



# Ladybridge Systems

## *What's in OpenQM but not in U2?*

### **Connection**

Port mapping - links telnet port number to QM user number  
Use of QM as an element of a Linux pipe  
Serial port connection

### **File System, Dictionaries and Conversions**

Optional case insensitive record ids on a per-file basis  
Optional case insensitive alternate key indices  
Integrated QMNet as a standard component  
Virtual File System for access to alien file systems  
Extended Q-pointers for QMNet access to remote servers  
Deferred dynamic file split/merge  
Dictionaries - L-type records to minimise the need for TRANS() I-types and T conversions  
Compiled A/S-types for improved performance  
C-type records for complex dictionary calculations  
Nested compound I-types  
TRANS() can retrieve a calculated value  
Additional conversion codes - Base64, Boolean, ISO dates, ANSI X12 dates, Integer, Field extraction  
Extended triggers - post read, pre/post write, pre/post delete, pre/post clear  
Ad hoc encryption  
Epoch based date/time for multi-time zone applications

### **Command Environment**

Cursor key driven command editor  
Personal vocabulary (per user or shared by groups)  
Simpler use of security subroutines on V-type VOC entries  
Largely case insensitive  
ON.LOGTO VOC item, executed by LOGTO before moving to new account  
Extended file syntaxes for remote files and access by pathname  
Dynamic menus allow run-time control of which options are displayed  
Extended inline prompts - substitution of select list items, @-variables, environment variables, function values, SYSTEM()  
values, ranges of command line tokens  
Pick style form queue emulation  
Print prefix and overlays for forms printing  
Hold file records locked while being written  
Optional call to user written subroutine to log hold file record creation.  
PCL printer graphics  
ALIAS to remap command names  
CREATE.FILE option to create in non-default location  
Simple display of internal format date and time  
DISPLAY supports cursor management, reducing need to write programs for simple screens  
User defined @-variables allow programming style operations in paragraphs  
LOGMSG to add messages to the system error log file  
Immediate messaging via pop-up windows  
Run a VOC style item from alternative files  
Enhanced UPDATE.RECORD with interactive mode  
Suspend/resume COMO file creation  
Option to run phantom processes without logging

### **Query Processing**

Enhanced heading/footer capabilities  
Report styles for colour or font highlighting  
\$QUERY.DEFAULTS to set standard query default actions  
Use of dictionary links to access remote files without needing TRANS() I-types or T conversions  
Full or partial pan of reports wider than the screen  
Scroll back through report pages  
SHOW command for interactive select list generation  
ABSENT.NULL option to handle mis-matched records in report built from data in multiple files  
BETWEEN operator for inclusive ranges

BOXED option for enhanced report appearance  
Breakpoints - Multiple B elements to capture heading data  
Extended column heading format controls  
CSV and delimited reports  
CUMULATIVE option for running totals  
Case insensitive selection clause options - not just mapped to uppercase  
IN and NOT.IN selection operators to compare field value with a stored list  
Extended page heading/footer control options  
Optional file locking during report for data consistency  
Overlay pages for forms printing  
Page sequence control for merged reports  
REPEATING to repeat single valued item within multivalued data  
SAVING clause can handle multivalued data

## QMBasic

Enhanced heading/footer capabilities  
Simple mark translation suppression on directory files  
Set exit status for operating system error handling  
Extended sequential file processing statements (CSV handling, append, overwrite)  
Object Oriented Programming  
Automatic cataloguing option after successful compilation  
Variable length argument lists to subroutines and functions  
Termino based function key recognition (BINDKEY, KEYCODE, INPUTFIELD)  
Local functions within source program modules  
Arguments to internal subroutines  
Private data in internal subroutines/functions, fully stacked for recursive calls  
Save/restore part or all of screen image  
Ability to open a file for non-transactional update  
User defined break handlers for application level quit key handling  
CHILD() - Check if child phantom process is still running  
CLEAR.COMMON - Extended to allow clearing of specific named common  
CROP() - Remove redundant mark characters  
IDIV() - Integer division - also as // operator  
INPUTCSV - CSV format input parsing  
INPUTFIELD - Extended INPUT with function key handling  
LISTINDEX() - Find item in arbitrarily delimited list  
LOCATE() - Function call style LOCATE, very useful in I-types  
LOGMSG - Add message to system error log  
MAX(), MIN() - Find maximum or minimum of two values  
MD5() - Create MD5 message digest value for a given string  
OSREAD, OSWRITE, OSDELETE - Simple operating system file read, write, delete  
OUTERJOIN() - Simple interface to indices for use in I-types  
PAUSE / WAKE - Synchronise with some other process  
REMOVEF() - High performance extraction of delimited items  
SHIFT() - Logical shift  
SUBSTITUTE() - Multivalued text substitution  
TESTLOCK() - Test state of task lock  
VSLICE() - Extract a row of a multivalued data set  
QMClient security enhancements complete access control

## Development Aids

Paragraph tracing  
S (stack), W (where) and P (process dump) options on quit key actions  
DELETE.COMMON, LIST.COMMON  
Real time file statistics monitoring  
Equate token generation to ensure consistency between dictionaries and programs  
Hot Spot Monitor to identify performance bottlenecks  
LIST.FILES to determine names of all open files and who has them open  
Full screen debugger over telnet connection  
Debug phantom and QMClient processes  
Process dump files - Complete state of an application at a run time error or on demand  
Windows code page selection for non-default character sets  
Simple screen builder for rapid application development  
Full screen editor