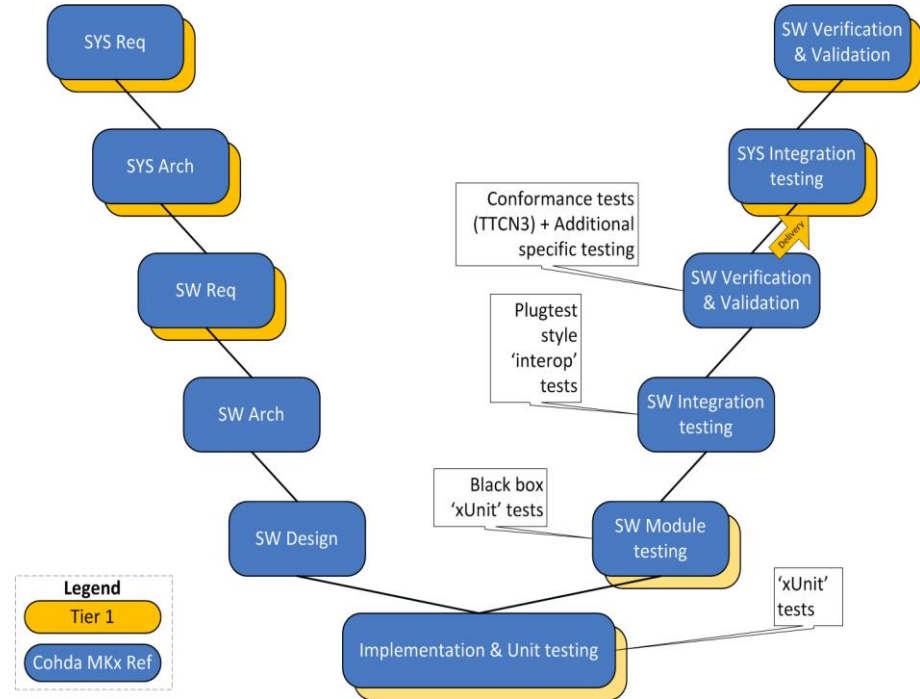




System Integration & Testing

Integration Process for OEM

- Cohda provide an architecture document integrating information on Cohda target classification, inhibits, applications, application configuration, diagnostic and event data record.
 - 2 weeks kick off with Tier 1 and OEM
- Cohda present a test plan and test report for the core applications (EEBL, ICW, GLOSA, ...)
 - Weekly technical call with Tier 1 and OEM
- OEM's additional requirements are incorporated at the 'SW Req' stage and checked at 'SW V&V' stage
 - Architecture sign off critical
- Source deliveries are made after V&V and include xUnit tests that may assist with acceptance testing



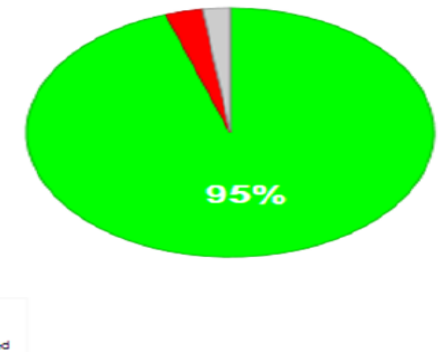
Stack testing and certification

- As per requirements agreed with the customer Cohda will provide a test report for the different 1609 and ETSI layers
- The requirements are links to PICS and every item is validated by a subset of test described in the test plan
- Test report available in DOORS format through the course of the development (sample report available during demonstration phase on request)
- Cohda is participating to every certification and plugtest activities (bi weekly call with USDOT subcontractor in charge of the certification)
- Partner with Spirent to optimise their test best and Cohda stack/test interface

CI ID	ID	Req	Priority
IE16093-SRS-34542	N1.1.1:	CCH access	Supported
IE16093-SRS-34543	N1.1.2:	SCH access	Supported
IE16093-SRS-34544	N1.1.3:	Continuous channel access	Supported
IE16093-SRS-34545	N1.1.4:	Alternating CCH/SCH access	Supported
IE16093-SRS-34546	N1.1.5:	Extended SCH access	Supported
IE16093-SRS-34547	N1.1.6:	Immediate SCH access	Supported
IE16093-SRS-34548	N1.1.7:	Simultaneous operation on multiple channels	Supported
IE16093-SRS-34541	N1.1:	Channel access capabilities	Supported
IE16093-SRS-34540	N1:	General capabilities	Supported
IE16093-SRS-34551	N2.1.1:	SNAP	Supported
IE16093-SRS-34552	N2.1.2:	LLC extensions for WSMF	Supported
IE16093-SRS-34550	N2.1:	LLC	Supported
IE16093-SRS-34554	N2.2.1:	Service channel usage only	Supported
IE16093-SRS-34555	N2.2.2:	Use stateless configuration	Supported
IE16093-SRS-34556	N2.2.3:	IP readdressing	Supported
IE16093-SRS-34557	N2.2.4:	Stand IP datagrams	Supported
IE16093-SRS-34559	N2.2.5.1:	Receive by link-local address	Supported
IE16093-SRS-34560	N2.2.5.2:	Receive by global address	Supported
IE16093-SRS-34558	N2.2.5:	Receive IP datagrams	Supported
IE16093-SRS-34563	N2.2.6:	UDP	Supported
IE16093-SRS-34564	N2.2.7:	TCP	Supported
IE16093-SRS-34553	N2.2:	IPv6	Supported
IE16093-SRS-34568	N2.3.1.1:	Check WSMF version number	Supported

1609.3 PICS sample

Test report
sample

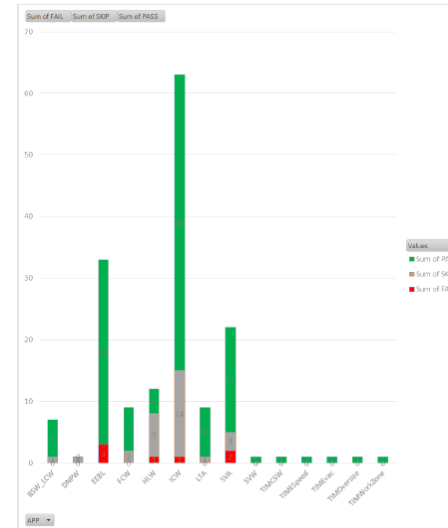
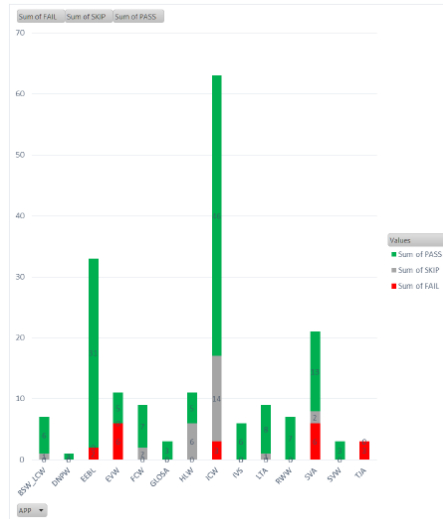


CI Type	CI ID	ID	Req	Priority	Test Nr	Test Status Name
SW	IE16093-SRS-	34542	N1.1.1: CCH access	Desirable	4.02.000	Pass
SW	IE16093-SRS-	34542	N1.1.1: CCH access	Desirable	4.02.000	Pass
SW	IE16093-SRS-	34542	N1.1.1: CCH access	Desirable	4.02.000	Pass
SW	IE16093-SRS-	34543	N1.1.2: SCH access	Desirable	4.02.010	Pass
SW	IE16093-SRS-	34543	N1.1.2: SCH access	Desirable	4.02.010	Pass
SW	IE16093-SRS-	34543	N1.1.2: SCH access	Desirable	4.02.010	Pass
SW	IE16093-SRS-	34543	N1.1.2: SCH access	Desirable	4.02.011	Pass
SW	IE16093-SRS-	34543	N1.1.2: SCH access	Desirable	4.02.011	Pass
SW	IE16093-SRS-	34543	N1.1.2: SCH access	Desirable	4.02.011	Pass
SW	IE16093-SRS-	34543	N1.1.2: SCH access	Desirable	4.02.011	Pass
SW	IE16093-SRS-	34543	N1.1.2: SCH access	Desirable	4.02.011	Pass
SW	IE16093-SRS-	34543	N1.1.2: SCH access	Desirable	4.02.011	Pass
SW	IE16093-SRS-	34543	N1.1.2: SCH access	Desirable	4.02.011	Pass
SW	IE16093-SRS-	34543	N1.1.2: SCH access	Desirable	4.02.011	Pass
SW	IE16093-SRS-	34543	N1.1.2: SCH access	Desirable	4.02.011	Pass
SW	IE16093-SRS-	34543	N1.1.2: SCH access	Desirable	4.02.011	Pass

300+ test identified versus 30 for Certification of this layer!!!

Daily application sanity check on Trunk

Example of weekly review on application validation



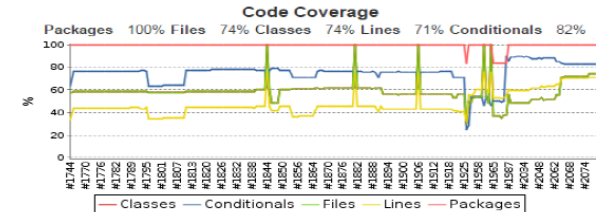
1. Taken directly from Jenkins-Trunk_ApplicationTest_MK5_EU
 - Taken directly from Jenkins-Trunk_ApplicationTest_MK5_NA
14 Apps, EBL-2Pass, GLOSA+1Pass, LTA+1Pass, JTA+1Pass
 - **LAST VALID RUN #1744, Current Run #1744, ie 02 failed runs

Development and Regression Testing

- Several test data sources:
 - **Synthetic Scenarios** for repeatable evaluation and in-depth analysis
 - **On-road Logs** for false alarm verification and real world true positive testing
 - **Crash Data** for time positive verification
- Hardware in the Loop
 - Replay test data through MKx hardware
- Continuous regression testing
 - Batch mode using 'low redundancy' subset for all scenarios

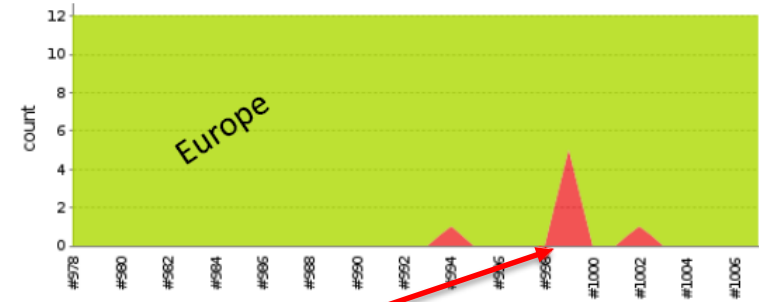
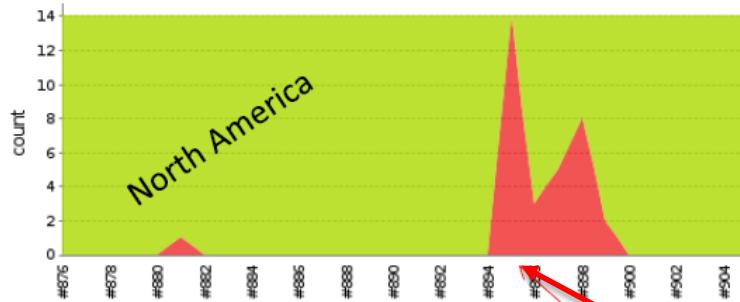


TESTING SUMMARY



- Large Data Collection
 - 'Synthetic' scenarios, Road test logs, Crash data
 - Utilized through development cycle
- Re-simulation approach
 - Hardware in the loop
 - Continuous regression testing
- Analysis Capabilities
 - KML extraction for visualization
 - Performance statistics via batch post-processing

Daily application sanity check on Trunk



Multiple daily build under test on the Trunk

Merge activity from development brand to the trunk.
2 days needed to fix the merge (see next page for details)
Generic SDK release possible to customer only if stable and 48h continuous application test pass

Taken directly from Jenkins-Trunk_ApplicationTest_MK5_EU

- 14 Apps, EBL-2Pass, GLOSA+1Pass, LTA+1Pass, TJA+1Pass
- **LAST VALID RUN #1744, Current Run #1744, ie 4 failed runs