GUI_ProjectRestore – Restore a Project

Revision history

2017-06-21	Robin Lamacraft	Original draft
2018-06-08	Rod Thompson	Replace 'screen' with 'window' Replace 'BR_PanelConfig' with 'BR_WindowConfig' Replace 'BR_Notification" with 'BR_Message Patterns' Add graphic, Window Interaction Map, 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

SCOPE

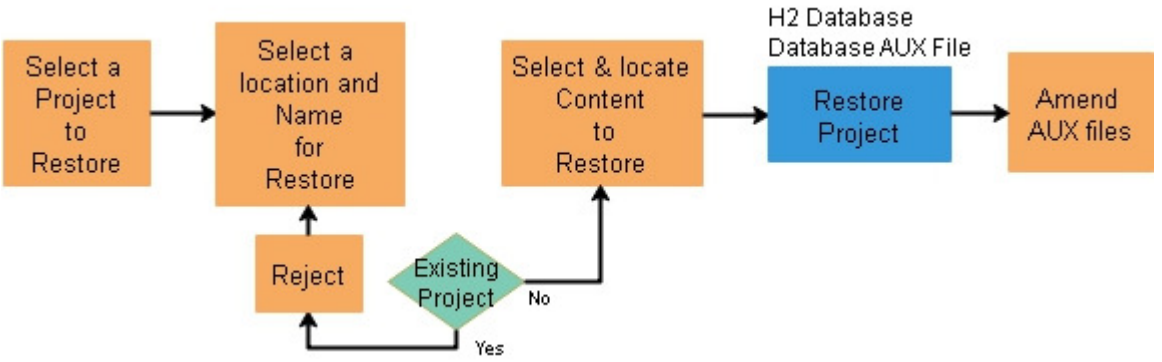
This GUI module is called from the Main Menu (GUI_UserInterface) to restore an HRE project from a backup fileset.

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 and application settings, for which restoration is optional, to selectable locations.

Regression from a backup is allowed. Warning messages are displayed where an existing Project of the same name exists in the selected location for the restoration.

The integrity of the 'restored' project is critical. A rollback system is employed, restoring the project to a temporary project name and location. The project is checked, and where errors occur, warnings issued and actions taken. If no errors are detected, the temporary project is converted to the designated project.

Process Overview



PROJECT FILESET

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

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

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

Issues

The format of the backup file is still to be determined.

LOOK AND FEEL

The content of this window varies:

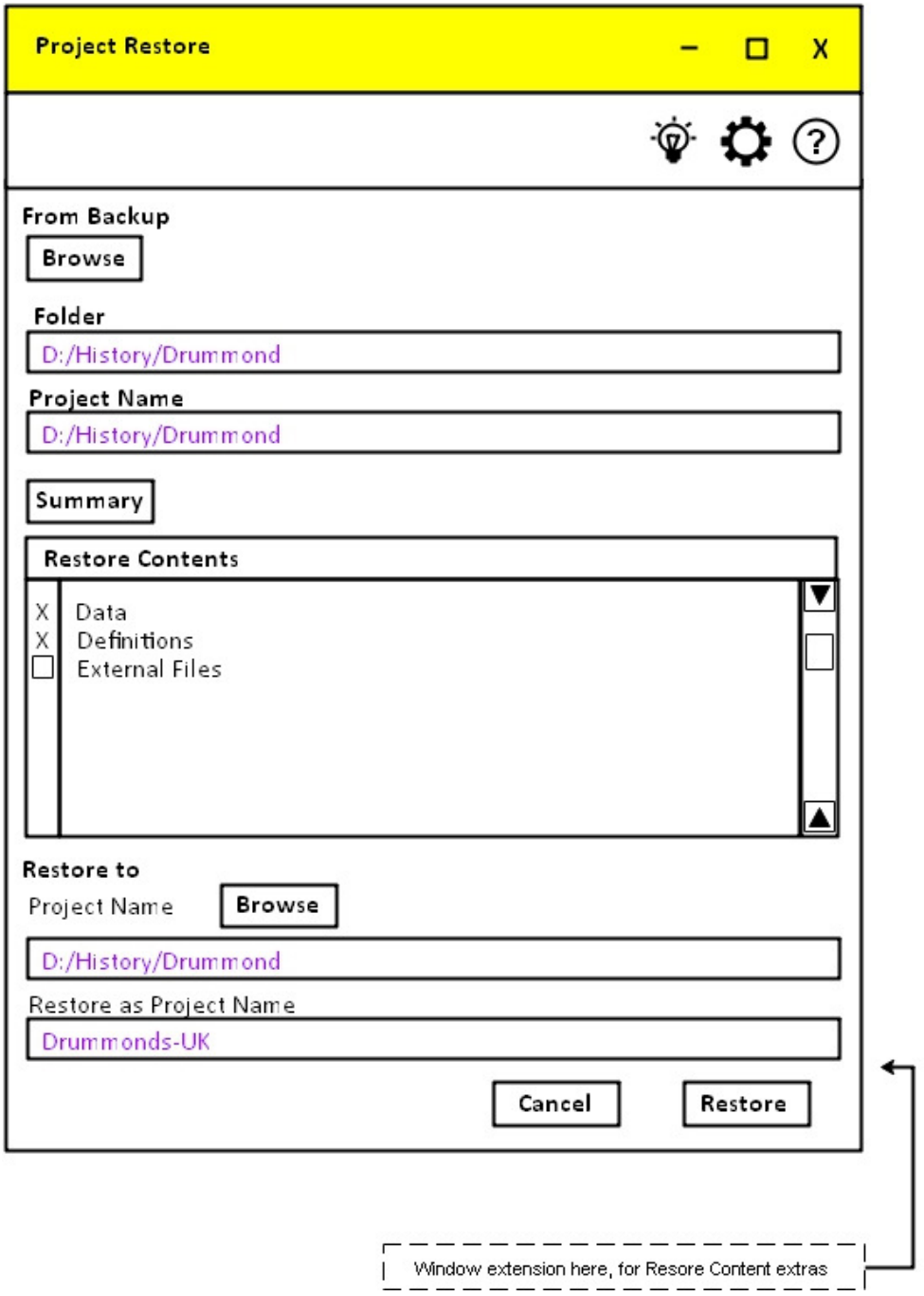
1) with the installation
   Where HRE is used in a single computer/single user scenario, there is no evidence of a Server presence. The window layout varies according to use or not, of a Server.
2) With the selection of 'Restore Contents'.

The window has several parts:

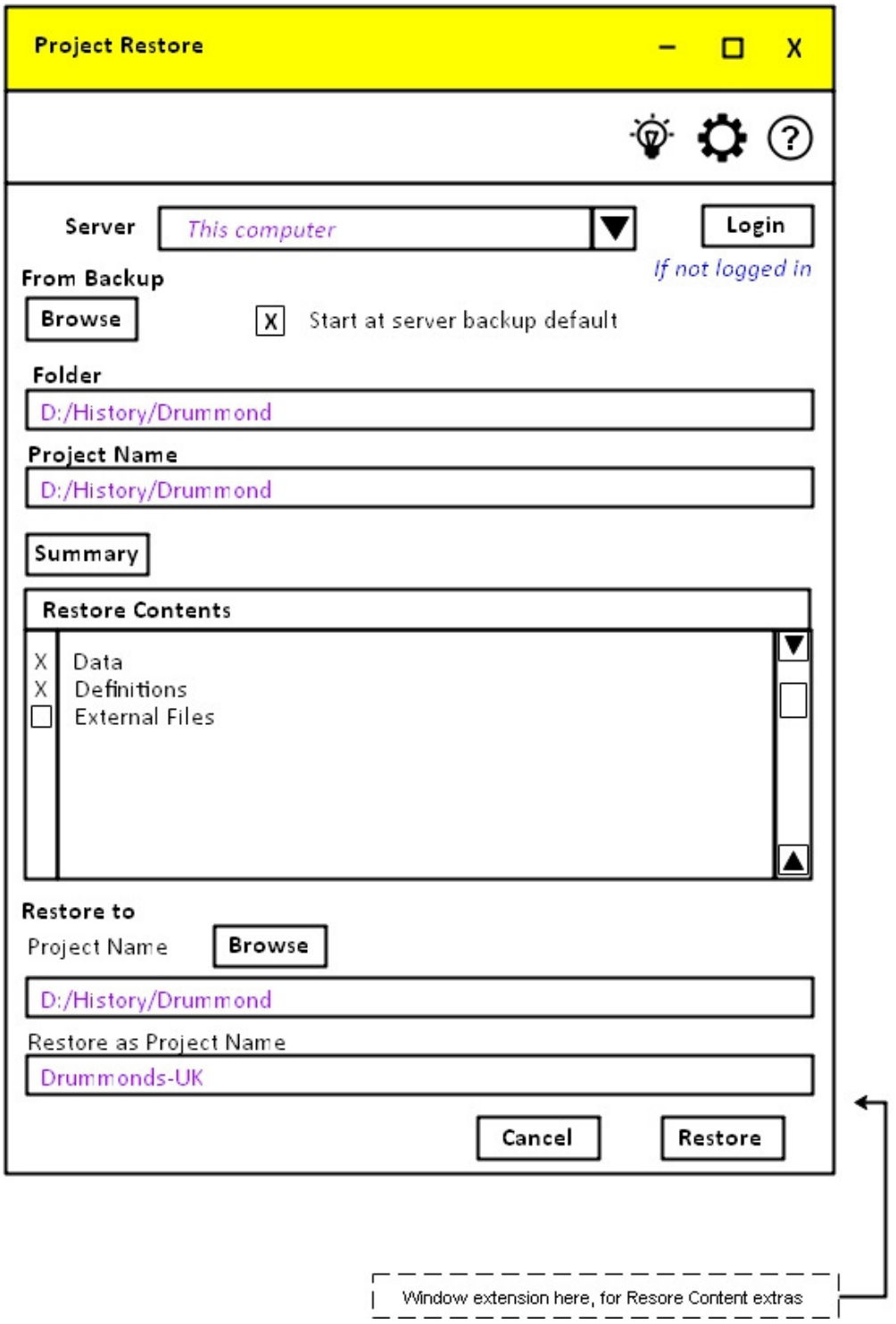
- The upper right icon buttons provide the following universal features:
  - the 'Reminder' icon displays the Reminder content for this window
  - the 'Configuration' icon enables the user to create and retrieve Configurations of this window's layout
  - the 'Help' icon displays context Help about the use of this window
- The "Server" selection list allows selection from various servers known to this installation of HRE. On selection of a Server, the "Login" button allows the user to access that server (if the user is already logged into that server the "Login" button will be hidden). NOTE: If this is an isolated usage of HRE where project files are only used from the same computer then the server aspects of this GUI will not show any server-related elements. There can be a one user environment. If a second computer is used to access those project files over a local network then the login on either computer must invoke the shared server mode
- The From Backup "Browse" button so that the user can select a folder and a project backup file
- The 'Start at server backup default' check box does ??????
- The "Summary" button opens the GUI_ProjectSummary module to display the details of the selected backup project
- The Restore to "Browse" button so that the user can select a folder and a restored project file
  Project regression is allowed.

If the user selects a Project name, where an identically named project exists in the intended destination for the restoration, a warning message is displayed

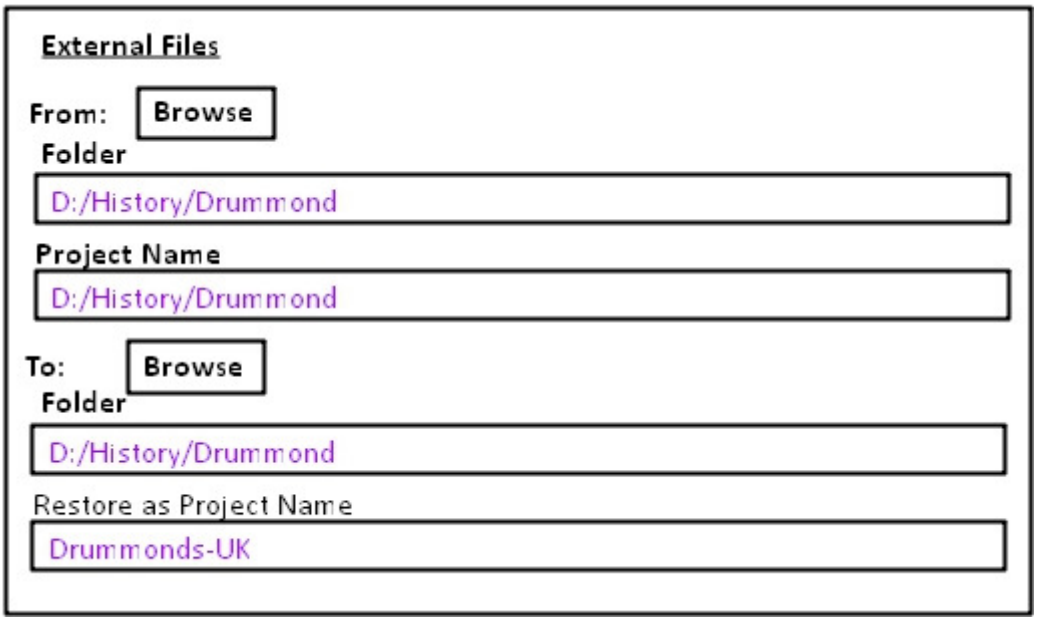
- The Restore Contents checkbox list enables the user to select what content will be restored
  'Data' and 'Definitions' are defaults, and cannot be de-selected.
  When selected, the main window expands to provide additional user selections for 'Images' and 'External Files'
- The buttons:
  - "Restore" performs the restore project functions on the selected project
  - "Cancel" exits without action.



ProjectRestore Window (no Server)– Mockup



ProjectRestore Window (with Server)– Mockup



Window Extension for External files restore

ACTIONS

The fundamental operations are:

1. Open the window according to its saved window Layout (BR_WindowConfig)
2. Allow the user to select one backup file to examine
3. Allow the user to select where the backup file will be restored to
4. Allow the user to select what contents from the backup files is to be restored
5. Perform the restore operation
   - Assign a temporary filename to the restored project files
   - Check the validity of the H2 database and perform a 'project integrity check'
     This process is as yet to be defined, but it is assumed that the process will create a log.
     If the restore process creates an Error:
       i. An Error Message is displayed
       ii. The 'Restore' process is 'failed' and the temporary project files deleted.
   - The filename of the restored project consists of the Project name, and the date and time at which the Project files are saved
   - When the restoration action is successful, update entries in the User Auxiliary file, and the Database Auxiliary file for the restored Project
6. Other Users of the Project are to be notified of the actions.

USED BY

All HRE users.

DATA CONTROLLED BY THIS MODULE

1. None.

REQUIRED DATA CONTROLLED BY OTHER MODULES

1. None.

REQUIRED SERVICES - Dependencies

First-Order Dependencies	Second-Order Dependencies	Higher-Order Dependencies
04.14 GUI_ProjectSummary	07.17 BR_WindowConfig	07.06 BR_GuiElement
		07.02 BR_EntityLink
		07.29 BR_Translation
		BR_FieldTranslation
		03.66 GUI_Message Patterns
	07.21 BR_Project	07.06 BR_GuiElement
		07.02 BR_EntityLink
		07.29 BR_Translation
		07.03 BR_FieldDefinition
05.75 GUI_Server Login	03.68 GUI_Select Configuration	Needed
	07.24 BR_Setting	BR_AppData
		BR_UserData
		07.02 BR_EntityLink
	07.17 BR_WindowConfig	See above
	03.66 GUI_Message Patterns	07.02 BR_EntityLink
		07.01 BR_EncodedString
		07.11 BR_Logging
		Call Stack
		07.24 BR_Setting
		GUI Translation
03.66 GUI_Message Patterns	NIL	
07.17 BR_WindowConfig	07.06 BR_GuiElement	07.01 BR_EncodedString
		07.02 BR_EntityLink
		BR_FieldTranslation
		07.16 BR_MessagePattern
	07.02 BR_EntityLink	Needed
	07.29 BR_Translation	07.02 BR_EntityLink
		BR_Field
		07.06 BR_GUIElement
		07.16 BR_MessagePatterns
	07.16 BR_MessagePatterns	See above
07.04 BR_Files	Local file system interface modules Remote server connection modules Remote or ext. file system modules	
	07.16 BR_MessagePatterns	See above
	07.21 BR_Project	See above
	07.24 BR_Setting	See above
	07.11 BR_Logging	07.01 BR_EncodedString
		07.02 BR_EntityLink
		BR_FieldTranslation
		07.26 BR_Substitution
	07.25 BR_Schema	See above
	08.01 BCS_Bridge	10.02 SS_DirectRequest
		07.16 BR_MessagePatterns
07.43 BR_ServerServices	????	
07.16 BR_MessagePatterns	See above	
07.21 BR_Project	07.06 BR_GuiElement	See above
	07.02 BR_EntityLink	See above
	07.29 BR_Translation	See above
	07.03 BR_FieldDefinition	Needed

APPLICATION PROGRAMMING INTERFACE (API)

1. Single call, with no parameters

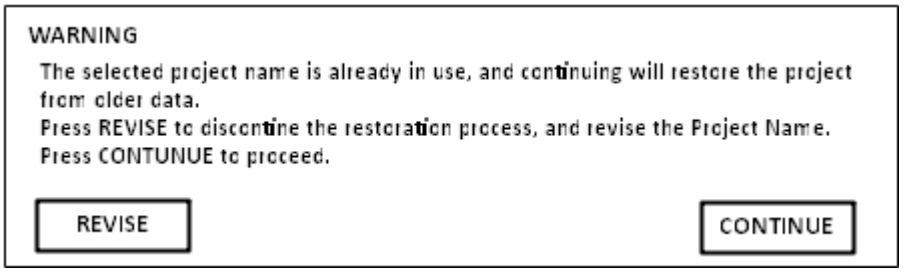
EVENT ACTIONS

1) Keyboard actions
   NIL
2) Mouse actions
   Left key
   a. click on Server name pulldown expands Server list, and allows selection
   b. click on a Project Name, causes the project name to be shown in the text box, associated with the Summary button
   c. click on the Browse button opens the Windows Explorer allowing the user to view the file system to select an existing Folder and Filename, or enter a new Filename
   d. click on the 'un-checked' check box in the Restore Content display, causes the check box to be 'checked', and the option selected. A second click, reverses the process.
   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:
      a. 'X' icon
         (closes the window)
         NOTE: Same action as in use of the 'Cancel' button
      b. 'Box' icon
         Toggles the window size between full window, and the preset window size
      c. 'Dash' icon
         Minimizes the window, to an icon on the window toolbar.
         A click on the toolbar icon restores the display to its previous setting
   b. left mouse key click on 'Reminder' icon:
      (opens 'Reminder' window for this 'Send to Colleague' Message display)
   c. left mouse key click on the 'Configuration' icon
      (opens the Configuration Window for this Project Open window)
   d. left mouse click on 'Help ' icon:
      (opens the Help System, searches for the section on 'Send to Colleague Message')
4) Keyboard shortcuts
   To be determined

WARNING CONDITIONS

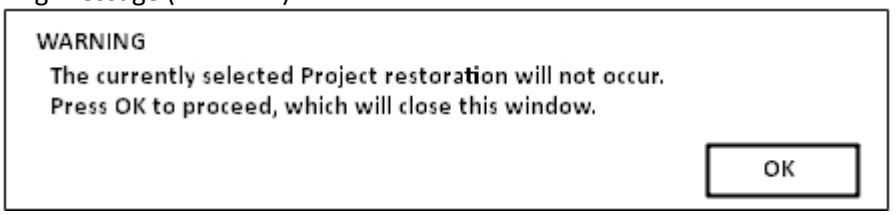
1. When Project regression will occur as a consequence of the user selected Project name and location, a warning message is displayed.
   Warning Message (WM-PR1)



   Text Version
   The selected project name is already in use, and continuing will restore the project from older data.

Press REVISE to discontinue the restoration process, and revise the Project Name.
Press CONTINUE to proceed.

2. When the 'Cancel' button is used, a warning message is displayed.
   Warning Message (WM-PR2)

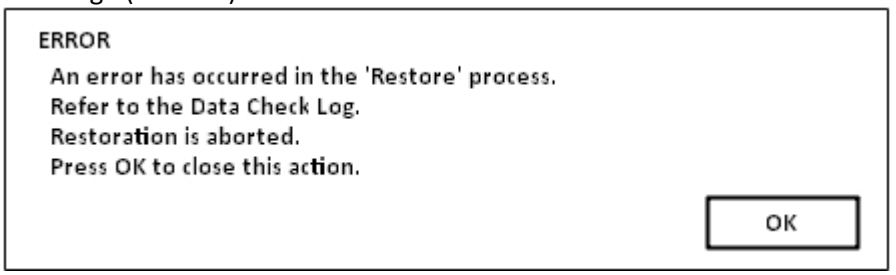


Text Version
WARNING
The currently selected Project restoration will not occur.
Press OK to proceed, which will close this window.

ERROR CONDITIONS

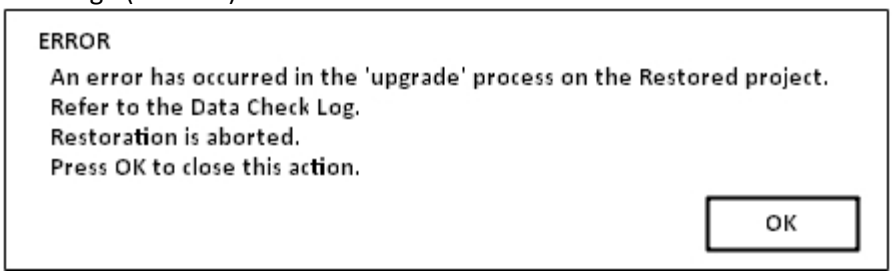
Single computer/single user scenario

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



Text Version
ERROR
An error has occurred in the 'Restore' process.
Refer to the Data Check Log.
Restoration is aborted.
Press OK to close this action.

2. An error may occur in the upgrade process on a restored project – detected by the Data Check.
   Error Message (EM-PR2)



Text Version
ERROR
An error has occurred in the 'upgrade' process on the Restored project.
Refer to the Data Check Log.
Restoration is aborted.
Press OK to close this action.

MESSAGES

Server scenario

Created in and sent from Server to Client

Message M_S_C_1 Uses Server Broadcast Message Pattern GUI_Message (SB) Sent to one Client User initiating the 'restore' process	Subject: Project Restore From: Server Text Message: Either the Server is currently taking other actions on the project, or you do not have 'RIGHTS' to restore the project. Requested by: User name Project name: Project name Project folder: Folder name Project filename: Filename
Message M_S_C_2 Uses Server Broadcast Message Pattern GUI_Message (SB) Sent to all current users of the selected project	Subject: Project Restore From: Server Text Message: Project restore queued – multiple users. Restore will occur when all users are disconnected from the project. Requested by: User name Project name: Project name Project folder: Folder name Project filename: Filename
Message M_S_C_3 Uses Server Broadcast Message Pattern GUI_Message (SB) Sent to one Client initiating the process	Subject: Project Restore From: Server Text Message: Project restore successful. Requested by: User name Project name: Project name Project folder: Folder name Project filename: Filename
Message M_S_C_4 Uses Server Broadcast Message Pattern GUI_Message (SB) Sent to all Client Users (except initiator) recorded in the Project AUX file, with access to the origination project Queued till next Login	Subject: Project Restore From: Server Text Message: This Project has been restored. Requested by: User name Project name: Project name Project folder: Folder name Project filename: Filename
Message	Subject: Project Restore

M_S_C_4 Uses Server Broadcast Message Pattern GUI_Message (SB) Sent to all Client Users (including initiator) recorded in the Project AUX file, with access to the origination project Queued as necessary till next Login	From: Server Text Message: Project restore failed. Error detected. Refer to Data Check Log. Process aborted. Requested by: User name Project name: Project name Project folder: Folder name Project filename: Filename

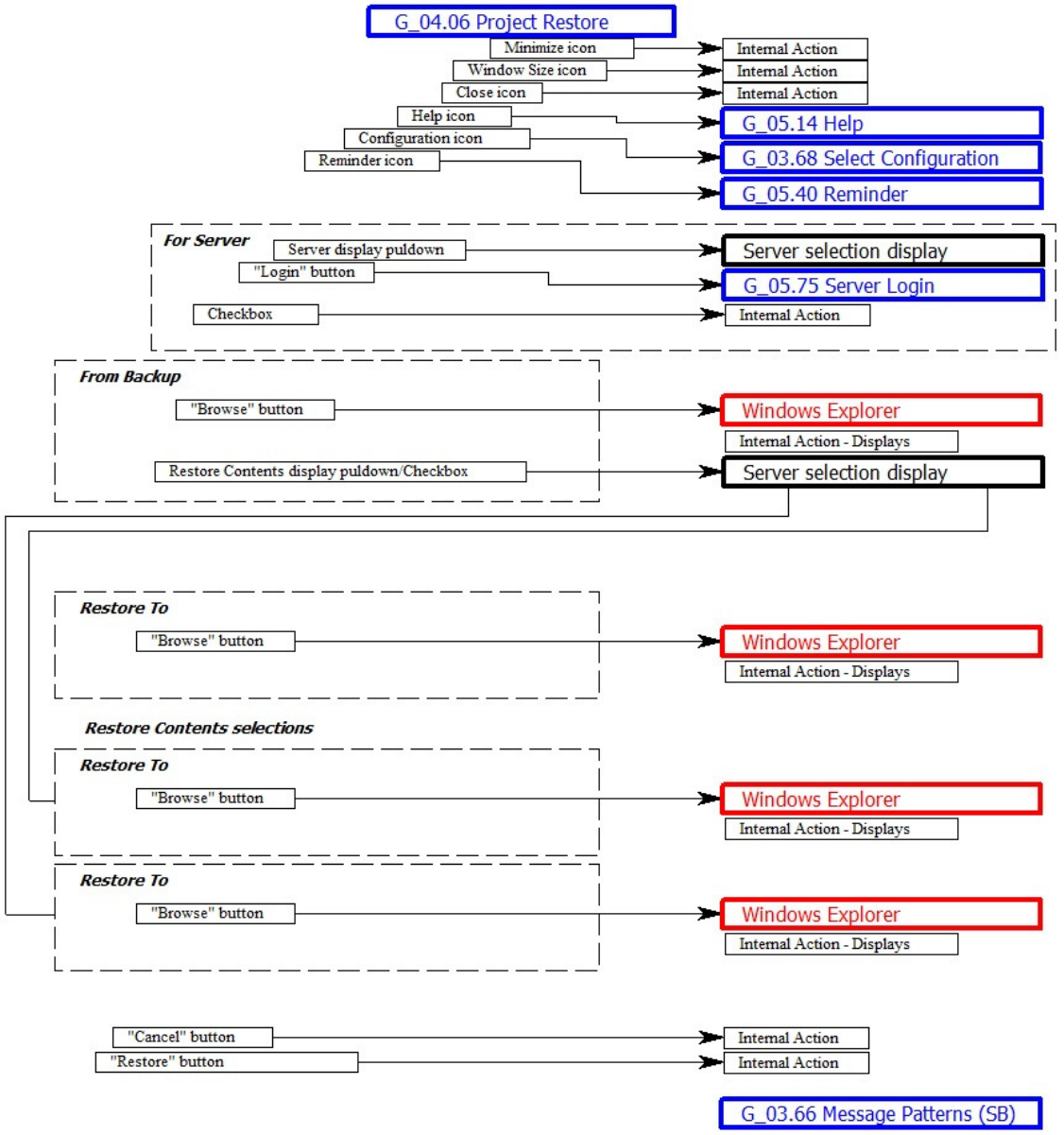
Message window location: centred on the GUI_ProjectRestore window

Message designator:

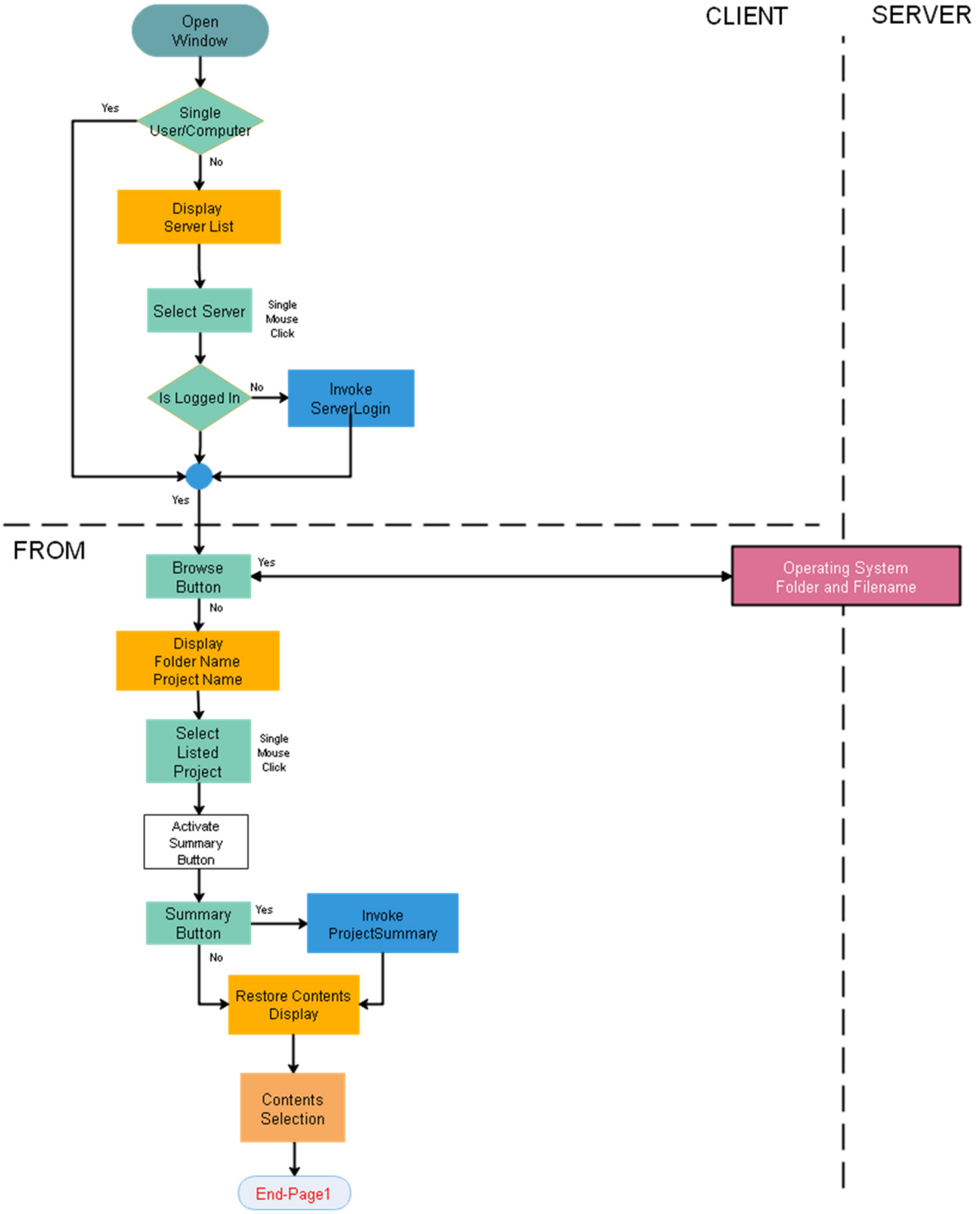
1) M_ signifies a message
2) X_ source
3) Y_ destination
4) Z distinguishing number for this window

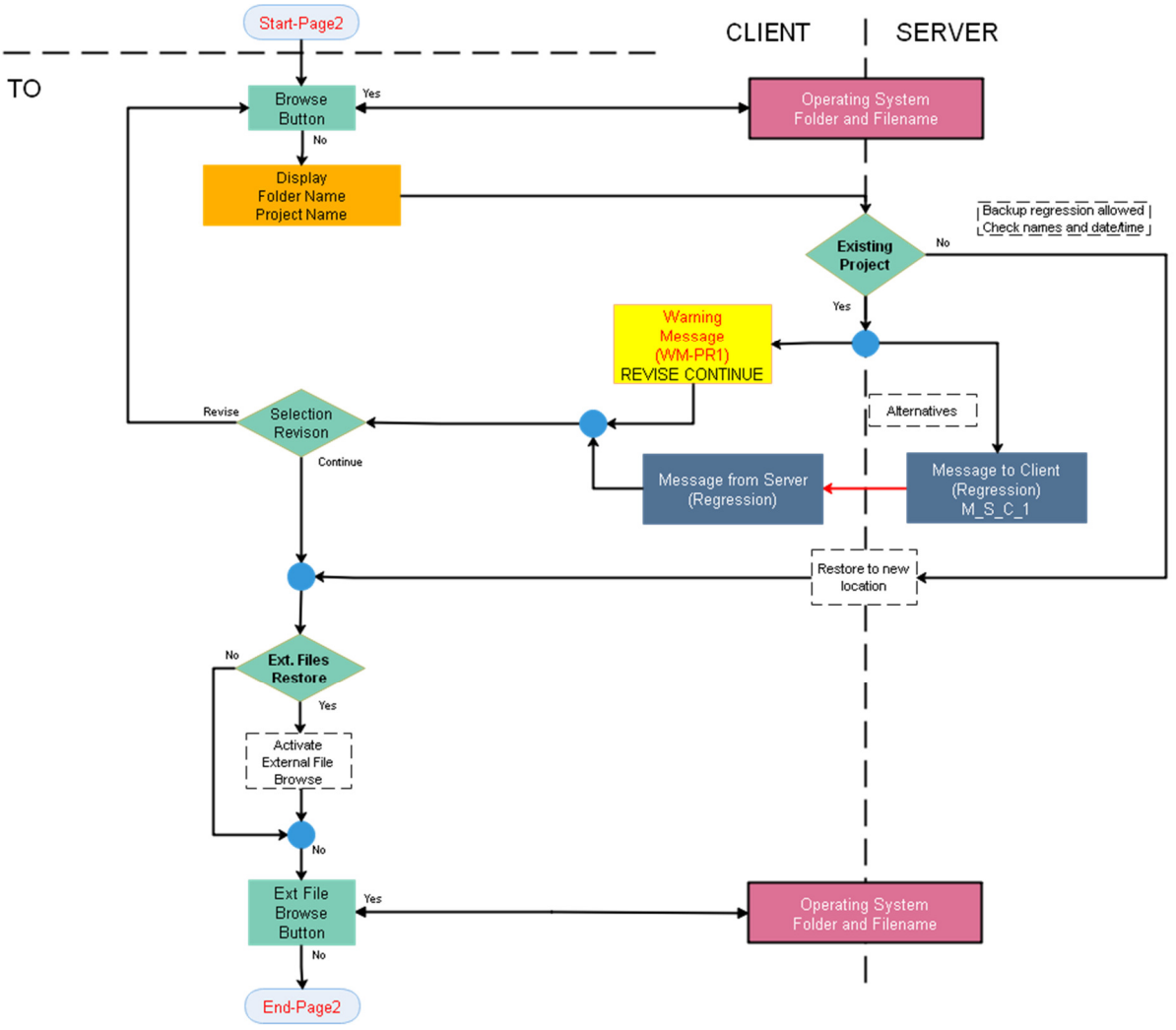
Messages from the Server to the Client utilize the Server Broadcast Message Pattern.
Such messages result in a window opening on the client, to display information (detailed above)
That specification requires amendment to allow use for sending to selected Users.

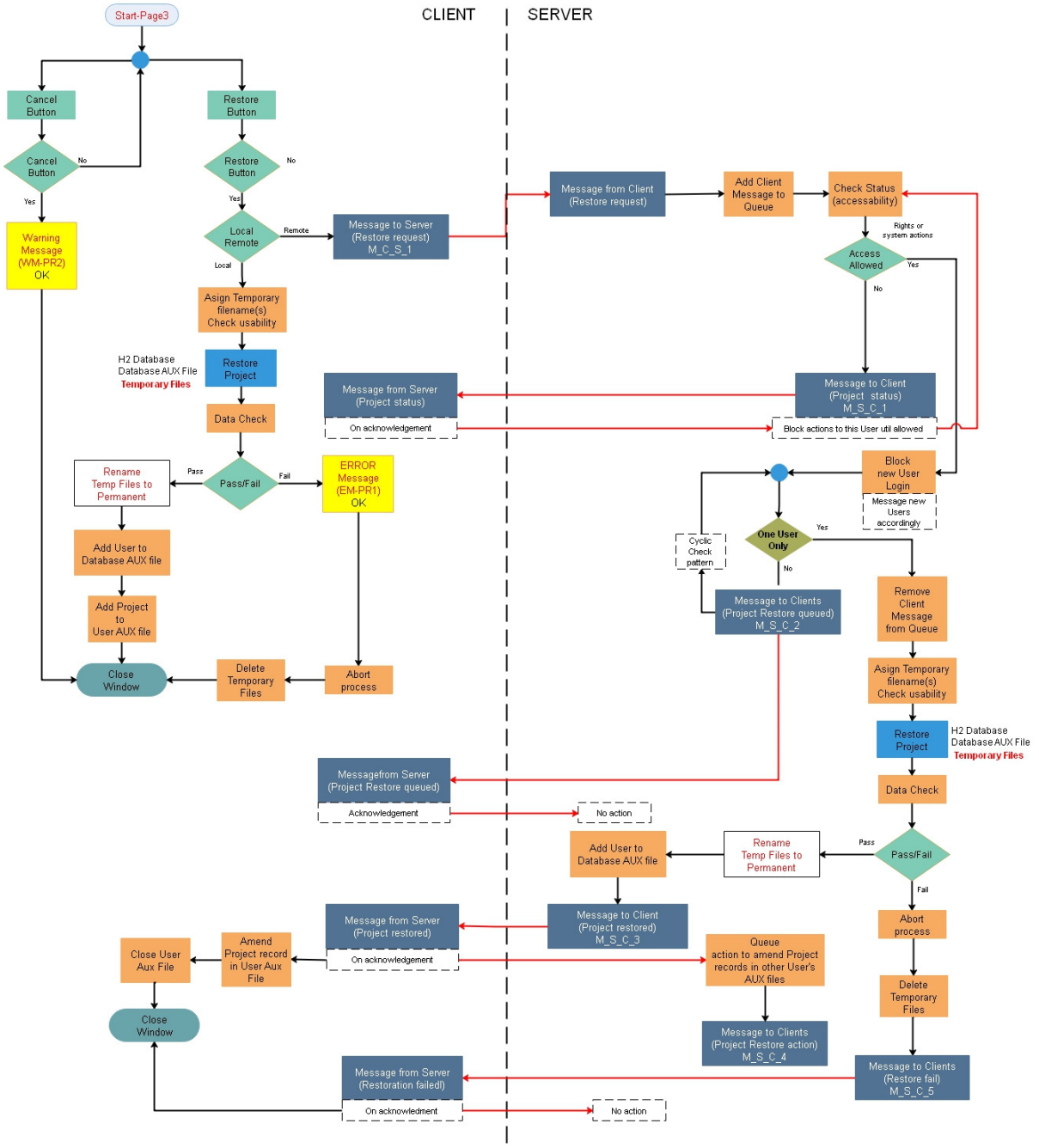
WINDOW INTERACTION MAP


G_04.06 Project Restore
Minimize icon
Window Size icon
Close icon
Help icon
Configuration icon
Reminder icon
Internal Action
Internal Action
Internal Action
G_05.14 Help
G_03.68 Select Configuration
G_05.40 Reminder
For Server
Server display puldown
"Login" button
Checkbox
Server selection display
G_05.75 Server Login
Internal Action
From Backup
"Browse" button
Restore Contents display puldown/Checkbox
Windows Explorer
Internal Action - Displays
Server selection display
Restore To
"Browse" button
Windows Explorer
Internal Action - Displays
Restore Contents selections
Restore To
"Browse" button
Windows Explorer
Internal Action - Displays
Restore To
"Browse" button
Windows Explorer
Internal Action - Displays
"Cancel" button
"Restore" button
Internal Action
Internal Action
G_03.66 Message Patterns (SB)

PROCESS FLOW CHART




Start-Page2
CLIENT
SERVER
TO
Browse Button
Yes
No
Operating System Folder and Filename
Display Folder Name Project Name
Backup regression allowed
Check names and date/time
Existing Project
No
Yes
Warning Message (WM-PR1) REVISE CONTINUE
Alternatives
Revise
Selection Revison
Continue
Message from Server (Regression)
Message to Client (Regression) M_S_C_1
Restore to new location
No
Ext. Files Restore
Yes
Activate External File Browse
No
Ext File Browse Button
Yes
Operating System Folder and Filename
No
End-Page2


Start-Page3
CLIENT
SERVER
Cancel Button
Cancel Button
No
Yes
Warning Message (WM-PR2) OK
Restore Button
Restore Button
No
Yes
Local Remote
Remote
Local
Message to Server (Restore request) M_C_S_1
Asign Temporary filename(s) Check usability
H2 Database Database AUX File
Temporary Files
Restore Project
Data Check
Rename Temp Files to Permanent
Pass
Pass/Fail
Fail
ERROR Message (EM-PR1) OK
Add User to Database AUX file
Add Project to User AUX file
Close Window
Delete Temporary Files
Abort process
Message from Client (Restore request)
Add Client Message to Queue
Check Status (accessability)
Rights or system actions
Access Allowed
Yes
No
Message to Client (Project status) M_S_C_1
Block actions to this User util allowed
Message from Server (Project status)
On acknowledgement
Block new User Login
Message new Users accordingly
One User Only
Yes
No
Cyclic Check pattern
Message to Clients (Project Restore queued) M_S_C_2
Remove Client Message from Queue
Asign Temporary filename(s) Check usability
Restore Project
H2 Database Database AUX File
Temporary Files
Data Check
Pass
Pass/Fail
Fail
Abort process
Delete Temporary Files
Message to Clients (Restore fail) M_S_C_5
Rename Temp Files to Permanent
Add User to Database AUX file
Message to Client (Project restored) M_S_C_3
Queue action to amend Project records in other User's AUX files
Message to Clients (Project Restore action) M_S_C_4
Messagefrom Server (Project Restore queued)
Acknowledgement
No action
Message from Server (Project restored)
On acknowledgement
Amend Project record in User Aux File
Close User Aux File
Close Window
Message from Server (Restoration failed!)
On acknowledment
No action

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)

PROJECT RESTORATION LOG ENTRIES

Assume restore of temporary files to the specified restore location.

Restoration Log requirements assumes accepted Project Name, valid user rights.

User Name (the person initiating the request)
Restore date
User AUX filename
User location
User contact email

Project Name (to be restored)
Backup date
Backup filename
Backup location
Backup Content (external files)
External file folder locations
User list (from Database AUX file-backup)

Restore Project Name (highlight if regression)
Restore location
Restore filename
Restore Content (external files)
External file folder locations

User list (restored Project) (User undertaking the restore)

Process check list

1) Copy H2 database to new location with temporary filename
2) Copy Database AUX file to new location with temporary filename
3) As applicable copy external files to new location
   List all files, with new location paths
   (what of folder name and filename over-writes?)
4) Perform a database integrity check (yet to be defined)
   Check linkages to external files
   Information from that process added to this log
   INTEGRITY TEST – PASS or FAIL

If FAIL

1) Delete the temporary files
   (Problems with over-written external files and folders)
2) Add file/folders deletions in this log

If PASS

1) Rename
2) Update records in AUX files
3) Deal with external files (to be determined)

Example of Log file entries – Use Case 3

User Name	Eliza Jackson
Restore date	27-Jul-2019
User AUX filename	ejackson_UAUX.json

User location	Woop Woop, Victoria, Australia	
User contact email	ejackson4@gmail.com	
Project Name	(to be restored)	
Backup date	13-Jan-2017	
Backup filename	JohnsonUK	
Backup location	C:/Users/elizaj/Documents/Johnson Family/UK/	
Backup Content	NIL	(external files)
External file folder locations	NA	
User list	Paul Johnson	(from Database AUX file-backup)
Restore Project Name	UK_Johnson	(highlight if regression)
Restore location	C:/Users/elizaj/Documents/HRE/Projects	
Restore filename	JohnsonUK	
Restore Content	NO	(external files)
External file folder locations		

Process check list

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 this log
   INTEGRITY TEST – PASS or FAIL

Integrity Test-FAIL

Data integrity check on Project files - FAILED

Failure summary

1) Database file - EJ_HRERestore_Date/Time.PRJ deleted
2) Database AUX file - EJ_HRERestore_Date/Time.JSON deleted

Integrity Test PASS

Data integrity check on Project files - PASSED

1) Database file - EJ_HRERestore_Date/Time.PRJ renamed as JohnsonUK.PRJ
2) Database AUX file - EJ_HRERestore_Date/Time.JSON renamed as JohnsonUK.JSON
3) Database AUX file appended with user record of ejackson.
4) User AUX file appended with record of the UK_Johnson project

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.

General requirements	Code element requirements
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	Main GUI Project Restore Project Close ExitHRE
Test Project database fileset (created by the HRE backup process) With external files	

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?

See Test Plan document