DSR8xx Test Automation plan

# Introduction

The objective of this activity is to automate the DSR stability and regression testing.

These also must be a path to include new test for new features with may be added…

Test functions to be is automate:

* The Product Stability test
* The Product regression testing
  + Some System testing will still be done manually

The DSR testing can be broken into the following test groups.

**Jenkins tests**

These are performed:

* Nightly
  + Sanity
  + Stability – ad hoc scheduled
* Commit to a development branch – smoke test
* Jenkins sends out email notifications on completion.

**SI&T Stability testing**

Currently semi-automated.

* SL&T tests completed on each SDK release prior to release to Shaw
* **5 tests**
* Manual result collection
* All serial logs are collected and archived

**Bug Verification test**

Currently a manual testing activity testing feature against current test plan

**SI&T Feature and Regression testing**

These are the full test which SI&T perform on completion of GA and intermediate releases.

The regression testing executes the product test plan held in “Test Central”. Historically these tests were performed manually. The test fall into the following groups. The test plans within TestCentral detail the subtest and the test details.

* DSR SI&T.A/V Presentation.Audio
* DSR SI&T.A/V Presentation.Video
* DSR SI&T.Access Control
* DSR SI&T.Closed Caption
* DSR SI&T.Closed Caption.DVR
* DSR SI&T.ConsumerSanity
* DSR SI&T.Download
* DSR SI&T.DRM.Fingerprint
* DSR SI&T.DVR.Dual Record Feature
* DSR SI&T.DVR.eMSD
* DSR SI&T.DVR.HD Fail
* DSR SI&T.DVR.Legacy DVR
* DSR SI&T.DVR.MPEG4
* DSR SI&T.Download
* DSR SI&T.Networking.WiFi
* DSR SI&T.System Control.DST & Related Settings
* DSR SI&T.System Control.Power Up, Down, Reset
* DSR SI&T.System Control.PrivMessg
* DSR SI&T.System Control.Service Selection
* DSR SI&T.System Control.VCO regress & DVR
* DSR SI&T.System Control.VCOs w Freq Descr
* DSR SI&T.Text Messaging.EPMs
* DSR SI&T.Text Messaging.TAMs
* DSR SI&T.Tuning.Acquisition
* DSR SI&T.Tuning.Channel Stacking Switch CSS
* DSR SI&T.USB FLASH

The current Gomiesa features will also need to be consider once the implementation is complete

* Platform application separation
* DSR8300 asset move feature
* ODU type select with L-band scan

# Proposed Testing Topology

The proposed topology will allow stability and Regression testing to be conducted simultaneously.

Specially configured units corrected to the SI&T lab feed will allow specific functional areas to be tested.

These units can be dedicated to the testing of special features which are hard to test on a live system and/or require special hardware i.e. CSS…

Lab feed units

Gen CSS AccessCntrl DST

Live units

Stability units

Regression Test

- Start selected test

- Collect results

Jenkins

-Build integration

-Nightly builds

Stability

-serial log collection

Test Control

# Automation approach

Open item – Do we need a separate control machine

Open item – Do we need some additional software to control the testing ???

Open item – Jenkin’s, Bamboo integration

The objective of the automation exercise is to:

* Fully automate the stability testing
* Automate as many as possible of the Feature and Regression tests.
  + The automated tests will be implemented in a multi -phased approach
  + There will be some tests which initially cannot be initially automated
  + There will be some test which will not be automated – sanity and complex headed tests
* Enhance Jenkins test and use the automated Feature tests

## Jenkins

This is already automated and builds on DRIP and the retrieval of debug logs from the test units.

The Jenkins testing features can be enhanced and integrated with Feature and Regression testing.

## Stability

This can be full automated and focused on most aggressive test.

* These tests are completed on each SDK release prior to release to Shaw
* **Currently 5 tests**
* The following items need to automated:
  + Test image loading
  + Test execution/activation
  + Result collection

## Bug Verification test

Bug verification can be a focused subset of Feature and Regression testing suite. These should be verified by the development engineer and then tested using the sub-test in the feature suite. This should be prior to any SDK release to Shaw.

## **Feature and Regression Testing**

The Automation configuration and test machines should allow:

* Tests to be easily selected, started and run
* Results to be collected and recorded – generate a test report/web page?
* Allow new test to be easily added into the system

The plan initially is to build on the DSR8xx DRIP tools and enhance it if necessary.

Open Items:

* Some “ast command” can be used and provide feedback…
* Test build with embedded test e.g. CSS provisioning, Download simulation.
* Tests with and without the application

DRIP allows

* Remote control commands
  + Scripts of remote control commands
* Retrieval of diagnostic data
* Send MSP messages

The DSR8xx test plans detail the test groupings, the tests within these groups and the test details.

The approach is to categories these tests into groups/categories which can be implemented using the features of the DRIP protocol.

## Feature and Regression Testing test groupings

**Category 1** – functional test using application

User interaction via remote or front panel button

DRIP -remote control or script

|  |  |  |
| --- | --- | --- |
|  | Notes |  |
| DSR SI&T.A/V Presentation.Audio |  |  |
| DSR SI&T.A/V Presentation.Video |  |  |
| DSR SI&T.Closed Caption | Functionality -> text output live/DVR  Font rendering -> ??? maybe a manual verification |  |
| DSR SI&T.Closed Caption.DVR |  |  |
| DSR SI&T.DVR.eMSD |  |  |
| DSR SI&T.DVR.HD Fail |  |  |
| DSR SI&T.DVR.Legacy DVR |  |  |
| DSR SI&T.DVR.MPEG4 |  |  |
| DSR SI&T.System Control.Power Up, Down, Reset |  |  |
| DSR SI&T.System Control.Service Selection | This include verifications of maps |  |
| DSR SI&T.Tuning.Acquisition | Tuning tests |  |
| DSR SI&T.Tuning.Channel Stacking Switch CSS | Tuning tests |  |
| DSR SI&T.Download | Download test using a regress build |  |
| DSR SI&T.Networking.WiFi | ???? |  |
|  |  |  |

**Category 2 (Some with/without application)**

DRIP - send DCII message (MSP) functionality

|  |  |  |
| --- | --- | --- |
|  | Notes |  |
| DSR SI&T.DRM.Fingerprint |  |  |
| DSR SI&T.System Control.PrivMessg |  |  |
|  |  |  |

Some area for investigation:

* download preambles
* text messages
* UIM
  + DST tests ..

**Category 3 (test build without application)**

Test using test build and dedicated test code:

|  |  |  |
| --- | --- | --- |
|  | Notes |  |
| DSR SI&T.Download | Test to confirm state machine and inject ctp files at the section filters |  |
| DSR SI&T.Tuning.Channel Stacking Switch CSS | Provisioning test |  |
|  |  |  |

**Category 4**

Headend manual test

|  |  |  |
| --- | --- | --- |
|  | Notes |  |
| DSR SI&T.Access Control | Auth tier changing |  |
| DSR SI&T.ConsumerSanity |  |  |
| DSR SI&T.Download |  |  |
| DSR SI&T.Networking.WiFi | ???? |  |
| DSR SI&T.System Control.DST & Related Settings |  |  |
| DSR SI&T.Download |  |  |
| DSR SI&T.System Control.VCO regress & DVR | Maybe some of these can be automated |  |
| DSR SI&T.System Control.VCOs w Freq Descr | Maybe some of these can be automated |  |
| DSR SI&T.Text Messaging.EPMs | Remove Shaw to test !!!!! |  |
| DSR SI&T.Text Messaging.TAMs |  |  |
| DSR SI&T.USB FLASH |  |  |
|  |  |  |

Some area for investigation:

• Tuner performance and rainfade test ( could intercept tuner signal data????)