMAL(20,3)		Cost of OP_ACT_38			1
46	COST_39	DECIMAL(20,3)		Cost of OP_ACT_39			1
47	COST_40	DECIMAL(20,3)		Cost of OP_ACT_40			1
48	COST_41	DECIMAL(20,3)		Cost of OP_ACT_41			1
49	COST_42	DECIMAL(20,3)		Cost of OP_ACT_42			1
50	COST_43	DECIMAL(20,3)		Cost of OP_ACT_43			1
51	COST_44	DECIMAL(20,3)		Cost of OP_ACT_44			1
52	COST_45	DECIMAL(20,3)		Cost of OP_ACT_45			1
53	TS	TIMESTAMP					
54	*LOG_ID*	INT		Log ID	10223		

}}

USED4
'T'=Total Project period
'A'=Annual
'Q'=Quarterly report
'Q1'=Quarterly report, Quarter1
'Q2'=Quarterly report, Quarter2
'Q3'=Quarterly report, Quarter3
'Q4'=Quarterly report, Quarter4
'Q1R'=Quarterly report, Quarter1 Revised
'Q2R'=Quarterly report, Quarter2 Revised
'Q3R'=Quarterly report, Quarter3 Revised
'Q4R'=Quarterly report, Quarter4 Revised

{{ **QT_REPORT**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	QT_REPORT_ID	INT	PRIMARY KEY	Quarterly Report ID	22	Surrogate key	0.87
2	***PROJECT_CODE**	VARCHAR(20)		Project code	'14320001'		
3	***YEAR**	VARCHAR(5)		Year	2015	2015 --> 2015/16	0.82
4	***HIST_NUM**	INT		History number	0	-1=Loader, 0=Current, 1,2,3…	
5	QT	VARCHAR(2)		Quarter	2	2-->Q2	0.82
6	CONT_QT1	VARCHAR(1)		Contents of Quarter 1 (Flag)	'Y'	'Y' or other (NULL or 'N')	0.95
7	CONT_QT2	VARCHAR(1)		Contents of Quarter 2 (Flag)	'Y'	'Y' or other (NULL or 'N')	0.95
8	CONT_QT3	VARCHAR(1)		Contents of Quarter 3 (Flag)	'Y'	'Y' or other (NULL or 'N')	0.95
9	CONT_QT4	VARCHAR(1)		Contents of Quarter 4 (Flag)	'Y'	'Y' or other (NULL or 'N')	0.95
10	*PROJECT_ID*	INT	NOT NULL	Project ID	23	To identify Outcome, Output, Activity, Indicators and Achievement info	
11	PROJECT_TITLE	VARCHAR(400)	NOT NULL	Project Title	'Construction of XXX'		
12	*VOTE_CODE*	VARCHAR(10)		Vote code	'320'		
13	RESP_MDA_NAME	VARCHAR(200)		Responsible MDA	'Ministry of Education, Science and Technology'		
13	PBB_PROGRAM_CODE	VARCHAR(5)		PBB program code	'49'		3.06
14	PBB_SUB_PROGRAM_CO	VARCHAR(5)		PBB sub-program name	'02'		3.06
14	PBB_PROGRAM_NAME	VARCHAR(200)		PBB program name	'49. Agricultural Productivity and Risk Management'		3.06
15	PBB_SUB_PROGRAM_NA	VARCHAR(200)		PBB sub-program name	'02. Agribusiness Development'		3.06
16	IMP_AGENCY_NAME	VARCHAR(200)		Implementing ministry name	'ABC University'		
17	LOC_HQ	TEXT		Location: Headquarters			0.73
18	LOC_NORTH	TEXT		Location: Northern Region			0.73
19	LOC_CENTRAL	TEXT		Location: Central			0.73
20	LOC_SOUTH	TEXT		Location: Southern Region			0.73
21	LOC_OTHER	TEXT		Location: Other			0.73
22	LOC_SPECIFIC	TEXT		Location: Specific location			3.06
23	PR_PURPOSE	TEXT		Project Purpose			0.73
24	PR_OUTCOME	TEXT		Project Outcome			0.73
25	PR_OUTPUT	TEXT		Project Output			0.73
26	START_DATE	VARCHAR(10)		Start date	'201404'		0.85
27	END_DATE	VARCHAR(10)		End date	'201703'		0.85
28	START_DATE_REVISED	VARCHAR(10)		Start date (Revised)	'201304'		0.85
29	END_DATE_REVISED	VARCHAR(10)		End date (Revised)	'201603'		0.85
30	START_DATE_EXTEND	VARCHAR(10)		Start date (Revised)	'201304'	Not used since 3.06	0.86
31	END_DATE_EXTEND	VARCHAR(10)		End date (Revised)	'201706'	Not used since 3.06	0.86
32	TEC_ORIGINAL	DECIMAL(20,3)		Original Total Estimated Cost	123,456,789,012		0.73
33	TEC_REVISED	DECIMAL(20,3)		Total estimated cost (Revised)	222,333,444,55		0.73
34	FINANCE_ISSUES_Q1	TEXT		Financial issues (Q1)			
35	FINANCE_ISSUES_Q2	TEXT		Financial issues (Q2)			
36	FINANCE_ISSUES_Q3	TEXT		Financial issues (Q3)			
37	FINANCE_ISSUES_Q4	TEXT		Financial issues (Q4)			
38	PERF_ISSUES_Q1	TEXT		Performance issues (Q1)			
39	PERF_ISSUES_Q2	TEXT		Performance issues (Q2)			
40	PERF_ISSUES_Q3	TEXT		Performance issues (Q3)			
41	PERF_ISSUES_Q4	TEXT		Performance issues (Q4)			
42	ACTIONS_Q1	TEXT		Actions taken (Q1)			
43	ACTIONS_Q2	TEXT		Actions taken (Q2)			
44	ACTIONS_Q3	TEXT		Actions taken (Q3)			
45	ACTIONS_Q4	TEXT		Actions taken (Q4)			
46	OTHER_Q1	TEXT		Other achievements (Q1)			
47	OTHER_Q2	TEXT		Other achievements (Q2)			
48	OTHER_Q3	TEXT		Other achievements (Q3)			
49	OTHER_Q4	TEXT		Other achievements (Q4)			
50	REMARK_Q1	TEXT		Remark (Q1)			0.93
51	REMARK_Q2	TEXT		Remark (Q2)			0.93
52	REMARK_Q3	TEXT		Remark (Q3)			0.93
53	REMARK_Q4	TEXT		Remark (Q4)			0.93
54	PROGRESS_SUMMARY	TEXT		Progress summary			3.02.03
55	ARREAR_TOTAL	DECIMAL(20,3)		Arrear Total			0.80
56	ARREAR_DESCRIPTION	TEXT		Arrear description			0.74
57	AFFECT_FACTORS	TEXT		Factors and issues affecting implementation			0.74
58	NAME	VARCHAR(100)		Name	'Thomas Cruise'		
59	MDA	VARCHAR(100)		MDA	'Ministry of Health'		
60	DIVISION	VARCHAR(100)		Division/Section/Unit	'Research division'		
61	POSITION	VARCHAR(100)		Position	'Chief accountant'		
62	TEL	VARCHAR(100)		Telephone	'09991234567'		
63	EMAIL	VARCHAR(100)		Email	'xxx@yyy.zzz'		
64	TEMPLATE_VERSION	VARCHAR(10)		Template version	2.0.33		3.01.01
65	TEMPLATE_ERRORS	INT		Template errors	2		3.01.01
66	REMARK	VARCHAR(100)		Remark			
67	TS	TIMESTAMP					
68	*LOG_ID*	INT		Log ID	10223		

}}

{{ **EXTENSION_REQUEST**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***QT_REPORT_ID**	INT		Quarterly Report ID	455		
4	REQ_DATE	VARCHAR(10)		Requested date	'201404'		3.06
5	REQ_NAME	VARCHAR(100)		Requester's name			
6	REQ_POSITION	VARCHAR(100)		Requester's position			
7	REQ_DIVISION	VARCHAR(100)		Requester's division			
8	REQ_TEL	VARCHAR(100)		Requester's telephone number			
9	REQ_EMAIL	VARCHAR(100)		Requester's email			
10	START_DATE	VARCHAR(10)		Start date (original)			
11	END_DATE	VARCHAR(10)		End date (original)			
12	START_DATE_REV	VARCHAR(10)		Start date (revised)			
13	END_DATE_REV	VARCHAR(10)		End date (revised)			
14	TEC	DECIMAL(20,3)		Total Estimated Cost (Original)			
15	TEC_REQ	DECIMAL(20,3)		Total Estimated Cost (Requested)			
16	REASON	VARCHAR(2000)		Reason for change / extension			
17	START_DATE_APP	VARCHAR(10)		Start date (approved)			3.01.06
18	END_DATE_APP	VARCHAR(10)		End date (approved)			3.01.06
19	TEC_APP	DECIMAL(20,3)		Total Estimated Cost (approved)			3.01.06
20	APP_RESULT	VARCHAR(1)		Approval result	'F'	'F'=Fully approved 'P'=Partially approved 'R'=Rejected	3.01.06
21	APP_COMMENT	VARCHAR(2000)		Approval comment			3.01.06
22	SET_FOR_WITHDRAW_AP	VARCHAR(200)		Set clause for withdrawing approval	tec=100000, tec_year_approval=2015, tec_orig=90000, tec_year_approval_orig=2009, start_date=200907, end_date=201806, start_date_prev=200907, end_date_prev=201506	This is used to update project table to restore previous value of those columns when extension approval is withdrawn	3.01.06
23	REMARK	VARCHAR(100)		Remark			
24	TS	TIMESTAMP					
25	*LOG_ID*	INT		Log ID	10223		

}}

This table is added in Ver.3.02.01

{{ **COMPLETION_REPORT**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY	ID	22	Surrogate key
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference
3	***QT_REPORT_ID**	INT		Quarterly Report ID	455	
4	COM_DATE	VARCHAR(10)		Completion date	'201404'	
5	FILLED_NAME	VARCHAR(100)		Filled person's name		
6	FILLED_POSITION	VARCHAR(100)		Filled person's position		
7	FILLED_DIVISION	VARCHAR(100)		Filled person's division		
8	FILLED_TEL	VARCHAR(100)		Filled person's telephone number		
9	FILLED_EMAIL	VARCHAR(100)		Filled person's email		
10	START_DATE	VARCHAR(10)		Start date (original)		
11	END_DATE	VARCHAR(10)		End date (original)		
12	START_DATE_ACT	VARCHAR(10)		Start date (actual)		
13	END_DATE_ACT	VARCHAR(10)		End date (actual)		
14	TEC	DECIMAL(20,3)		Total Estimated Cost (Original)		
15	TEC_ACT	DECIMAL(20,3)		Total Estimated Cost (Actual)		
16	ARREARS	DECIMAL(20,3)		Amount of arrears		
17	LESSON_LEARNT	VARCHAR(2000)		Lesson learnt		
18	SUSTAINABILITY	VARCHAR(2000)		Sustainability		
19	REMARK	VARCHAR(100)		Remark		
20	TS	TIMESTAMP				
21	*LOG_ID*	INT		Log ID	10223	

}}

{{ **UNMET_OUTCOME**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***QT_REPORT_ID**	INT		Quarterly Report ID	455		
4	***USED4**	VARCHAR(5)	NOT NULL	Used for (What is this for?)	'E'	'E'=Extension Report 'C'=Completion Report	3.02.09
5	***OUTCOME_ODR**	VARCHAR(5)	NOT NULL	Order (A, B, C …)	'A'		
6	UNMET	VARCHAR(1)		Unmet	'Y'	'Y' or other (NULL or 'N')	3.07
7	CHALLENGES	VARCHAR(2000)		Challenges			
8	TS	TIMESTAMP					
9	*LOG_ID*	INT		Log ID	10223		

}}

{{ **UNMET_OUTPUT**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY	ID	22	Surrogate key	
2	PROJECT_CODE	VARCHAR(20)		Project Code	'14-320-001'	For reference	
3	***QT_REPORT_ID**	INT		Quarterly Report ID	455		
4	***USED4**	VARCHAR(5)	NOT NULL	Used for (What is this for?)	'E'	'E'=Extension Report 'C'=Completion Report	3.02.09
5	***OUTPUT_ODR**	VARCHAR(5)	NOT NULL	Order (1, 2, 3 …)	'1'		
6	UNMET	VARCHAR(1)		Unmet	'Y'	'Y' or other (NULL or 'N')	3.07
7	CHALLENGES	VARCHAR(2000)		Challenges			
8	TS	TIMESTAMP					
9	*LOG_ID*	INT		Log ID	10223		

}}

{{ **APP_SCORE_RESULT**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	Appraisal result ID	3041	
2	***YEAR**	VARCHAR(5)	NOT NULL		2017	
3	***PROJECT_CODE**	VARCHAR(10)	NOT NULL		1100	
4	***APP_CATEGORY_ID**	VARCHAR(10)	NOT NULL	Appraisal category ID	N1', 'O2'	
5	***APP_ITEM_ODR**	INT	NOT NULL	Order	1	
6	*PROJECT_ID*	VARCHAR(100)			1234	
7	APP_SCORE	INT			2	
8	APP_SCORE_DESCRIP	VARCHAR(1000)			yes', 'the project h	descriptive score
9	APP_REMARKS	VARCHAR(1000)				
10	STATUS	VARCHAR(10)		Status		'D'=Disable
11	TS	TIMESTAMP				
12	*LOG_ID*	INT		Log ID	10223	

}}

{{ **APP_DECISION**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	Appraisal decision ID	3041		
2	***PROJECT_CODE**	VARCHAR(20)	NOT NULL	Project code	'16-270-001'		0.89
3	***YEAR**	VARCHAR(5)	NOT NULL	Year	2015		0.82
4	*PROJECT_ID*	INT	NOT NULL	Project ID	23	To identify corresponding project info.	
5	SATISFACTORY	VARCHAR(200)		Satisfactory			0.85f
6	READINESS	VARCHAR(200)		Readiness			
7	JUDGE	VARCHAR(5)		Judge		'N' = New, 'O' = On-Going, 'P' = Pipelined, 'S' = Pended, 'E' = Ending, 'T' = Terminated	
8	JUDGE_BD	VARCHAR(5)		Judge by BD		'N' = New, 'O' = On-Going, 'P' = Pipelined, 'S' = Pended, 'E' = Ending, 'T' = Terminated	0.93
9	REMARK	VARCHAR(2000)		Remark			0.89
10	TS	TIMESTAMP					
11	*LOG_ID*	INT		Log ID	10223		

}}

{{ **APP_DECISION_RESULT**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	3041	
2	***YEAR**	VARCHAR(5)	NOT NULL	Year	2017	
3	***PROJECT_CODE**	VARCHAR(10)	NOT NULL	Project Code	1100	
4	*PROJECT_ID*	INT		Project ID	1234	
5	INI_DESK_OFFICER	VARCHAR(100)		Dek officer name	Shalom	
6	INI_HAS_PIPELINE	VARCHAR(1000)		if has pipeline	No, …	
7	FIN_PRIORITY_VOTE	INT		Final appraisal priority of vote	1	
8	FIN_COMPLIANCE	INT		Final appraisal compliance	1	
9	FIN_DONOR_CONFIRMED	INT		Final appraisal donor confirm	1	
10	FIN_READINESS	INT		Final appraisal readiness	1	
11	FIN_CRITICAL_INFO	VARCHAR(1000)		Final appraisal critical info		
12	STATUS	VARCHAR(10)		Status		'D'=Disable
13	TS	TIMESTAMP				
14	*LOG_ID*	INT		Log ID	10223	

}}

{{ **APP_DECISION_TRANSITION**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	3041		
2	***YEAR**	VARCHAR(5)	NOT NULL	Year	2017		
3	***PROJECT_CODE**	VARCHAR(10)	NOT NULL	Project code	1100		
4	***DECISION_STAGE**	VARCHAR(5)		Decision timing	'A'	'I' = Init Appraisal 'A' = Case A, 'B' = Case B, 'C' = Case C 'D' = Case D, 'L' = Allocation adjustment, 'P' = Approved budget,	
5	*PROJECT_ID*	INT		Project ID	1234		
6	PROJECT_STATUS	VARCHAR(5)		Project status	'N'	'N' = New, 'O' = On-Going, 'P' = Pipelined, 'S' = Pended, 'E' = Ending, 'T' = Terminated	
7	PART1_BUDGET	DECIMAL(20,3)		Part1 budget			3.01.04
8	PART2_BUDGET	DECIMAL(20,3)		Part2 budget			3.01.04
9	REMARKS	VARCHAR(1000)		Remark			3.01.04
10	ACTION_TYPE	VARCHAR(2)		Action Type	'C', 'E'	C'=Copy, 'E'=Edit, 'S'=Save	3.01.05
11	COPY_FROM	VARCHAR(10)		Copy from			3.02.06
12	STATUS	VARCHAR(10)		Status		'D'=Disable	
13	TS	TIMESTAMP					
14	*LOG_ID*	INT		Log ID	10223		

}}

{{ **MM_VOTE_DESC**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	22	Surrogate key
2	***YEAR**	VARCHAR(5)	NOT NULL	Fiscal year	2015	
3	***VOTE_CODE**	VARCHAR(20)	NOT NULL	Vote code	'190'	
4	VOTE_NAME	VARCHAR(100)		Vote name	'Ministry of Health'	
5	CONCLUDE_FLAG	VARCHAR(5)		Concluded flag	'Y'	'Y'=Concluded
6	MDAS	VARCHAR(400)		MDAs	'Ministry of Health'	
7	OTHER_ENTS	VARCHAR(400)		Other Entities	'Gender & Elderly, …'	
8	OVERALL_COMMENT	TEXT		Overall comment	'The conclusion is …'	
9	START_DTIME_1	VARCHAR(20)		Start date & time (1)	'2016-11-23 10:30'	
10	END_DTIME_1	VARCHAR(20)		End date & time (1)	'2016-11-23 12:00'	
11	VENUE_1	VARCHAR(100)		Venue (1)	'EP&D Meeting room'	
12	ATTEND_PSIP_1	VARCHAR(400)		Attendees PSIP (1)	'Edward, Daudi'	
13	ATTEND_MDA_1	VARCHAR(400)		Attendees MDA (1)	'Mr. Steave, Ms. Olive'	
14	START_DTIME_2	VARCHAR(20)		Start date & time (2)	'2016-11-23 10:30'	
15	END_DTIME_2	VARCHAR(20)		End date & time (2)	'2016-11-23 12:00'	
16	VENUE_2	VARCHAR(100)		Venue (2)	'EP&D Meeting room'	
17	ATTEND_PSIP_2	VARCHAR(400)		Attendees PSIP (2)	'Edward, Daudi'	
18	ATTEND_MDA_2	VARCHAR(400)		Attendees MDA (2)	'Mr. Steave, Ms. Olive'	
19	START_DTIME_3	VARCHAR(20)		Start date & time (3)	'2016-11-23 10:30'	
20	END_DTIME_3	VARCHAR(20)		End date & time (3)	'2016-11-23 12:00'	
21	VENUE_3	VARCHAR(100)		Venue (3)	'EP&D Meeting room'	
22	ATTEND_PSIP_3	VARCHAR(400)		Attendees PSIP (3)	'Edward, Daudi'	
23	ATTEND_MDA_3	VARCHAR(400)		Attendees MDA (3)	'Mr. Steave, Ms. Olive'	
24	START_DTIME_4	VARCHAR(20)		Start date & time (4)	'2016-11-23 10:30'	
25	END_DTIME_4	VARCHAR(20)		End date & time (4)	'2016-11-23 12:00'	
26	VENUE_4	VARCHAR(100)		Venue (4)	'EP&D Meeting room'	
27	ATTEND_PSIP_4	VARCHAR(400)		Attendees PSIP (4)	'Edward, Daudi'	
28	ATTEND_MDA_4	VARCHAR(400)		Attendees MDA (4)	'Mr. Steave, Ms. Olive'	
29	TS	TIMESTAMP				
30	*LOG_ID*	INT		Log ID	10223	

}}

{{ **MM_PROJECT_RECORD**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	22	Surrogate key
2	***YEAR**	VARCHAR(5)	NOT NULL	Fiscal year	2015	
3	***VOTE_CODE**	VARCHAR(20)	NOT NULL	Vote code	'190'	
4	***PROJECT_CODE**	VARCHAR(20)	NOT NULL	Project Code	'1234'	
5	DECISION_FLAG	VARCHAR(5)		Decision flag	'Y'	'Y'=Decision has been made
6	MEMO	TEXT		Memo	'This project is ..'	
7	TS	TIMESTAMP				
8	*LOG_ID*	INT		Log ID	10223	

}}

{{ **SITE_VALIDATION_LOG**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	22	Surrogate key
2	YEAR	VARCHAR(5)	NOT NULL	Fiscal year	2015	INDEX (YEAR,PROJECT_CODE)
3	*PROJECT_CODE*	VARCHAR(20)	NOT NULL	Project Code	'1234'	INDEX (YEAR,PROJECT_CODE)
4	DTIME	VARCHAR(20)	NOT NULL	Date and time	'2016-11-12 14:30:20'	
5	*FILESET_ID*	INT		Fileset ID	236	Pointer to photo file set
6	SITE	VARCHAR(400)		Site	'Lillongwe city hall'	
7	TEAM_MEMBERS	VARCHAR(1000)		Team members	'Daudi, Shalom, …'	
8	MET_PERSONS	VARCHAR(1000)		Met persons	'Mr. Banda, Ms. …'	
9	PROGRESS	TEXT		Progress	'Delayed'	
10	CHALLENGE	TEXT		Challenge	'No fund'	
11	RECOMMENDATION	TEXT		Recommendation	'Allocate fund'	
12	TS	TIMESTAMP				
13	*LOG_ID*	INT		Log ID	10223	

}}

This table is added at Ver.3.02.05

{{ **PROJECT_MEMO**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	22	Surrogate key
2	***PROJECT_CODE**	VARCHAR(20)	NOT NULL	Project Code	'1234'	
3	***YEAR**	VARCHAR(5)	NOT NULL	Fiscal year	2015	
3	AS_OF	VARCHAR(30)		As of	'2017-05-01'	
4	PROGRESS	TEXT		Progress	'Build 10 houses …'	
4	CHALLENGE	TEXT		Challenge	'The fund is small to ..'	
5	RECOMMENDATION	TEXT		Recommendation	'It is better to ..'	
6	MEMO1	TEXT		Memo 1		Reserved for future use
7	MEMO2	TEXT		Memo 2		Reserved for future use
8	MEMO3	TEXT		Memo 3		Reserved for future use
9	MEMO4	TEXT		Memo 4		Reserved for future use
10	TS	TIMESTAMP				
11	*LOG_ID*	INT		Log ID	10223	

}}

{{ **FILE_SET**

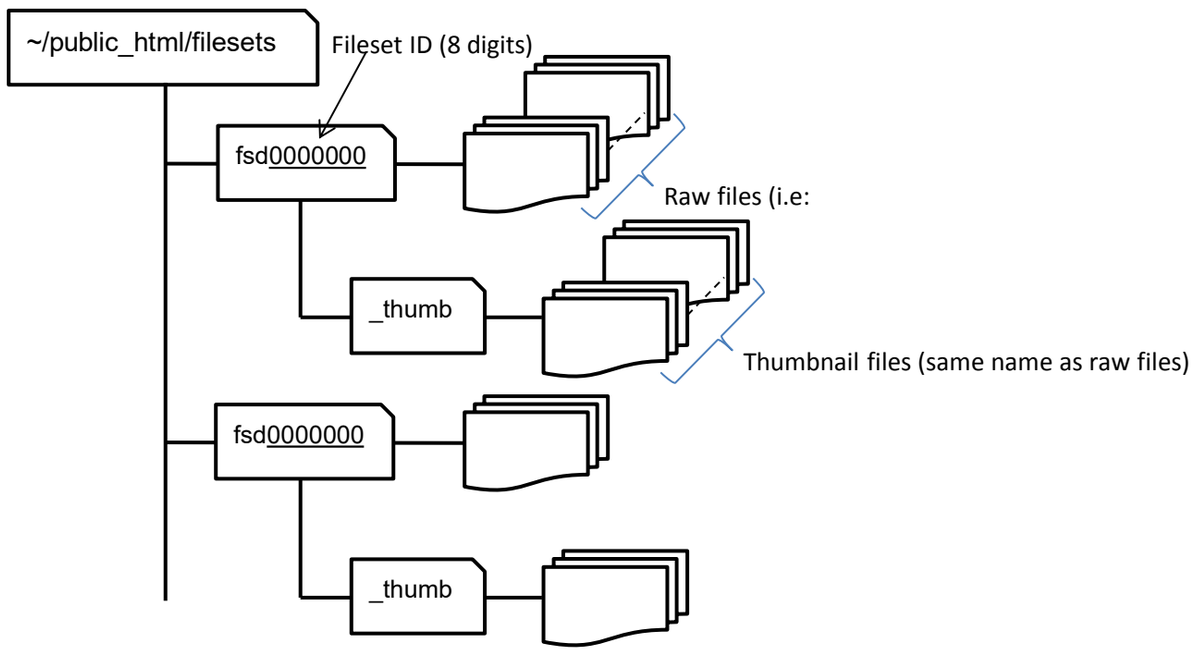
No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY	ID	22	Surrogate key
2	FS_NAME	VARCHAR(100)		Fileset name	'Site A visit pics'	
3	*PARENT_FILESET_ID*	INT		Parent Fileset ID	236	Pointer to photo parent file set
4	TS	TIMESTAMP				
5	*LOG_ID*	INT		Log ID	10223	

}}

{{ **FILE**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY	ID	22	Surrogate key
2	***FILESET_ID***	INT	NOT NULL	Fileset ID	236	The fileset ID that this file belongs to
3	***ODR**	INT	NOT NULL	Order	1	
4	FNAME	VARCHAR(400)		File name	'DCS_10201.jpg'	
5	MIME_TYPE	VARCHAR(100)		MIME type	'image/jpeg'	
6	MEMO	VARCHAR(1000)		Fileset name	'Site A visit pics'	
7	TS	TIMESTAMP				
8	*LOG_ID*	INT		Log ID	10223	

}}



{{ **JOB**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY	ID	10	Surrogate key
2	JOB_NAME	VARCHAR(200)	NOT NULL	Job Title	'TEMPGEN'	
3	JOB_DESC	VARCHAR(2000)		Description	'Template generation	
4	SCHEDULE	VARCHAR(200)		Schedule time	'2017-06-20 01:30:00'	Maybe the format will be extended to accommodate periodical schedule Empty=Immediate
5	OS_USER	VARCHAR(20)		OS user	'psip'	The OS user when this job is
6	MAX_DURATION	INT		Max duration	3600	Specify the maximum allowed duration in seconds
7	STEPS	INT		Steps (Total)	231	Total steps
8	PROGRESS	INT		Progress	39	Completed steps
9	PAUSE	VARCHAR(5)		Pause	'1'	'1'=Pause, Other=Not pause
10	STATUS	VARCHAR(5)		Status	'D'	NULL=Not done, 'I'=In Progress, 'D'=Done、'P'=Paused
11	RESULT	VARCHAR(5)		Result	'F'	'F'=Fail, 'S'=Success
12	START_DTIME	VARCHAR(20)		Actual start day-time	'2017-06-20 01:30:03'	
13	FINISH_DTIME	VARCHAR(20)		Actual finish day-time	'2017-06-20 02:08:22'	
14	TS	TIMESTAMP				
15	*LOG_ID*	INT		Log ID	10223	

}}

{{ **JOB_STEP**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY	ID	10	Surrogate key
2	***JOB_ID**	INT	NOT NULL	Job ID	236	References JOB(ID)
3	***ODR**	INT		Order	1	Execution order within the JOB_ID
4	LEVEL	INT		Level	1	1=Stop job on failure, 2=Continue job on failure
5	CMD	TEXT		Command	'mkdir /home/psip/…'	Shell command to be executed
6	STATUS	VARCHAR(5)		Status	'D'	NULL=Not done, 'I'=In Progress, 'D'=Done
7	EXIT_CODE	VARCHAR(5)		Exit code	'1'	Command's exit code
8	MESSAGE	TEXT		Message	'Error: invalid command'	Command's output message
9	START_DTIME	VARCHAR(20)		Actual start day-time	'2017-06-20 01:30:03'	
10	FINISH_DTIME	VARCHAR(20)		Actual finish day-time	'2017-06-20 02:08:22'	
11	TS	TIMESTAMP				
12	*LOG_ID*	INT		Log ID	10223	

}}

{{ **MST_VERSION**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	***MST_VER_NUM**	INT	PRIMARY KEY ~~AUTO_INCREMENT~~	Master version number (Fisca	2017	2016, 2017, …
2	REMARK	VARCHAR(100)		Remark		
3	TS	TIMESTAMP				
4	*LOG_ID*	INT		Log ID	10223	

}}

{{ **MST_CURRENCY**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	22	
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017	
3	***CURRENCY_CODE**	VARCHAR(10)	NOT NULL	Currency code = Abbrevisatic	'JPY'	
4	NAME	VARCHAR(100)	NOT NULL	Currency name	'Japanese Yen'	
5	REMARK	VARCHAR(100)		Remark		
6	TS	TIMESTAMP				
7	*LOG_ID*	INT		Log ID	10223	

}}

{{ **MST_EXCHANGE_RATE**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	22	
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017	
3	***CURRENCY_CODE**	VARCHAR(10)	NOT NULL	Currency code	'USD'	
2	AS_OF	VARCHAR(10)	NOT NULL	As of	'2015-02-01'	
4	RATE	DECIMAL(20,6)	NOT NULL	Conversion rate to MWK	402.123	
5	REMARK	VARCHAR(100)		Remark		
6	TS	TIMESTAMP				
7	*LOG_ID*	INT		Log ID	10223	

}}

{{ **MST_MDA**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	579	
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017	
3	***MDA_CODE**	VARCHAR(10)	NOT NULL	MDA code	'320'	
4	NAME	VARCHAR(200)	NOT NULL	MDA name	'Ministry of Health"	
5	MDA_TYPE	VARCHAR(10)	NOT NULL	MDA type	'M'	'M'=Ministry, 'D'=Department,
6	ABBREV	VARCHAR(10)		Abbreviation	'MoH"	
7	REMARK	VARCHAR(100)		Remark		
8	TS	TIMESTAMP				
9	*LOG_ID*	INT		Log ID	10223	

}}

{{ **MST_VOTE**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	579	
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017	
3	***VOTE_CODE**	VARCHAR(10)	NOT NULL	Vote code	'320'	
4	*MDA_CODE*	VARCHAR(10)		MDA code	'300'	
5	NAME	VARCHAR(100)	NOT NULL	Vote name	'Ministry of Health"	
6	ABBREV	VARCHAR(10)		Abbreviation	'MoH"	
7	REMARK	VARCHAR(100)		Remark		
8	TS	TIMESTAMP				
9	*LOG_ID*	INT		Log ID	10223	

}}

{{ **MST_DONOR**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	579	
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017	
3	***DONOR_CODE**	VARCHAR(10)	NOT NULL	Donor code	'a220'	
4	NAME	VARCHAR(200)	NOT NULL	Donor name	'Japan International ..."	
5	ABBREV	VARCHAR(20)		Abbreviation	'JICA"	
6	REMARK	VARCHAR(100)		Remark		
7	TS	TIMESTAMP				
8	*LOG_ID*	INT		Log ID	10223	

}}

{{ **MST_DISTRICT**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	579	
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017	
3	***DISTRICT_CODE**	VARCHAR(10)	NOT NULL	District code	101	
4	REGION	VARCHAR(10)	NOT NULL	Region	'N'	'N'=North, 'C'=Central, 'S'=Southern, 'H'=Ministry / Department Headquarters, 'O'=Other
5	NAME	VARCHAR(50)	NOT NULL	Name	'Mzuzu'	
6	REMARK	VARCHAR(100)		Remark		
7	TS	TIMESTAMP				
8	*LOG_ID*	INT		Log ID	10223	

}}

{{ **MST_MGDS_THEME**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	579	
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017	
3	***MGDS_THEME_CODE**	VARCHAR(10)	NOT NULL	MGDS Theme code	100	
4	TITLE	VARCHAR(200)	NOT NULL	Theme title		
5	REMARK	VARCHAR(100)		Remark		
6	TS	TIMESTAMP				
7	*LOG_ID*	INT		Log ID	10223	

}}

{{ **MST_MGDS_PRIORITY**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	579	
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017	
3	***MGDS_PRIORITY_CODE**	VARCHAR(10)	NOT NULL	MGDS Priority code	120	
4	TITLE	VARCHAR(200)	NOT NULL	Priority title		
5	REMARK	VARCHAR(100)		Remark		
6	TS	TIMESTAMP				
7	*LOG_ID*	INT		Log ID	10223	

}}

{{ **MST_SECTOR**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	579	
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017	
3	***SECTOR_CODE**	VARCHAR(10)	NOT NULL	Sector code	34	
4	NAME	VARCHAR(200)	NOT NULL	Sector name		
5	REMARK	VARCHAR(100)		Remark		
6	TS	TIMESTAMP				
7	*LOG_ID*	INT		Log ID	10223	

}}

{{ **MST_APP_CATEGORY**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	579		
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017		
3	***APP_CATEGORY_ID**	VARCHAR(10)	NOT NULL	Appraisal category ID	'N1', 'O1'		
4	TITLE	VARCHAR(10)	NOT NULL	Category title			
5	ODR	INT	NOT NULL	Order(1,2,3 …)	1		
6	DESCRIPTION	VARCHAR(1000)		Description			
7	MIN_SCORE	VARCHAR(50)		Minimum score	'YES', 2,1		3.01.00
8	MAX_SCORE	VARCHAR(50)		Maximum score	'YES', 5,6		3.01.00
7	TYPE	VARCHAR(2)	NOT NULL	Type	'O'	'O'=On-Going, 'N'=New	3.01.00
8	CATEGORY_TYPE	VARCHAR(2)		Category Type	'T'	'S'=Score, 'Y'=Yes/No, 'N'=Narrative, 'T' = Total Maximum Score Category, 'R' = Recommendations	3.01.04
9	APP_TYPE	VARCHAR(2)		Asppraisal Type	'F'	'I'=Initial appraisal, 'F'=Final appraisal	3.01.04
10	STATUS	VARCHAR(10)		Status		'D'=Disable	
11	TS	TIMESTAMP					
12	*LOG_ID*	INT		Log ID	10223		

}}

{{ **MST_APP_ITEM**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	3041		
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017		
3	***APP_CATEGORY_ID**	VARCHAR(10)	NOT NULL	Appraisal category ID	'270'		
4	***ODR**	INT	NOT NULL	Order			
5	TITLE	VARCHAR(100)	NOT NULL	Title			
6	DESCRIPTION	VARCHAR(1000)		Description			
7	APP_CRITERION	VARCHAR(1000)			Logical flow		3.01.00
8	NOTES_CRITERION	VARCHAR(1000)			2=Very likely,		3.01.00
9	NOTES_BEFORE	VARCHAR(1000)			How likely is it …		3.01.00
10	NOTES_AFTER	VARCHAR(1000)			Please state your …		3.01.00
11	SCORING_FRAME	VARCHAR(50)			2		3.01.00
12	REFERENCE	VARCHAR(1000)			Template		3.01.00
13	EXPLANATION	VARCHAR(1000)			Here we would like to		3.01.00
14	TYPE	VARCHAR(2)	NOT NULL	Type	'S'	'S'=Score, 'Y'=Yes/No, 'N'=Narrative, 'SI'=Score from Initial,'CI'=Critical	3.01.04
15	STATUS	VARCHAR(10)		Status		'D'=Disable	
16	TS	TIMESTAMP					
17	*LOG_ID*	INT		Log ID	10223		

}}

{{ **MST_LINE_ITEM** 0.73

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	3041		
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017		
3	***LINE_ITEM_CODE**	VARCHAR(4)	NOT NULL	Line Item code	22	Part of chart of account	0.73
4	ITEM_TYPE	VARCHAR(10)	NOT NULL	Budget item type	'U'	'A'=Capital 'U'=Current	
5	NAME	VARCHAR(100)	NOT NULL	Budget item name	'Intrests on Local	From Chart of account	
6	REMARK	VARCHAR(100)		Remark			
7	TS	TIMESTAMP					
8	*LOG_ID*	INT		Log ID	10223		

}}

{{ **MST_SUB_ITEM** 0.73

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	3041		
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017		
3	***SUB_ITEM_CODE**	VARCHAR(4)	NOT NULL	Sub item code	25	Part of chart of account	0.73
4	*LINE_ITEM_CODE*	VARCHAR(4)	NOT NULL	Line Item code	22		0.73
5	NAME	VARCHAR(100)	NOT NULL	Sub item name	'Intrests on sub local ...'	User may define	
6	REMARK	VARCHAR(100)		Remark			
7	TS	TIMESTAMP					
8	*LOG_ID*	INT		Log ID	10223		

}}

{{ **MST_PBB_PROGRAM** **Added in 0.95**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	3041	
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017	
3	***VOTE_CODE**	VARCHAR(10)		Vote code	320	
4	***PBB_PROGRAM_CODE**	VARCHAR(4)	NOT NULL	PBB Program Code	22	
5	NAME	VARCHAR(100)	NOT NULL	PBB Porgram name		
6	REMARK	VARCHAR(100)		Remark		
7	TS	TIMESTAMP				
8	*LOG_ID*	INT		Log ID	10223	

}}

{{ **MST_PBB_SUB_PROGRAM** **Added in 0.95**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	ID	3041	
2	***MST_VER_NUM**	INT	NOT NULL	Master history number	2017	
3	***VOTE_CODE**	VARCHAR(10)		Vote code	320	
4	***PBB_PROGRAM_CODE**	VARCHAR(4)	NOT NULL	PBB Program Code	22	
5	***PBB_SUB_PROGRAM_CO**	VARCHAR(4)	NOT NULL	PBB Sub Program Code	25	
6	NAME	VARCHAR(100)	NOT NULL	PBB Sub Program Name		
7	REMARK	VARCHAR(100)		Remark		
8	TS	TIMESTAMP				
9	*LOG_ID*	INT		Log ID	10223	

}}

This table is not used as of Aug 2017

{{ **AD_HOC**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	Ad-hoc ID	22	
2	***PROJECT_CODE**	VARCHAR(20)		Project code	'14-320-001'	
3	***REPORT_ID**	VARCHAR(20)	NOT NULL	Rport ID	'1512001'	YYMMSSS
4	*PROJECT_ID*	INT	NOT NULL	Project ID	23	To identify Outcome, Output, Activity, Indicators and Achievement info
5	EVENT_DATE	VARCHAR(10)	NOT NULL	Event date	'2015-06-27'	0.82
6	REPORT_DATE	VARCHAR(10)	NOT NULL	Report date	'2015-06-27'	0.82
7	TITLE	VARCHAR(200)	NOT NULL	Title		
8	TYPE	VARCHAR(5)	NOT NULL	Report type	'SITE'	'SITE'=Site visit report
9	SERIOUSNESS	VARCHAR(5)	NOT NULL	Seriousness	'G'	'G'=Green, 'Y'=Yellow, 'R'=Red
10	AUTHOR_NAME	VARCHAR(100)	NOT NULL	Author name		
10	AUTHOR_EMAIL	VARCHAR(100)	NOT NULL	Author email	'xxx@example.com'	
11	AUTHOR_TEL	VARCHAR(100)	NOT NULL	Author telephone	'099 989 1234'	
12	MAIL_TO	VARCHAR(2000)	NOT NULL	Mail to	'12,13'	Mail group ID list or Mail address list
13	MESSAGE	TEXT	NOT NULL	Message body		
14	ATTACHMENT1	VARCHAR(400)		Attachment 1	'20151201/document1.doc'	
15	ATTACHMENT2	VARCHAR(400)		Attachment 2		
16	ATTACHMENT3	VARCHAR(400)		Attachment 3		
17	ATTACHMENT4	VARCHAR(400)		Attachment 4		
18	ATTACHMENT5	VARCHAR(400)		Attachment 5		
19	ATTACHMENT6	VARCHAR(400)		Attachment 6		
20	ATTACHMENT7	VARCHAR(400)		Attachment 7		
21	ATTACHMENT8	VARCHAR(400)		Attachment 8		
22	STATUS	VARCHAR(5)		Status	'SE'	'SE'=Sent,'UN'=Unsent,'SA'=Saved
23	TS	TIMESTAMP				
24	*LOG_ID*	INT		Log ID	10223	

}}

These tables are not used as of Aug 2017

{{ **MAIL_GROUP**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY	Mail group ID	270	
2	***MG_NAME**	VARCHAR(100)	NOT NULL	Mail group name	'Finance sector'	
3	DESCRIPTION	VARCHAR(200)		Description	'This group is ..."	
4	LEVEL	INT		Level	3	Level of this group
5	RELATED_VOTES	VARCHAR(2000)		Related votes	'210,300,320"	Lists the vote codes
6	TS	TIMESTAMP				
7	*LOG_ID*	INT		Log ID	10223	

}}

{{ **MAIL_LIST**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY	Mail list ID	270	
2	***MAIL_GROUP_ID**	INT		Mail group ID		
3	***EMAIL**	VARCHAR(100)	NOT NULL	Email		
4	NAME	VARCHAR(200)	NOT NULL	Person's name		
5	DESCRIPTION	VARCHAR(200)		Description		Ministry, Designation, Cell, tec.
6	TS	TIMESTAMP				
7	*LOG_ID*	INT		Log ID	10223	

}}

{{ **USER**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	User ID	22		
2	***LOGIN_ID**	VARCHAR(100)	NOT NULL	Login ID		Size changed from 20 to 100 @3.05	3.05
3	FIRST_NAME	VARCHAR(100)		First name			
4	LAST_NAME	VARCHAR(100)		Last name			
5	ROLE	VARCHAR(20)		Role	'ROLE_ADMIN'	See below	
6	*VOTE_CODE*	VARCHAR(10)		Belonging vote code			0.82
7	PASS	VARCHAR(100)		Password			
8	PASS_CHANGE	VARCHAR(10)		Password			
9	PASS_CHANGE_FLAG	VARCHAR(20)		Password			
10	STATUS	VARCHAR(5)		Status		'D'=Disable, 'X'=Expired, 'E'=Enable	
11	GENDER	VARCHAR(1)		Gender	'F'	'F'=Female, 'M'=Male	
12	ORGANIZATION	VARCHAR(100)		Organization			
13	POSITION	VARCHAR(100)		Position	'Economist'		3.05
14	ADDRESS	VARCHAR(100)		Address			
15	POBOX	VARCHAR(100)		PO Box			
16	EMAIL1	VARCHAR(100)		Email1			
17	EMAIL2	VARCHAR(100)		Email2			
18	TEL1	VARCHAR(20)		Telephone number 1			
19	TEL2	VARCHAR(20)		Telephone number 2			
20	CELL1	VARCHAR(20)		Cell phone number 1			
21	CELL2	VARCHAR(20)		Cell phone number 2			
22	LAST_LOGIN_DATE	VARCHAR(20)		Last login date	'2015-11-19 10:58:09'		0.85e
23	LOGIN_COUNT	INT		Login count			
24	TS	TIMESTAMP					

}}

ROLE

ROLE_ADMIN
ROLE_PSIP
ROLE_USER
ROLE_GUEST

{{ **CONST1**

0.75

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREME	ID	22	
2	*SECTION	VARCHAR(50)		Section name		
3	*NAME	VARCHAR(50)		Constant name		
4	VALUE	VARCHAR(1000)		Value		
5	TS	TIMESTAMP				
6	*LOG_ID*	INT		Log ID	10223	

}}

Example 1

```
   SECTION     NAME           VALUE
------------- ----  -------------------------
PROJECT_TYPE   01   Development/Infrastructure
PROJECT_TYPE   02   Development/Service
PROJECT_TYPE   03   Development/Hybrid
PROJECT_TYPE   04   Recurren
```

Example 2

```
SECTION    NAME             VALUE
-------- ----------------  -------------------------
SYSTEM   AUTO_SAVE_PERIOD  300
SYSTEM   AUTO_LOGOFF_TIME  600
```

{{ **ANNOUNCEMENT**

0.75

No.	Column Name	V1.5 Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID		INT	PRIMARY KEY AUTO_INCREMENT	ID	22	
2	ODR		INT		Order	1	If NULL, not displayed
3	VALUE		VARCHAR(50)		Text value		
4	REMARK		VARCHAR(1000)		Value		
5	TS		TIMESTAMP				
6	*LOG_ID*		INT		Log ID	10223	

}}

{{ **LOG**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	Log ID	22	
2	LOGIN_ID	VARCHAR(20)		Login ID		For reference
3	***USER_ID**	INT		User ID		
4	***LOGIN_TIME**	DATETIME		Login time		
5	LOGOUT_TIME	DATETIME		Logout time		
6	IP_ADDRESS	VARCHAR(20)		IP address	'10.104.1.22'	
7	RESULT	VARCHAR(10)		Result		'Success', 'Fail'
8	REMARK	VARCHAR(200)		Remark	'Attempt to login with wrong password	
9	**TS**	TIMESTAMP				

}}

{{ **SUBMISSION**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks	
1	ID	INT	PRIMARY KEY AUTO_INCREMENT	Ad-hoc ID	22		
2	PROJECT_CODE	VARCHAR(20)		Project code	'14-320-001'		
3	PROJECT_TITLE	VARCHAR(400)		Project Title	'Construction of XXX'		
4	VOTE_CODE	VARCHAR(10)		Vote code	320		
5	REP_MINISTRY_CODE	VARCHAR(10)		Representing ministry code	320		
2	TEMPLATE_YEAR	VARCHAR(10)		Template year	'2015'	2015 --> 2015/16	3.01
6	TEMPLATE_VERSION	VARCHAR(10)		Template version	2.0.33		
7	TEMPLATE_TYPE	VARCHAR(1)		Template type	'N' or 'O' or 'Q'		
8	FILE_PATH	VARCHAR(1000)		File path	'/var/samba/template …'		
9	FILE_NAME	VARCHAR(1000)		File name	'1718_190_ONGOING..'		
10	FILE_SIZE	INT		File size	2901293		3.02
11	FILE_TIMESTAMP	VARCHAR(20)		File timestamp	'2016-10-01 21:34:55'		3.01.01
12	MODE	VARCHAR(5)		Mode	'A'	'A' for automatic	
13	FLAG_SUBMITTED	INT	DEFAULT 0	Flag submitted	1		
14	FLAG_CHECKED	INT	DEFAULT 0	Flag checked	0		
15	FLAG_LOADED	INT	DEFAULT 0	Flag loaded	0		
16	NUM_ERRORS	INT	DEFAULT 0		2		
17	RESULT1	VARCHAR(5)		Result	'S'	'S' for success, 'E' for Error 'D' for Deleted	3.03
18	MESSAGE	VARCHAR(4000)		Message	'Loading error …'		3.03
19	TS	TIMESTAMP					
20	*LOG_ID*	INT		Log ID	10223		

}}

{{ **VOTE_REWRITE**

No.	Column Name	Data Type	Other Attributes	Origin of Column Name	Data Example	Remarks
1	ID	INT	PRIMARY KEY	ID	22	Surrogate key
2	PROJECT_CODE	VARCHAR(20)		Project Code	'1234'	
3	YEAR	INT	NOT NULL	Year	2016	Year to apply
4	FROM_VOTE_CODE	VARCHAR(10)		From Vote Code	'324'	Code from
5	TO_VOTE_CODE	VARCHAR(10)	NOT NULL	To Vote Code	'320'	Code to
6	TS	TIMESTAMP				
7	*LOG_ID*	INT		Log ID	10223	

}}

Usage of VOTE_REWRITE

project_code='1234', to_vote_code='222' --> Rewrite the vote code of project 1234 to 222
project_code='*', from_vote_code='221', to_vote_code='222' --> Rewrite the vote code of all projects in vote 221 to 222

How to keep the historical data

1. Present contents of PROJECT table

PROJECT_ID	PROJECT_CODE	HIST_NUM	YEAR	VOTE_CODE	PROJECT_TITLE	
1000	16-330-001	2	2015	320	Construction of Hospital	Previous 2
1001	16-330-001	1	2015	320	Construction of Hospital	Previous 1
1002	16-330-001	0	2015	320	Construction of Hospital	Current

2. Modify PROJECT_TITLE and save

(1) UPDATE PROJECT SET HIST_NUM=HIST_NUM+1 TS=TS WHERE PROJECT_CODE='16-330-001' ORDER BY HIS

(2) The row PROJECT_ID=1002 is copied as HIST_NUM=0 and the modified content is reflected
All subsequent tables are copied accordingly.
OUTLINE, COST, FINANCE, LOCATION, OPERATION, INDICATOR, PROGRESS and MONEY

PROJECT_ID	PROJECT_CODE	HIST_NUM	YEAR	VOTE_CODE	PROJECT_TITLE	
1000	16-330-001	3	2015	320	Construction of Hospital	Previous 3
1001	16-330-001	2	2015	320	Construction of Hospital	Previous 2
1002	16-330-001	1	2015	320	Construction of Hospital	Previous 1
1003	16-330-001	0	2015	320	Construction of Hospital (1)	Current

(3) Any other modifications are reflected to the row PROJECT_ID=1003 as long as the user keeps loging in (=same session

3. Load the project template as "Ongoing Project" for 2015/16 budget. The operation is done on Template Loader.

PROJECT_ID	PROJECT_CODE	HIST_NUM	YEAR	VOTE_CODE	PROJECT_TITLE	
1000	16-330-001	3	2015	320	Construction of Hospital	Previous 3
1001	16-330-001	2	2015	320	Construction of Hospital	Previous 2
1002	16-330-001	1	2015	320	Construction of Hospital	Previous 1
1003	16-330-001	0	2015	320	Construction of Hospital (1)	Current
1004	16-330-001	-1	2015	320	Construction of Hospital (1)	Loaded

The loaded contents are confirmed and verified by a desk officer.
In case to be discarded: Delete the row where the PROJECT_ID=1004
In case to be saved execute a query:
UPDATE PROJECT SET HIST_NUM=HIST_NUM+1 TS=TS WHERE PROJECT_CODE='16-330-001' ORDER BY HIST

PROJECT_ID	PROJECT_CODE	HIST_NUM	YEAR	VOTE_CODE	PROJECT_TITLE	
1000	16-330-001	4	2015	320	Construction of Hospital	Previous 4
1001	16-330-001	3	2015	320	Construction of Hospital	Previous 3
1002	16-330-001	2	2015	320	Construction of Hospital	Previous 2
1003	16-330-001	1	2015	320	Construction of Hospital (1)	Previous 1
1004	16-330-001	0	2015	320	Construction of Hospital (1)	Current