BGAN TCM Controller
Product Sheet

Reducing the manual effort required to conduct MTR testing of BGAN User Terminals

BGAN terminals are required to be compliant to the Inmarsat Common MMI and Mandatory Test Requirements (MTR). The MTR's are executed using an Inmarsat BGAN Protocol Tester (BPT), BGAN Physical Layer Tester (BPLT) and about one thousand test scripts. Aside from the effort required to develop the application layer software of a BGAN user terminal, a large effort is required to ensure that the user terminal passes all the required tests.

The existing workflow for conducting MTR-tests is centered around the Test Case Manager (TCM) tool. The TCM requires manual interaction to set up, execute and retrieve results from many small groups of tests. This limits the pace at which tests that can be executed.

GateHouse now offers a tool, the TCM Controller, to automate the BGAN MTR test process. The TCM Controller automates the test effort by remote-controlling the execution of run lists in the TCM and (if required) changes the BGAN UT configuration. As the test execution proceeds, results are collected and stored in a database for later inspection.

Highlights of the TCM Controller

The majour highlights of the TCM Controller are:

Regression testing
Executing the full MTR test suite with frequent intervals becomes possible with the TCM Controller. As development and bug fixing progresses, it is possible to track the number of passing and failing tests on a daily basis.

Robustness
The TCM Controller is capable of detecting and recovering from hanging tests, crashes and instabilities in the TCM. This allows the TCM Controller to be introduced early in

the development effort, while tests may be failing because of partly implemented application layer software.

Extensibility
The TCM Controller can send messages about test execution to a remote PC. This may include changes in UT configuration, and allows for an even larger degree of automation. A sample application that controls the Gate-House UTRS is available.

Test result reports
Test results are stored in a SQL database. This database allows the TCM Controller to intelligently select the tests to run, and also allows users to generate reports on the current test status.

Increased hardware utilization
Utilization of the test hardware is increased, as a MTR Test setup can now run around the clock, only requiring infrequent monitoring by test personnel. Workstations that are idle during non-office hours may be put to use for MTR testing, thereby parallelising the execution of tests

Technical Description
A typical BGAN MTR test setup is illustrated below. The TCM Controller runs on the TCM PC, and establishes a connection to a database containing test results.
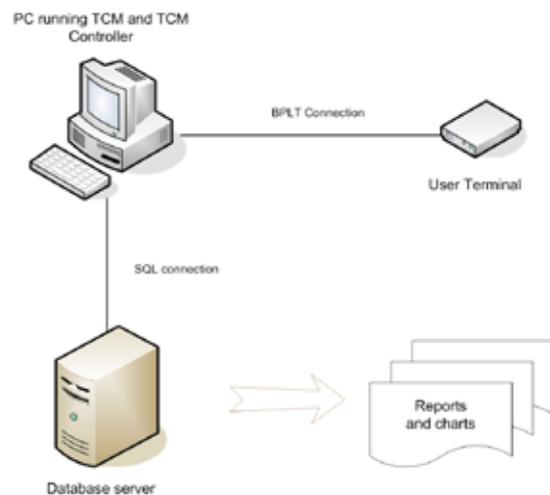
Reports on the current and historical test status can be generated from the database contents – either in the form of detailed lists, relevant for developers, or as charts, for getting a broad overview of the progress in testing.

The TCM Controller addresses the following tasks:

Start-up and shutdown

The TCM Controller starts up the TCM and waits for the start-up procedure to complete before starting any tests. When the TCM is shutting down, the TCM Controller ensures that all related processes are terminated properly.

Interaction

The TCM Controller uses the standard windows GUI API to observe and interact with the TCM user interface. From the perspective of the TCM, this is equivalent to what a human user would to.

Result retrieval

During execution of a run list, the TCM Controller periodically polls the TCM for new test verdicts. New verdicts are immediately stored in the test result database.

UT Control

Depending on the MTR tests being run, it may be necessary to change the UT configuration. The TCM Controller facilitates this by sending messages to a remote application, which may then change the UT configuration before a run of tests is started.

System requirements

Using the TCM Controller requires a functioning MTR test setup (TCM and UT side). Furthermore, access to a SQL database for test result storage.

GateHouse