HRE – DATABASE UPDATING - OVERVIEW

Revision history

2018-06-02	Robin Lamacraft	Original draft
2023-07-15	Don Ferguson	Aligned with Build 30

SCOPE

There are a number of objectives when defining the way the HRE Project database is updated. Always:

1. Use complete record replacement rather than updating a field
2. Use a COMMIT to encapsulate a group of inter-related changes
3. Perform a validation test for each field value change
4. Perform a validation test for each record content change
5. Log each COMMIT with a unique identifier and link that identifier to the records that have been modified
6. Keep each now obsolete record in a manner that an audit trail exists
7. Be able to view that audit trail
8. Be able to undo (in sequence) a series of COMMITS
9. On receipt of a warning or error notification, be able to view the Java call stack
10. Be able to purge older parts of the audit trail.

STRATEGY

Each record in the database has a unique (never reused) Persistent Identity (PID). This is separate from any user defined visible Object ID (VID). All internal operations use the PID. The record PID is a positive integer when it is the current record of the PID. When that record is made obsolete its PID is replaced by its negative value.

HRE database tables **T5998 COMMIT LOGS** and **T5999 COMMIT ITEMS** are intended to provide the change audit trail. The incrementing value PID of the COMMIT LOGS record becomes the COMMIT identifier. Included here are the date stamp of the action and the identity of the user. The COMMIT LOG PID is stored in each COMMIT ITEMS record that relates to that COMMIT. The COMMIT ITEM record holds the TABLE_KEY and RECORD PID of this change. It also stores that previous COMMIT LOG PID (as field PREV_CMT_PID) that last modified that record. That gives a record-based audit trail that also links to changes made in the prior COMMITS.

This methodology should enable investigating unexpected outcomes for the user and for the development team in identifying the cause of a bug.

Implementation of the above method of Commits (and therefore Undo methods) has been postponed until a later release of HRE.