

## GUI\_ProjectRestore – Restore a Project

### Revision history

2017-06-21	Robin Lamacraft	Original draft
2018-06-08	Rod Thompson	Replace 'screen' with 'window' Add graphic, Process Flow chart
2018-06-09	Rod Thompson Don Ferguson	Edits Amend REQUIRED SERVICES
2018-06-10	Rod Thompson Don Ferguson	Add Dependencies; Revise graphics, Flow chart & Windows Interaction Map; Add detail to LOOK AND FEEL; Add Warning & Error Messages; Add EVENT ACTIONS
2018-06-11	Rod Thompson	Edit; Replace graphics & Process Flow Chart
2018-07-01	Rod Thompson	Revise Issues; Add PROJECT FILESET Revise REQUIRED SERVICES – Dependencies; Replace Process flowchart; Amend MESSAGES; Replace WINDOW INTERACTION MAP
2018-07-02	Rod Thompson	Revise SCOPE and ACTIONS; Replace Process Flowchart; Added sample logging process and use case
2018-07-07	Rod Thompson	Add Use Cases (version differences); Add TESTING; Revise PROJECT RESTORATION LOG
2018-07-08	Rod Thompson	Replace Process Flowchart Edit ERROR MESSAGES
2018-07-17	Don Ferguson	Updated Use cases, added commentary for plugins
2018-11-18	Rod Thompson	Additions to WARNING CONDITIONS; Addition to ERROR CONDITIONS; Add window location to LOOK AND FEEL; Amend EVENT ACTIONS; Update REQUIRED SERVICES – Add 07.11 BR_Logging
2019-02-26	Rod Thompson	Replace Window graphics (v10)
2019-03-01	Rod Thompson	Add LOGGING; REQUIRED SERVICES – Add 05.77 GUI_FileChooser; EVENT ACTIONS – Add Keyboard action detail; ISSUES – Addition re multiple folders for External files
2019-03-02	Rod Thompson	Replace WINDOWS INTERACTION MAP (v4)
2019-03-31	Rod Thompson	Major revision
2019-04-09	Don Ferguson	Replace mockups with actual screen shots; Minor text revisions for clarity throughout; Update 03.6x references to 05.8x (with notes of changes required in graphics)

### SCOPE

This GUI module is called from the Main Menu to restore an HRE project from backup files.

The location and naming of the Backup file to be used for restoration is determined by the User when using the Project Backup module. The backup process may also have included external files, for which restoration is optional, to selected locations.

Selection of a project for 'restore' action is made from a selection of the relevant project.

Where a database software update has occurred since the project backup was created, an 'update' process may be required. If no errors are detected, the project is made User accessible.

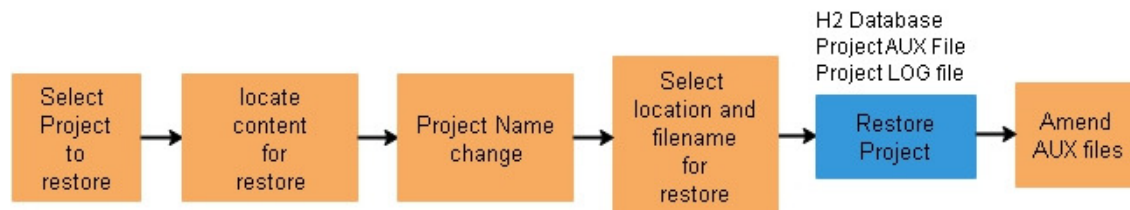
### Rules for Project Restore

- 1) Cannot restore over an existing project from a backup (i.e. same filename, location)
- 2) Can restore from a selected backup to a new location (with same or new filename)
- 3) Can restore from a selected backup to the same location (as the original) but must then have a new file name.

This arrangement ensures that there is no loss of User entries when a project is restored from an earlier backup of a multi-user shared project. It may require User and/or Administrator attention to deal with data differences, and enable return to use of a single Project. It will also create multiple entries for the same Project in the Recorded Projects list – differentiated only in the display by the Last Edited data.

The Project Restore function is subject to User Rights (implementation to be determined).

#### Process Overview



#### **PROJECT FILESET**

A set of files required for normal use of HRE projects consists of:

- an H2 database
- A 'User' Auxiliary file
- folders of external files (images, etc) [optional].

Refer to *03.32 Overview – Auxiliary (Non Database) Files* for details.

#### Issues

1. The number of Backup files – assumed there is a zipped backup of the project database and an optional second zipped file for external files.

#### **LOOK AND FEEL**

The window has several parts:

- The upper right icon buttons provide the following universal features:
  - the 'Reminder' icon displays the Reminder content for this window
  - the 'Help' icon displays context Help about the use of this window.
- The "Recorded Projects" table provides a list of projects known to the User, from which a User selection is made of the project to be restored. By default, the last used Project will be displayed at the top of the list
- Where the selected project is 'shared', Server Login action is invoked using stored project detail
- The From Backup area displays the 'Project Name', 'Filename' and folder detail of the selected project
- The "Summary" button opens the GUI\_ProjectSummary module to display the details of the selected project
- The Restore Contents checkbox enables the user to select if External files connected to the project are to be restored (this replicates the checkbox in the Project Backup module). When selected, an additional window is opened to provide additional user selections
- The Restore to "Browse" button allows the user to select a folder and a restored project filename. The original Project name or the folder or filename must be changed
- The buttons:
  - "Restore" performs the restore project functions on the selected project
  - "Cancel" exits without action.

Project Restore

**Known Projects**

Project Name	Filename	Local/Remote
HRE Sample project	HRE Sample database v16d	Local
HRE Seed project	HRE Sample database2 v16d	Local

**From Backup**

Selected Project

Backup Filename

Backup Folder

Browse Backup

Restore Contents

☐ Restore external reference files

Summary

**Restore to a New Project**

Browse

New Project Name

-- enter new Project Name --

Zipped File

To Folder

Cancel

Restore

PROJECT RESTORE Window

External File Restore

**External Files**

From

Browse...

Filename:

Folder:

**To**

Zipped Backup folder	Restore To folder

Cancel

Accept

Sub-window for External file restore locations

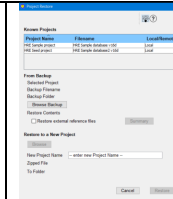
Shape, Size, Color, Layout etc. determined in design.

#### On screen location

Initially inherited from the HRE main display

Window located immediately below the Project menu button

On screen location is the only User changeable setting



Operation of the code allows the user to ‘change their mind’ about the project to be restored. When such a change occurs, displayed fields are made blank and the Restore Contents checkbox is returned to its default (unchecked) condition.

## ACTIONS

The fundamental operations are:

1. Open the window
2. Allow the user to select a project for restoring from a backup
3. Where the project resides on a server for shared access, server login action is invoked
4. Allow the user to select where the backup file will be restored to
5. Allow the user to select what contents from the External file backup is to be restored, and the location where they are to be restored to
6. **Perform the restore operation**
  - **Check the validity of the H2 database, performing a ‘Data Validation’ check**  
**This process is as yet to be defined, but will create a log file.**  
**If the restore process creates an Error:**
    - i. **An Error Message is displayed**
    - ii. **The ‘Restore’ process is ‘failed’ and the newly restored project files deleted.**
  - **A database version check is performed, to confirm that the version is current. When the restored database is an older version, it is updated, and the Data Validation check performed again**
7. When the restoration action is successful, entries are added in the initiating User Auxiliary file and in the User Auxiliary files of all Users of the initial project
8. Other Users of the Project are notified of the actions.

## USED BY

HRE users (with Project Restore rights).

## DATA CONTROLLED BY THIS MODULE

(where applicable)

1. Project name, project filename, project folder name
2. External file folder name
3. User AUX files entries.

## REQUIRED DATA CONTROLLED BY OTHER MODULES

1. Recorded projects (from User AUX file).

## REQUIRED SERVICES - Dependencies

First-Order Dependencies	Second-Order Dependencies
04.14 GUI_ProjectSummary	
05.77 GUI_FileChooser	
07.46 BR_Restore	
07.43 BR_ServerServices	
07.11 BR_Logging	
07.xx BR_ServerLogin	

## APPLICATION PROGRAMMING INTERFACE (API)

1. Single call, with no parameters.

## LOGGING

Use of this module **will** create log entries.

### Commit Logging

This occurs for each of the following functions – in the listed tables:

Function	Database Table
Project – name change (if applicable)	204
Session – Open & Close time	128
Move and/or resize window	305/306?

Applied to the restored project.

### General Log

Much of the activity in this module is hidden from the User.

Extensive use is then made of the general logging to record the activity.

### User

In the Process flowchart – these log entries are illustrated as follows:



Module ID, Date, Time and Event record for each of the following (if applicable):

- External file inclusion (details)
- New project (restored) entry (Project name, server name, folder, filename).

### Server

In the Process flowchart – these log entries are illustrated as follows:



Client ID, Date, Time and Event record for each of the following (if applicable):

- Project restore initiated
- External file paths amended
- Validation errors – process abort
- Database version check (& result)
- Database upgrade application
- Run Data Validation (Updated database)
- Queue message to all Users re restored project
- All User AUX file updated.

## EVENT ACTIONS

### 1) Keyboard actions

Enter a new Project name (if applicable)

Enter a folder name for the restored Project in the OS file explorer (if applicable)

Enter a new filename for the restored Project in the OS file explorer (if applicable)

Enter folder and filenames for External files (if applicable).

### 2) Mouse actions

Drag and drop mouse actions to move and resize the window

Setting changes saved to database for User>Project>Window

#### Left key

- a. click on Server name pulldown expands Server list, and allows selection
- b. click on a Project record, selects that project

- c. click on the Browse button opens the OS file Explorer allowing the user to view the file system to select an existing Folder and Filename, or enter a new name
- d. click on the 'un-checked' check boxes in the Restore Content area, causes the check box to be 'checked', the option selected, and an additional GUI window opened enabling the User to selected additional options. A second click, reverses the process (cancelling any additional selections)
- e. click on each button, operates the button
- f. click on icons (detailed below).

#### Right key

To be determined

#### 3) Icon actions

- a. left mouse key click on icons in the Window Control group:  
'X' icon (closes the window)  
NOTE: Same action as in use of the 'Cancel' button
- b. left mouse key click on 'Reminder' icon:  
(opens 'Reminder' window for this 'Project Restore' display)
- c. left mouse click on 'Help ' icon:  
(opens the Help System, searches for the section on 'Project Restore').

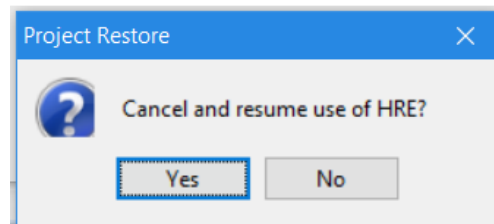
#### 4) Keyboard shortcuts

To be determined

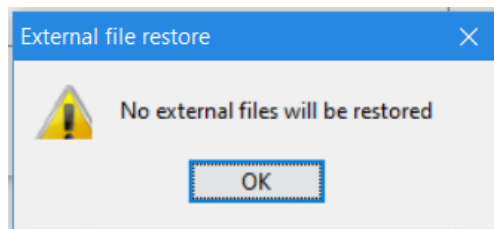
### **WARNING CONDITIONS**

Display Locations: centered over the Cancel button

1. When the 'Cancel' button is used from the main Restore window, a confirmation message is displayed.



2. When the 'Cancel' button is used from the Restore sub-window (for External files), a warning message is displayed:



#### Message Display bypass

A user option allows for bypass of Confirmation Messages.

### **ERROR CONDITIONS**

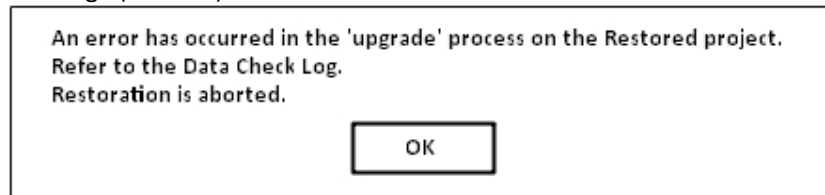
Display Location: centered on the GUI\_ProjectRestore window

1. An error may occur in the restoration process – detected by the DataValidation check.  
Error Message (EM-PR1)



2. An error may occur as a result of the database version upgrade process on a restored project – detected by the DataValidation check.

Error Message (EM-PR2)



Implement using the Message element of a JOptionPane.

## MESSAGES

### Server scenario

Created in and sent from Server to Client

<p>Message M_S_C_1</p> <p>Uses Server Broadcast Message Pattern GUI_Message (SB)</p> <p>Sent to one Client User initiating the 'restore' process</p>	<p>Subject: Project Restore</p> <p>From: Server</p> <p>Text Message: Either the Server is currently taking other actions on the project, or you do not have 'RIGHTS' to restore the project.</p> <p>Requested by: User name</p> <p>Project name: Project name</p> <p>Project folder: Folder name</p> <p>Project filename: Filename</p>
<p>Message M_S_C_2</p> <p>Uses Server Broadcast Message Pattern GUI_Message (SB)</p> <p>Sent to all current users of the selected project</p>	<p>Subject: Project Restore</p> <p>From: Server</p> <p>Text Message: Project restore queued – multiple users. Restore will occur when all users are disconnected from the project.</p> <p>Requested by: User name</p> <p>Project name: Project name</p> <p>Project folder: Folder name</p> <p>Project filename: Filename</p>
<p>Message M_S_C_3</p>	<p>Subject: Project Restore</p> <p>From: Server</p> <p>Text Message:</p>



<p>Uses Server Broadcast Message Pattern GUI_Message (SB)</p> <p>Sent to one Client initiating the process</p>	<p><b>Project restore successful.</b></p> <p>Requested by: User name Project name: Project name Project folder: Folder name Project filename: Filename</p>
<p>Message M_S_C_4</p> <p>Uses Server Broadcast Message Pattern GUI_Message (SB)</p> <p>Sent to all Client Users (except initiator) recorded in the Project AUX file, with access to the origination project</p> <p>Queued till next Login</p>	<p>Subject: Project Restore From: Server Text Message: <b>This Project has been restored.</b></p> <p>Requested by: User name Project name: Project name Project folder: Folder name Project filename: Filename</p>
<p>Message M_S_C_5</p> <p>Uses Server Broadcast Message Pattern GUI_Message (SB)</p> <p>Sent to all Client Users (including initiator) recorded in the Project AUX file, with access to the origination project</p> <p>Queued as necessary till next Login</p>	<p>Subject: Project Restore From: Server Text Message: <b>Project restore failed. Error detected. Refer to Data Check Log. Process aborted.</b></p> <p>Requested by: User name Project name: Project name Project folder: Folder name Project filename: Filename</p>
<p>Message M_S_C_6</p> <p>Uses Server Broadcast Message Pattern GUI_Message (SB)</p> <p>Sent to the Administrator advising attempt to Restore a project – without RIGHTS</p> <p>Queued as necessary till next Login</p>	<p>Subject: Project Restore From: Server Text Message: <b>A request was made to restore this Project by the User, without RIGHTS.</b></p> <p>Requested by: User name Project name: Project name Project folder: Folder name Project filename: Filename</p>
<p>Message M_S_C_7</p> <p>Uses Server Broadcast Message Pattern GUI_Message (SB)</p> <p>Sent to all Client Users (excluding initiator) advising a failed attempt to Restore the project</p>	<p>Subject: Project Restore From: Server Text Message: <b>Project restore failed.</b></p> <p>Requested by: User name Project name: Project name Project folder: Folder name Project filename: Filename</p>

Queued as necessary till next Login	
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Message window location: centred on the GUI\_ProjectRestore window

Message window location (for Administrator) - **how to deal with this??**

Message designator:

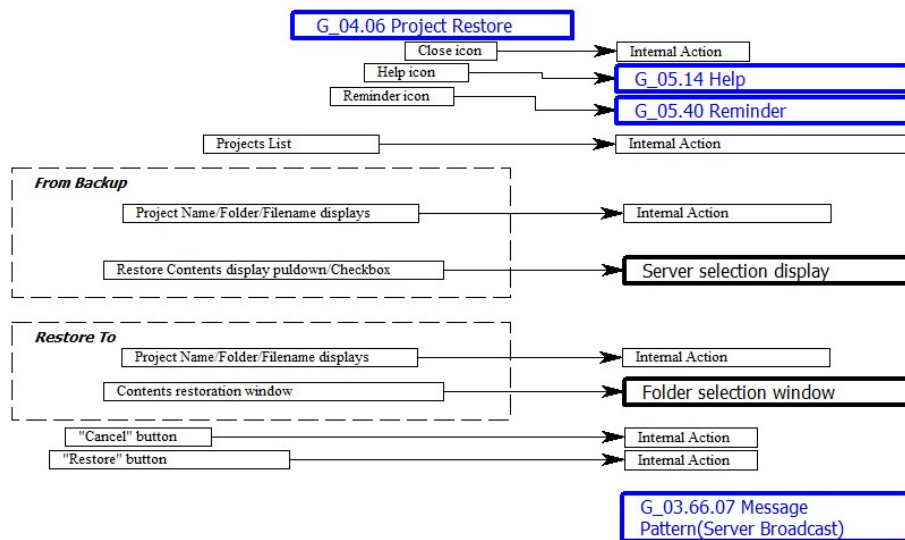
- 1) M\_ signifies a message
- 2) X\_ source
- 3) Y\_ destination
- 4) Z distinguishing number for this window

Messages from the Server to the Client utilize the Server Broadcast Message Pattern.

Such messages result in a window opening on the client, to display information (detailed above)

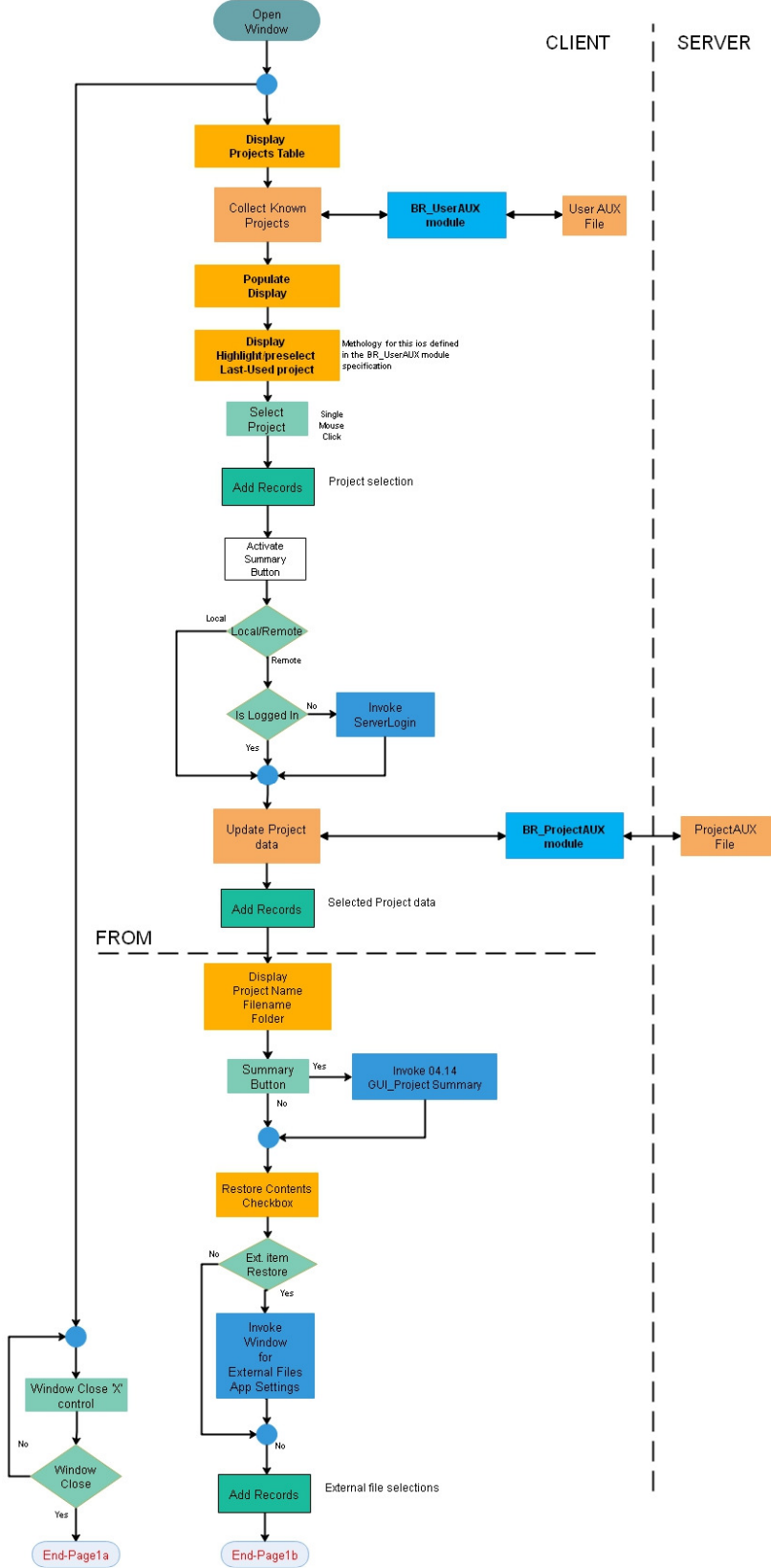
That specification requires amendment to allow use for sending to selected Users.

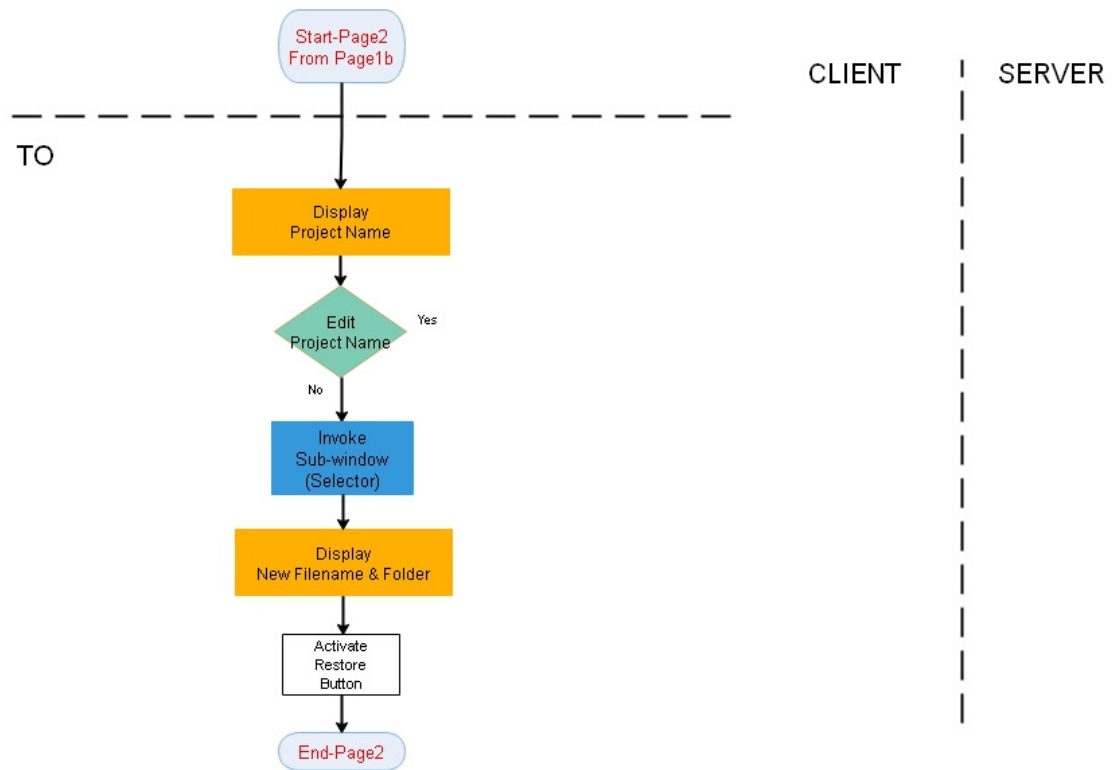
### WINDOW INTERACTION MAP

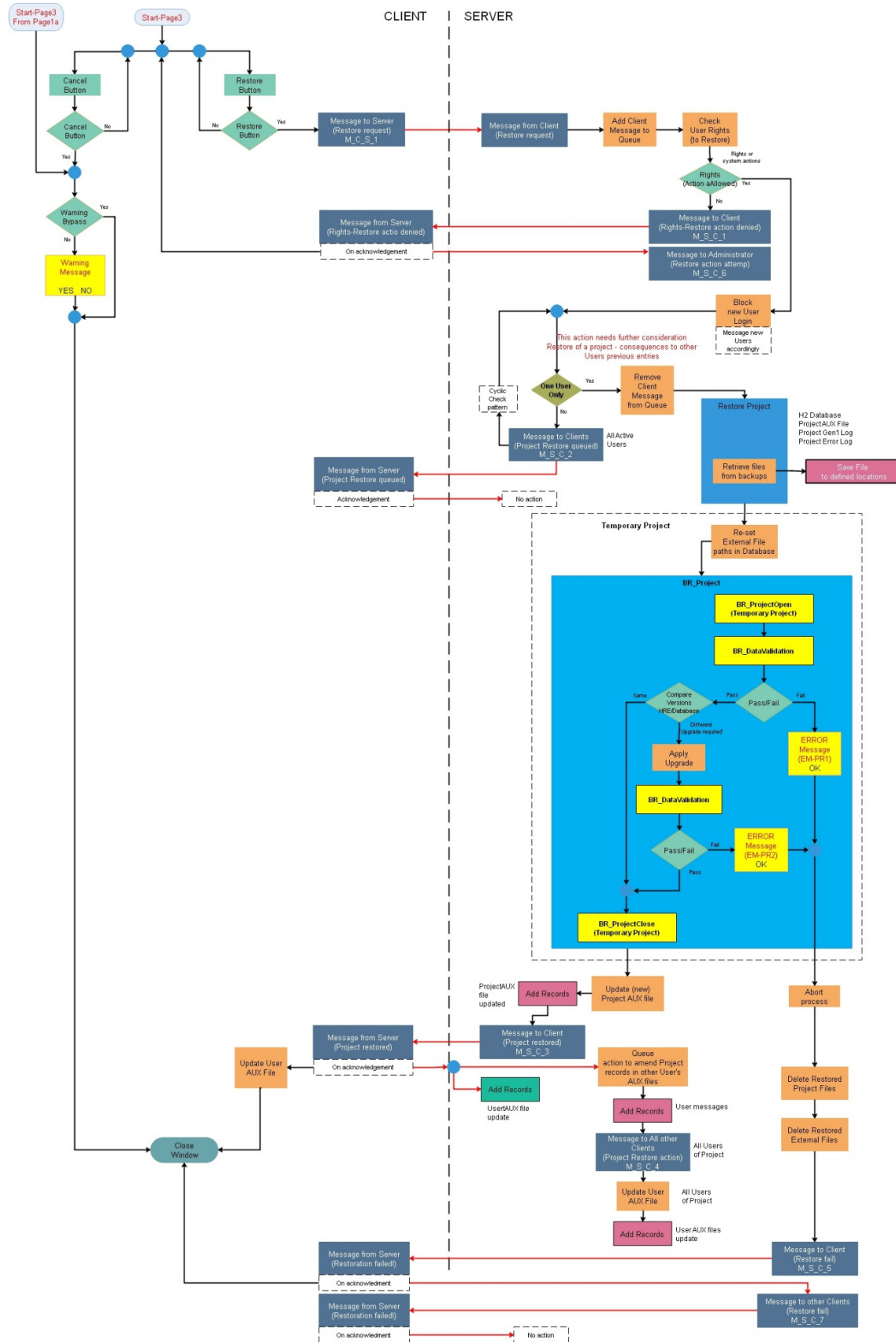


**NB: above map requires change of 03.66.07 to 05.87.07**

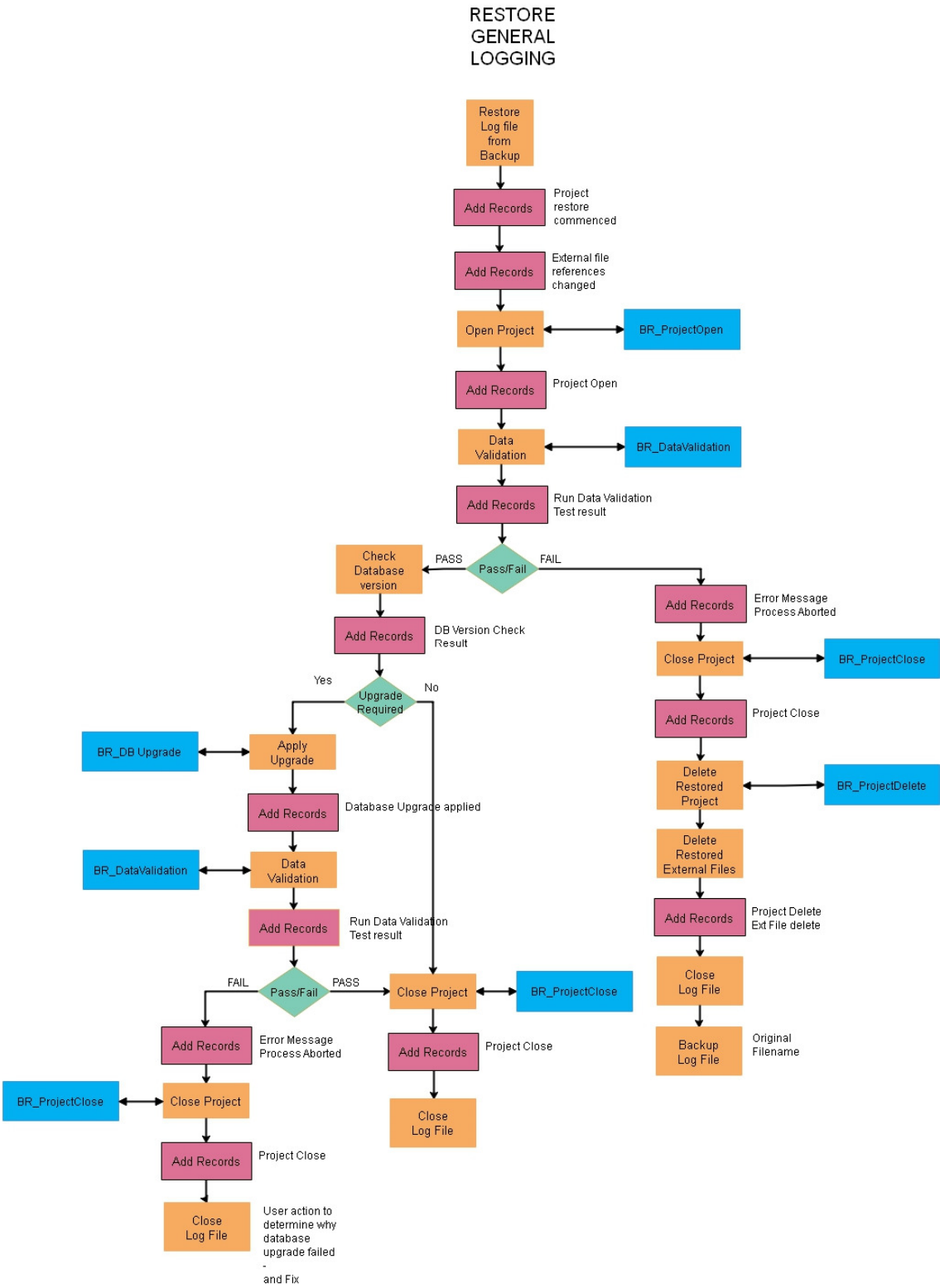
PROCESS FLOW CHART







LOGGING PROCESS



## USE CASES

- 1) HRE Software and Project version differences (Single computer or Client to Single Server)
- 2) HRE Software and Project version differences (Server based multi-user)
- 3) Restoration by a User different from the User that created the backup
- 4) Restore recently backed up project (same User), no external files
- 5) Restoration in a different location from original
- 6) Restoration (with external files).

NOTE: Where the Use Case identifies 'version difference' this can be either a difference in HRE software/database version numbers OR a difference in installed HRE plugins. Where the difference is in installed plugins, a restore should never be allowed, as database corruption may result from either (a) lack of a plugin that was used to create data in the backup file, or (b) installation of a plugin in the software that may cause database corruption or fail of the integrity checks.

### Use Case 1

Single Computer, or Client to Single Server - HRE Software and Project version difference

Where the database version is lower than the software, then the database is in need of upgrading. Where the database version is higher than the software, no restore action is permitted.

Where the upgrade is possible (software determination), then carry out the Restore process, then upgrade the project to the current version.

Save the database, and update AUX file records.

When access is not possible, additional information needs to be provided to the User (i.e., software and database versions).

### Use Case 2

Server based project (multi-user) - HRE Software and Project version difference

An administrator probably determines the software versions of client installations.

Project versions and client HRE's will generally match.

An exception may be a guest client user, in which case rights are likely to be limited.

If rights are open, and the guest user has a newer version of software, then any data saved by the guest user may cause problems for the broader user base, thus no restore can be permitted.

Another exception may exist where multiple organisations share a common project on a server.

Rights will have to determine action taken where a project/software version difference is detected.

Project versions need to be stored in User AUX Files and Database AUX files.

A new specification is required (BR series) to define requirements resulting from HRE software version changes. The presumption is that with each software version upgrade, a set of rules will be established for project database upgrades, which will be embedded in the software.

### Use Case 3

Restoration by a User different from the User that created the backup

Project database backup (old) supplied by Pamela Johnson (or Manchester, England) [backup created by deceased husband-Paul] to Eliza Jackson (of Woop Woop, Victoria). Files supplied as a zip set, on a memory stick. No external files. Files transferred to local computer and unzipped.

Add detail of the restore process to Log file (see below).

Process

- 1) H2 database copied to new location with temporary filename EJ\_HRERestore\_Date/Time.PRJ
- 2) Database AUX file copied to new location with temporary filename EJ\_HRERestore\_Date/Time.JSON
- 3) No external files
- 4) Database integrity check (yet to be defined)  
Information from that process added to the log  
INTEGRITY TEST – PASS or FAIL
- 5) If FAIL, temporary file deleted and user warned the restore failed
- 6) If PASS, rename temporary files to correct names, and update AUX files to match.

Use Case 4

Recently backed up project (same User)

Add detail of the restore process to Log file (see below)

Process

- 1) H2 database copied to new location with temporary filename EJ\_HRERestore\_Date/Time.PRJ
- 2) Database AUX file copied to new location with temporary filename EJ\_HRERestore\_Date/Time.JSON
- 3) No external files
- 4) Database integrity check (yet to be defined)  
Information from that process added to the log  
INTEGRITY TEST – PASS or FAIL
- 5) If FAIL, temporary file deleted and user warned the restore failed
- 6) If PASS, rename temporary files to correct names, and update AUX files to match.

Use Case 5

Restoration in a different location from original

Use Case 6

Project Backup restoration (with external files)



## TESTING

Testing to prove the functionality of this module in use with others of the HRE application.  
Limited 'Project' functionality (see below).

Prior testing of the module in the code development process is assumed.

<u>General requirements</u> HRE installation 1) Single computer 2) Client-Server 3) Test Project database fileset (created by the HRE backup process) Three versions required: (a) Same version as software (b) older version than software (c) newer version than software	<u>Code element requirements</u> Main GUI Project Restore Project Close ExitHRE  BR Modules
<u>Test Project database fileset (created by the HRE backup process)</u> <u>With external files</u>	

## Process

- 1) HRE (Simple restore)
  - a. Open HRE
  - b. Restore the Test Project (v1-same version as HRE software)
  - c. Close the Project
  - d. Restore the Test Project (v2-older version than HRE software)
  - e. Close the Project
  - f. Restore the Test Project (v3-newer version than HRE software)  
(likely this will require an older version of HRE software)  
Expect a rejection of the process.
  - g. Exit HRE
  - h. Check results (how?)
- 2) HRE (restore with external files)
  - a. Open HRE
  - b. Restore the Test Project (v4-with external files)
  - c. Check result (how?)  
Are external files correctly linked?  
Can external files be accessed?