GUI_ProjectBackup – Backup a Project

Revision history

2017-04-04	Don Ferguson	Original draft
2018-05-27	Rod Thompson	Add Mockup window graphics Add Event Actions
2018-05-28	Rod Thompson	Add Window Interaction Map
2018-06-02 & 03	Rod Thompson	Revise Process Flow chart Revise Mockup graphics Add Warning Messages
2018-06-05	Rod Thompson	Revise Process Flow chart Revise ACTIONS Revise MESSAGES Revise Window Interaction Map
2018-06-11	Rod Thompson	Add 'Issues' to SCOPE Revise REQUIRED Services – Dependencies Replace BR_PanelConfig with BR_WindowConfig Add 'Required Service' – Message Patterns
2018-06-29	Rod Thompson	Add INFORMATION DISPLAY Replace Mockup window graphics Replace Process flowchart
2018-11-19	Rod Thompson	Replace Graphics (v7) Remove 'configuration' & window size control icons LOOK AND FEEL – Add window location Update REQUIRED SERVICES – Add 07.11 BR_Logging Additions to WARNING CONDITIONS Add USER RIGHTS section Replace Process Flow Chart Add LOGGING section Add USE CASES and TESTING sections
2019-02-02	Rod Thompson	Replace Window graphic (delete one) (v8) LOOK AND FEEL – replace location graphic LOOK AND FEEL – revise text regarding Progress Display LOOK AND FEEL – add Progress Display section
2019-02-03	R Thompson	TESTING – additions LOOK AND FEEL – amend 'Browse' function ACTIONS – Amend for project selection alternatives
2019-02-04	Rod Thompson	Revise graphics for Project Selector window addition (v9)
2019-02-06	Rod Thompson	LOOK AND FEEL - Add NOTE regarding overlapping layout WARNING CONDITIONS – Revise EVENT ACTIONS – Revise Add new Section – BACKUP FILE Replace Process Flowchart (v9) REQUIRED SEERVICES – Amend for Progress Display Replace WINDOW INTERACTION MAPS (v5) ACTIONS – update Issue - addition
2019-02-07	Rod Thompson	Replace Process Flowchart (v10) Add Issue – Error Messages ERROR CONDITIONS – Add detail LOGGING – Add Error Log detail
2019-02-08	Rod Thompson	Replace Window graphic (v11) LOOK AND FEEL – revise for Summary & Server Login buttons Replace WINDOW INTERACTION MAP (v6)

SCOPE

This GUI module is called from the Main Menu (GUI_UserInterface) or from GUI_ProjectClose, to backup a current project.

Note: it is assumed that a backup can't be performed while others are active on that same project database. It is also assumed that it is not legal to only backup part of a Project database. However some external files (like images) can be optionally included in a backup, also the App settings for this client device.

Issues to be resolved:
- questions arise when considering remote, server-side projects, in relation to authorization, privilege and file locations.
  Impacts also in the 'Restore' process.
- Process Flowchart – disconnect & reconnect of clients
- How is the 'Change' and 'User' data obtained?
- Error Messages and Actions (using Message Pattern 03.68.04)
  Consequences for operation of the GUI code

PROJECT FILESET

A set of files required for normal use of HRE projects consists of:
- an H2 database
- A 'User' Auxiliary file
- A 'Project' Database Auxiliary file
- folders of external files (images, etc).   [optional].

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

BACKUP FILE

The backup file is a ZIP file created on the Server, that contains at least the Project database (zipped) and the AUX files (zipped) for that Project on the Server. It also (optionally) contains backup of other external files like images, etc.

A complete backup is the only way to be able to move a project to another computer.

Default naming convention
Uses the existing Database filename, with the current data and time.

USER RIGHTS

All Users have Project Backup rights.

LOOK AND FEEL

The window has 5 parts:
- A 'From' scrollable display area which shows all of the user's currently open projects, by name and which allows the selection of a file from the displayed list. The list order is that applicable to the opening of the Projects. (this may be empty if no projects are open)
  A display of additional information to the user, relevant to the backup of the Project
- A 'To' scrollable display area which allows the selection of a folder and filename for the backup fileset
- The buttons "Browse" (for each display area), "Server Login", "Summary", "Backup" and "Cancel"
  - The "Browse" buttons allow the user to search the project records in the User AUX file for a valid HRE project to backup. In the 'TO' area, the "Browse" button accesses the file-system for a location to save the backup file

- o The "Server Login" button allows the User to connect to the server where the selected project is located
- o "Summary" button opens the GUI_ProjectSummary module to display the details of the selected project
- o "Backup" performs the project backup functions on the selected project
- o "Cancel" exits without action.
- Check boxes
    - o "Include external referenced files"
    - o "Include App Settings for this client device".
- If the 'Backup' button is used, a Progress Display window opens.

ProjectBackup Window – Mockup (including Project Selector window)

NOTE: In code development, the Project Selector sub-window overlays the Project Backup window.
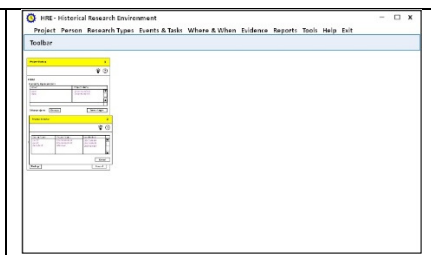
Shape, Size, Color, Layout etc. determined in design. On screen location Initially inherited from the HRE main display Window located immediately below the Project menu button On screen location and scale are the only User changeable settings	

Progress Display

A progress display is called for – using the MESSAGE PATTERN – Action Progress module.

On-screen location:

Initially inherited from the GUI_ExitHRE window

Window located immediately to the right of the window – shifted to the left if the User has relocated the ExitHRE Window such that the Progress Display would exceed the bounds of the Main Window, in which case, shifted to the left side of the ExitHRE window.

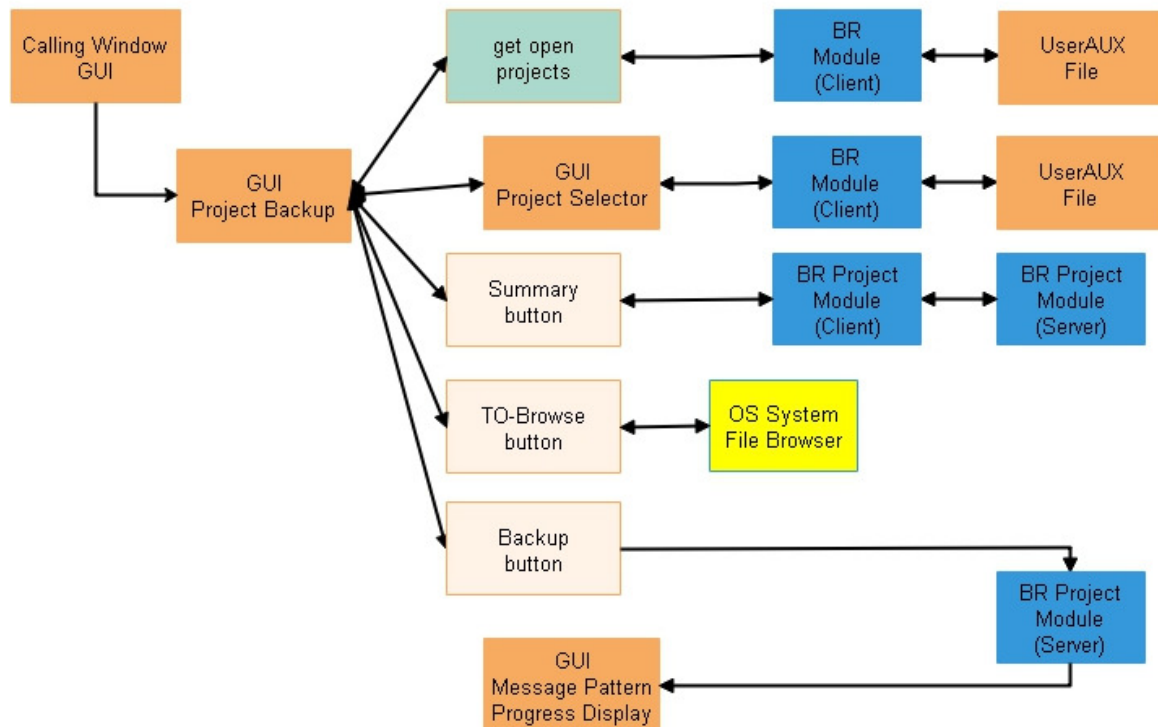Location and size of this window are not User changeable settings.

ACTIONS

The fundamental operations are:

1. Open the window according to its saved window Layout (BR_WindowConfig)
2. Allow selection of an open project, or browse for another project; to be backed up
3. Allows connection to a remote server, when a project (so located) is selected by the User. The Server Login button is made visible by selection of the remotely located project, and re-hidden on use of the 'Cancel' button
4. Use of the Sever Login button invokes the 05.75 GUI_ServerLogin module
5. Allow the User to view a Summary of the project. The Summary button is enabled after selection of a project, and disabled on use of the 'Cancel' button
6. Select whether referenced external files are to be backed up
7. Select whether to include App Settings for this Device
8. Allow selection/entry of a filename and location to save the backup
   The 'Browse' button opens the Operating system File Explorer
9. Wait until all outstanding transactions from this client are completed
10. Queue a backup task for this project within the server
11. Check the number of current users of this project
12. If only one user, then perform a backup task for this project within the server
13. Prevent any further logins to the database until the backup is completed
14. This backup setup task is to be notified to all concurrent users
15. The server to perform that backup as soon as possible when all users have disconnected
16. The backup completion is to be notified to all users registered to receive that notification
17. On completion of backup (one user only), or having messaged the Server of the backup requirement, close the window and return.

The following table illustrates the interaction between code modules as the above actions occur.

Client		Server
GUI module	Other modules	
Display – open project details	BR module Get open project information	BR module Get open project information
Display – open project details	BR module Supply open project information	
FROM-Browse button	05.76 GUI_ProjectSelector	
Server Login	05.75 GUI_Server Login	
Summary Button		
04.14 GUI_ProjectSummary	07.21 BR_Project Get project data	07.21 BR_Project Get project data
Display project data	Supply project data	Supply project data
Display 'Change' information		
Display 'use; information		

TO-Browse button	OS File Explorer	
Backup Button		
Cancel Button		

INFORMATION DISPLAY

This provides the user with information about the Project intended to be backed up, to assist determining further action.

Two parts make up the information set:

1) Project changes
    This gathers two pieces of data, and formats these with words according to a template.
    a. Date Item 1 – the number of changes to the Project since the previous backup
        Example 317
    b. Data Item 2 – the date/time of the previous backup.
        Example 10-Jan-2018, 10:04AM
    Template: NUMBER changes since the last backup on DATE/TIME
        Example: 317 changes since the last update on 10-Jan-2018, 10:04AM

2) Use
    This gives information about current use of the selected project, relevant to backup of the Project.
    The following template 2-line text messages are involved
    a. Single User
        Backup allowed.
    b. Multiple Users
        Backup request will be sent to the Server for later action.

Where there is only one User of the Project, backup can occur immediately.
Where there are multiple active users, backup can occur only when one user remains, and activates either the Backup or Close processes.

Each of these parts is provided by separate text boxes.

USED BY
All HRE users.

DATA CONTROLLED BY THIS MODULE
1. Any open HRE Project.

REQUIRED DATA CONTROLLED BY OTHER MODULES
1. Server names and Project names
2. Data from Project Summary for each open Project.

REQUIRED SERVICES - Dependencies

First-Order Dependencies	Second-Order Dependencies	Higher-Order Dependencies
03.66.04 GUI–MessagePattern-Server Error		
03.66.05 GUI_Message Pattern-Action Progress		
07.17 BR_WindowConfig4	07.06 BR_GuiElement 07.02 BR_EntityLink 07.29 BR_Translation 07.16 BR_MessagePatterns	
07.21 BR_Project	07.06 BR_GuiElement 07.02 BR_EntityLink 07.29 BR_Translation 07.03 BR_FieldDefinition	
07.11 BR_Logging	07.01 BR_EncodedString	Needed
	07.02 BR_EntityLink	Needed
	BR_FieldTranslation	
	07.26 BR_Substitution	07.02 BR_EntityLink
		07.29 BR_Translation
05.76 GUI_ProjectSelector		

APPLICATION PROGRAMMING INTERFACE (API)
1. Single call, 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
Move and/or resize window	305/306?

General Log
Client
Module ID, Date, Time and Event record for each of the following (if applicable)
• Project Selection (Project name and Server)
• Folder and filename for backup

- External file inclusion
- Appl settings inclusion
- Backup button
- Cancel button.

<u>Server</u>

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

- Backup process initiated
- Folder and filename for backup
- Reference for External Files
- Reference for App settings
- Backup process completion.

Error Log

<u>Client</u>

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

- Error Message received

<u>Server</u>

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

- Error Message sent

EVENT ACTIONS

1) Keyboard actions
   Filename for backup (through Operating System)
2) Mouse actions
   Drag and drop mouse actions to move and resize the window
   Setting changes saved to database for User>Project>Window
   <u>Left key</u>
   a. click on Server/Project name pulldown expands Server/Project list
   b. click on a Project record in the Currently Open projects list, selects the project, and causes the project name to be shown in the text box
   c. a click on the Browse button in the FROM section, opens a sub-window allowing User selection of a project which is not open
   d. if a selected project is located on a remote server, a 'Sever Login; button is made visible. A click on this button causes the opening of the 05.75 GUI_Server Login module
   e. a click on the Summary button opens another window to display additional detail about the Project
   f. click on the Browse button (in the TO area) opens the Windows Explorer allowing the user to view the file system (where User rights allow) to select an existing Folder and Filename, or enter a new Filename
   g. click on the 'un-checked' Check box, causes the Check box to be 'checked', and the option selected. A second click, reverses the process
   h. click on the 'Backup' button, initiates the project backup process
   i. click on the 'Cancel' button, cancels any selections and exits the window
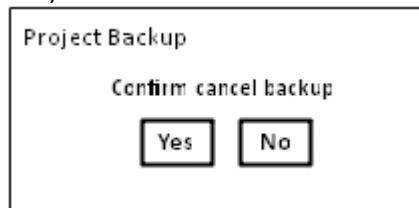   j. click on icons (detailed below).
   <u>Right key</u>
   To be determined
3) Icon actions

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 Backup' window)
c. left mouse click on 'Help' icon:
   (opens the Help System, searches for the section on 'Project Backup' window).
4) Keyboard shortcuts
   To be determined.

WARNING CONDITIONS

Display Location: centered on the GUI_ProjectBackup window

1. When the 'Cancel' button is used, a reminder warning message is displayed.
   Warning Message (WM-PB1)

Implement using a JOptionPane.

Message Display bypass
A system is to employed in HRE enabling the bypass of Warning Messages.
Detail of this system is to be determined.

ERROR CONDITIONS

It is assumed that the 03.66.04 Message Pattern-Server Error module will be used to convey these error notifications to the User.
This provides two sets of text:
1) Error Source
2) Action consequences
It then provides three buttons:
1) Undo
2) Show Trace
3) Close project
Further attention is required to that specification.

Error Source	Action Consequences
This Remote Server is not on-line	Unable to access Server, and the project Project selection not available
The project cannot be located on this Server	Unable to access the project Project selection not available

It is anticipated that some action will be required in the GUI to show that the relevant project selection is not possible.
For the second example, should this result in some change to the project's record in the User AUX file?
How is the issue to be resolved?

SERVER MESSAGES

Created in and sent from Client to Server

Message
M_C_S_1
 	
Software based – no display
	Contains:
	User Name
	Project name
	Folder and filename for saving of the Project
	  Option-External Files
	  Option-App Settings

Created in and sent from Server to Client(s)

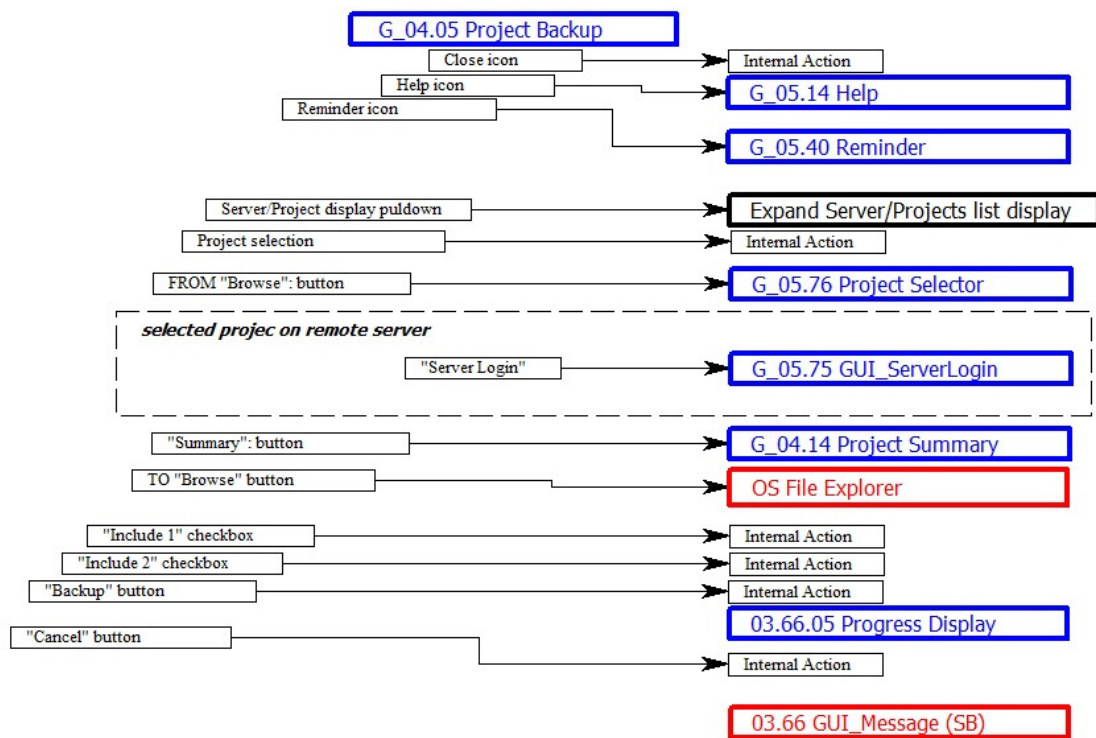| Message M_S_C_1 Uses Server Broadcast Message Pattern GUI_Message (SB) Sent to all Users of the selected project	Subject: Project Backup From: Server Text Message: Project backup queued – multiple users. Requested by: User name Project name: Project name Backup folder: Folder name Backup filename: Filename
Message M_S_C_2 Uses Server Broadcast Message Pattern GUI_Message (SB) Sent to all Users of the selected project	Subject: Project Backup From: Server Text Message: Project backup previously queued with multiple users – now in progress. Requested by: User name Project name: Project name Backup folder: Folder name Backup filename: Filename
Message M_S_C_3 Uses Server Broadcast Message Pattern GUI_Message (SB) Sent to all Users of the selected project	Subject: Project Backup From: Server Text Message: Project backup previously requested and queued – has been processed. Requested by: User name Project name: Project name Backup folder: Folder name Backup filename: Filename

Message window location: centred on the GUI_ProjectBackup window
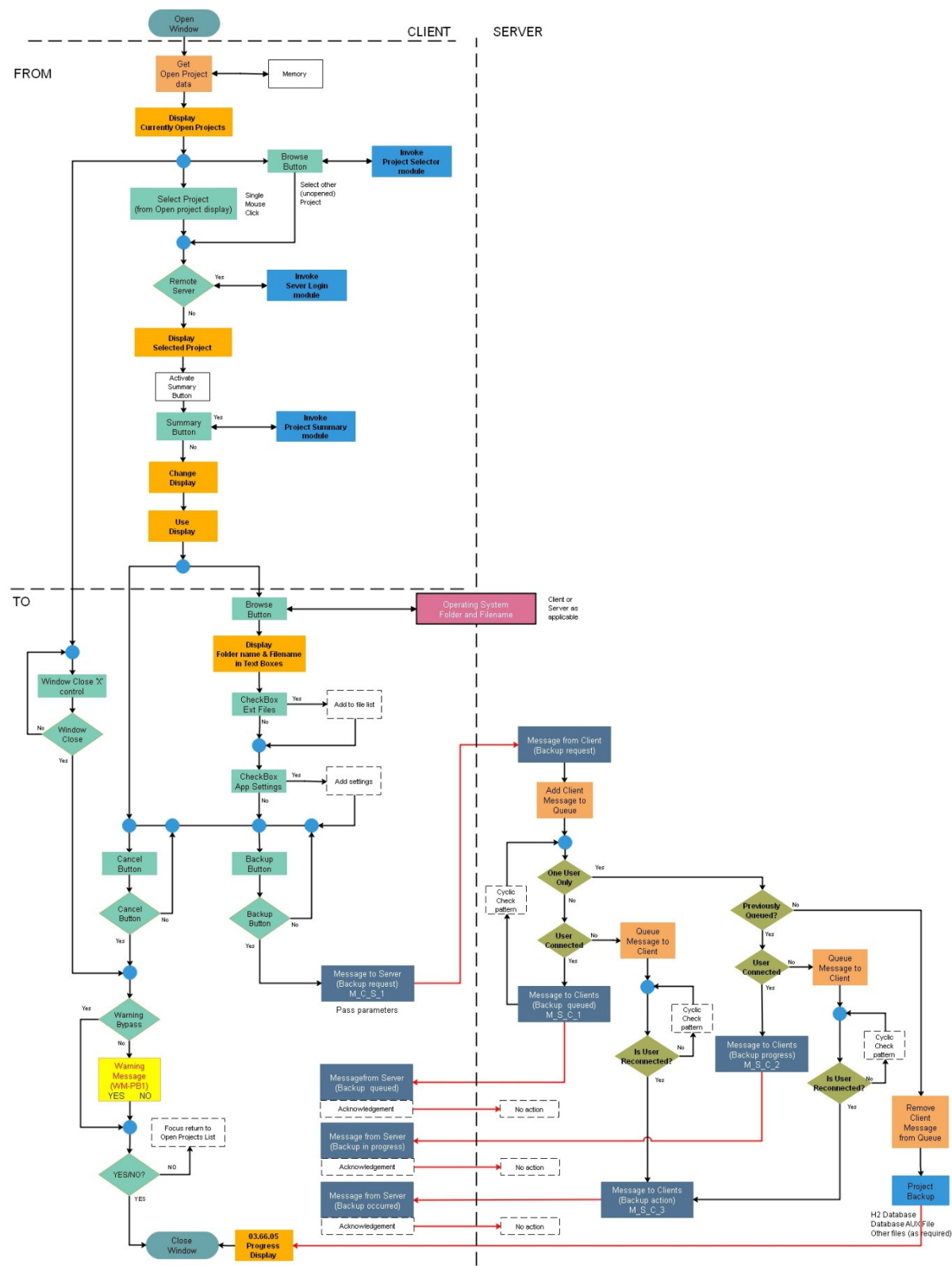
Message designator:
1) M_   signifies a message
2) X_   source
3) Y_   destination
4) Z   distinguishing number for this window

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_04.05 Project Backup	
Close icon	→ Internal Action
Help icon	→ G_05.14 Help
Reminder icon	→ G_05.40 Reminder

Server/Project display puldown	→ **Expand Server/Projects list display**
Project selection	→ Internal Action
FROM "Browse": button	→ G_05.76 Project Selector

selected projec on remote server

| "Server Login" | → G_05.75 GUI_ServerLogin |

| "Summary": button | → G_04.14 Project Summary |
| TO "Browse" button | → OS File Explorer |

"Include 1" checkbox	→ Internal Action
"Include 2" checkbox	→ Internal Action
"Backup" button	→ Internal Action
	03.66.05 Progress Display
"Cancel" button	→ Internal Action

03.66 GUI_Message (SB)

PROCESS FLOW CHART

USE CASES

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	Main GUI
1) Single computer	Project Open
2) Client-Server	Project Backup
3) Test Project database fileset	Project Close
	ExitHRE

Process
1) Run HRE
   a. Open the Test Project
   b. Invoke the ProjectBackup module
   c. Close the Project
   d. Exit HRE
2) Check result (how?)
   a. Confirm new backup file i created
      (name, location, date and time)
      Inspect content
   b. Appropriate Commit Log entries
   c. Appropriate General Log entries.

See Test Plan document.