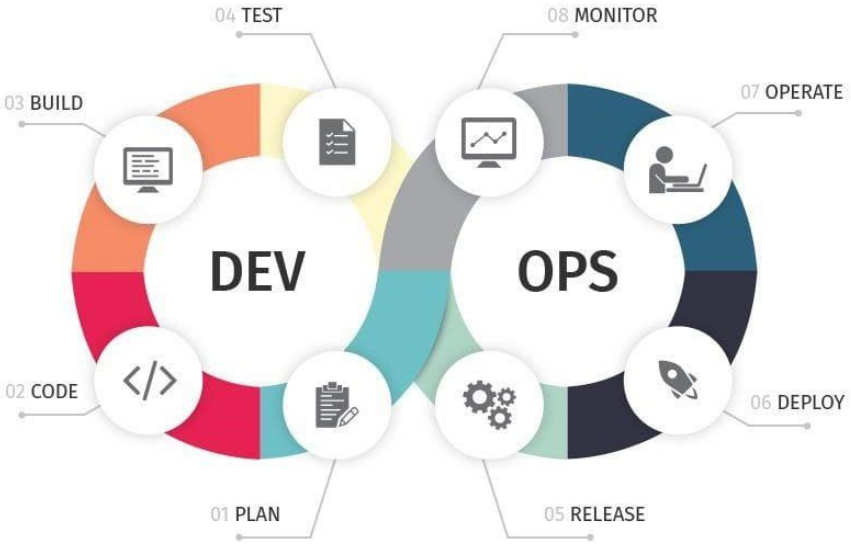
xVT REGRESSION

Introduction - WiFi Regression

Present by Ian Lin

AGENDA

- Definition
- Purpose
- Overview
- Products
- Environments
- Tools
- Bug Issue
- Report



DEFINITION

xVT –

Stands for

Cross-Validation Testing

Regression -

- Tests to ensure that previously developed and tested software still performs after a change.

Changes that may require regression testing include bug fixes … tend to grow with each found defect, test automation is frequently involved. (Wiki)

Automation -

- Test automation can automate some repetitive but necessary tasks in a formalized testing process already in place or perform additional testing that would be difficult to do manually. (Wiki)

PURPOSE

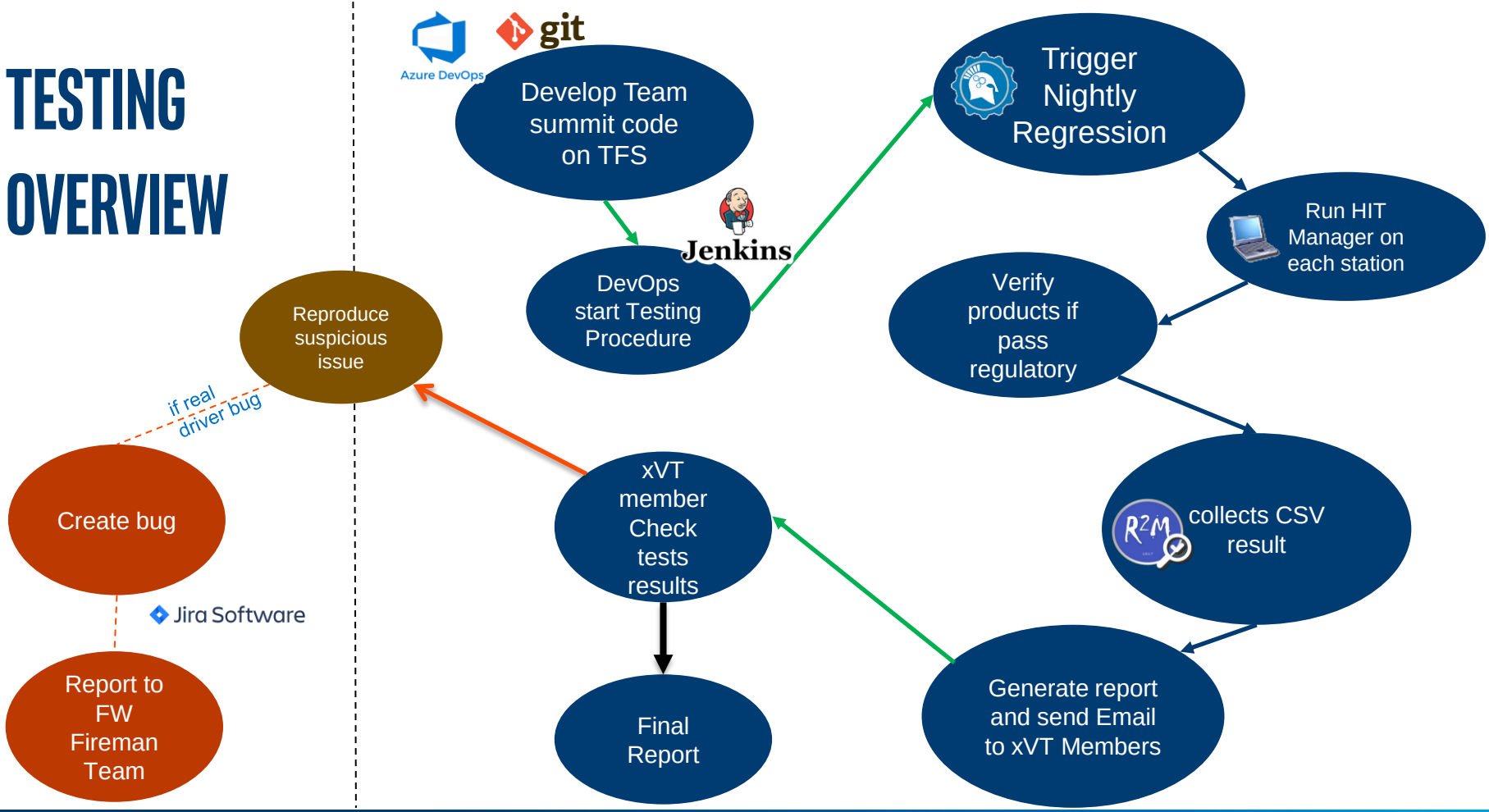
xVT – Cross-Validation Testing

- Validating Drivers & tools
- Validation of source code and releases by automated execution of HVT and DRTU.
- Analysis and comparison of multiple test results.
- Release new validated drivers as soon as possible.

Summary of Reports

- Display detailed analysis and comparison results
- History reports on shared drive

TESTING OVERVIEW



Name	Station	IP	Controller
WIFI			
CCP2x2_EXM	HWS776	10.185.231.6	399_Coontroller/HWS399/10.185.231.91
HRP2x2_IQexlm	HWS466	10.185.231.93	Controller_596/HWS596/10.185.231.89
HRP1x1_ANT_DIV_IQexlm	HWS1371	10.185.231.11	Controller_596/HWS596/10.185.231.89
GFP2x2_IQexlm	TSMVDT901	10.5.221.125	TSMVDT905_Taiwan/TSMVDT905/10.5.221.81
TYP2x2_IQexlm	TSMVDT903	10.5.221.76	TSMVDT905_Taiwan/TSMVDT905/10.5.221.81
GFP4x4_Iqexlm	HWS768	10.185.232.36	HWS1282_Controller_SMV/HWS1282_Controller_SMV/10.185.227.8
JFP1x1_ANT_DIV+QNJ_EXM	HWS479	10.185.227.104	Controller_399_EXM/Controller_399_EXM_0_Floor/10.185.231.91
HRP2X2_TSMC_EXM	HWS1366	10.185.227.106	Controller_399_EXM/Controller_399_EXM_0_Floor/10.185.231.91
HRP2x2+SNJ_IQexlm	HWS1679	10.185.229.38	Controler_1281/HWS1281/10.185.231.4
JFP2x2+QNJ_EXM	HWS1233	10.185.231.15	399_Coontroller/HWS399/10.185.231.91
JFP1x1_ANT_DIV+SNJ_EXM	HWS1733	10.185.231.82	Controller_399_EXM/Controller_399_EXM_0_Floor/10.185.231.91
BT-IDC			
HRP1x1_ANT_DIV	HWS1783	10.185.229.88	HWS1282_BT/HWS1282/10.185.227.8
JFP2x2	HWS846	10.185.229.109	HWS1282_BT/HWS1282/10.185.227.8
TYP2x2	HWS845	10.185.229.92	HWS1282_BT/HWS1282/10.185.227.8
TYP_2x2_Throughput	HWM2442	10.185.227.26	HWS1282_Throughput/HWS1282/10.185.227.8
HRP2X2	HWS1883	10.185.229.13	HWS1282_BT/HWS1282/10.185.227.8
MRP2X2	HWS1195	10.185.229.1	HWS1282_BT/HWS1282/10.185.227.8
Core 51			
THP2x2_IQexlm	HWS897	10.185.231.22	Controller_596/HWS596/10.185.231.89
JFP2x2_EXM	HWS344	10.185.231.153	399_Coontroller/HWS399/10.185.231.91
JFP1x1_ANT_DIV_IQexlm	HWS778	10.185.231.21	Controller_596/HWS596/10.185.231.89
MVT			
CCP2x2_IQexlm	HWS1648	10.185.69.85	Controler_1281/HWS1281/10.185.231.4
HRP2x2_IQexlm	HWS759	10.185.69.51	Controler_1281/HWS1281/10.185.231.4
HRP1x1_ANT_DIV_IQexlm	HWS1622	10.185.69.92	Controler_1281/HWS1281/10.185.231.4
TYP2x2_IQexlm	TSMVDT909	10.5.221.126	TSMVDT905_Taiwan/TSMVDT905/10.5.221.81
GFP2x2_IQexlm	TSMVDT907	10.5.221.90	TSMVDT905_Taiwan/TSMVDT905/10.5.221.81
DRTU			
JFP1	OEM_DRTU_11342_22_21030_0		
GFP2			

ENVIRONMENT SETUP

Automated HVT Infrastructure Setup

- HVT – selected version
- TFS Branch – download & build
- IM – suitable / latest version
- HIT Manager – latest version

Automated Tests Execution

- Execute HIT Manager flow
- Backup results on shared drive

SOFTWARE TOOLS OF xVT

Jira Software

Titan – Tests triggering and Cloud Monitoring

Cloud centralized service server. Trigger every station with specific drivers run on HIT Manager and monitor its status.

HIT Manager – Hardware testing execution application

Titan controls stations to run flows on HIT Manager and test on HW equipments.

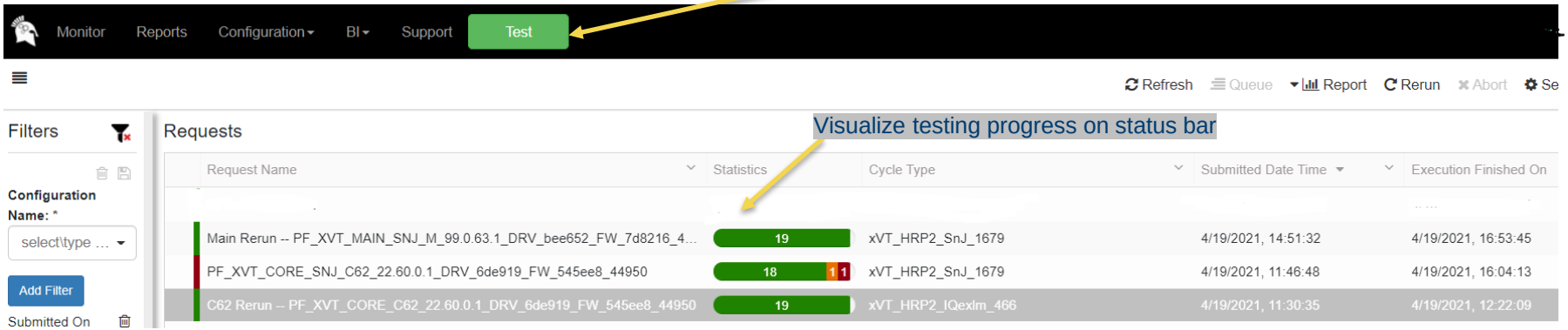
R2M – Collect data and create reports

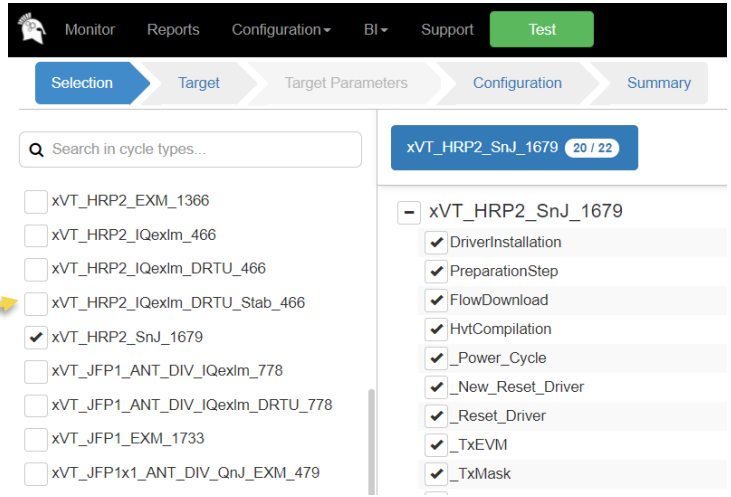
Installed on each station, collects CSV files that run on HIT manager, generate comparison reports with limits and send email to xVT members.

Jira – Bug tracing App communicating with Develop team

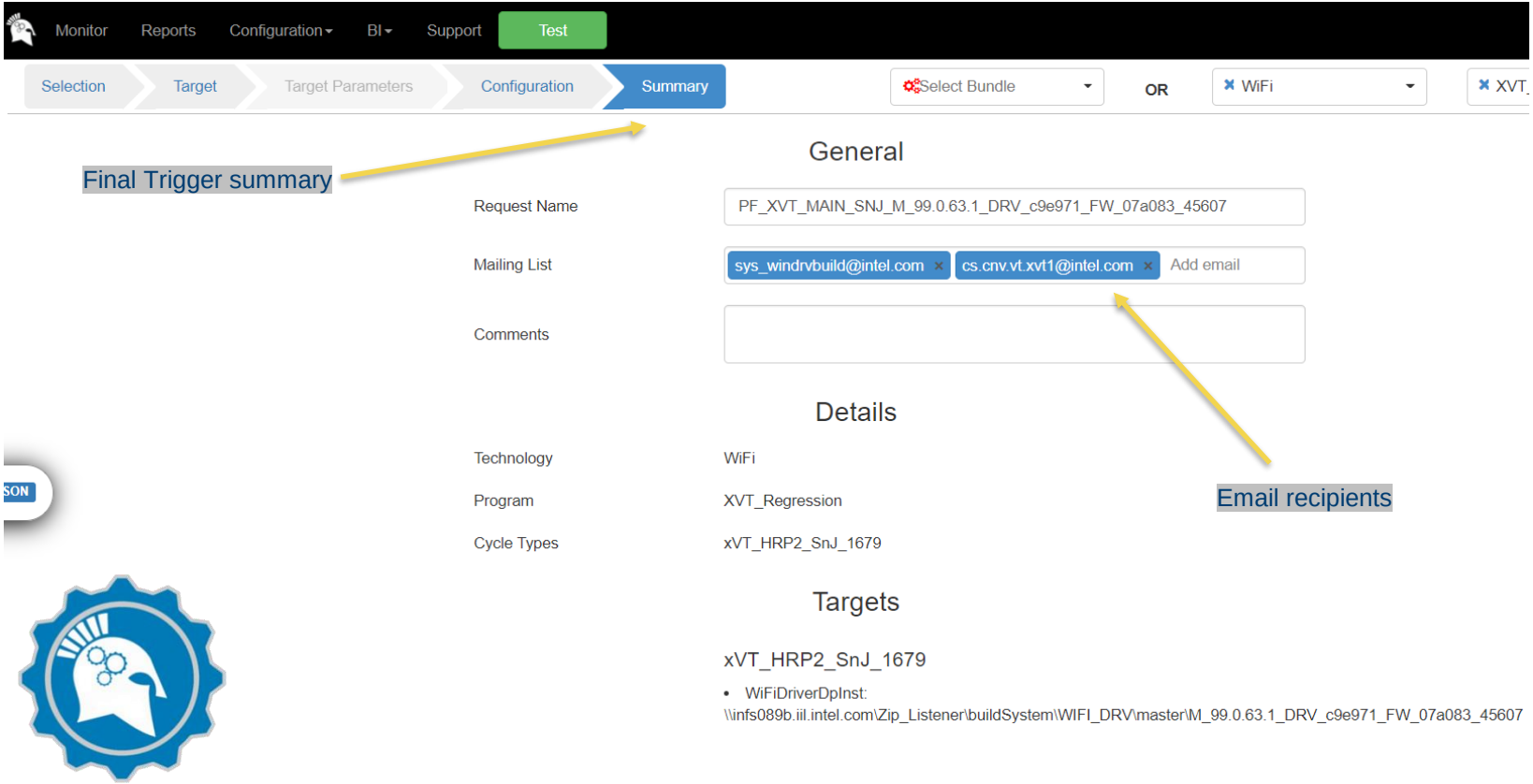
Bug tracking software. When xVT found real issue, they collect data and log to dev team on Jira.

Start testing a Driver version on various stations





Select stations and flows intend to test


Monitor
Reports
Configuration
BI
Support
Test
Selection
Target
Target Parameters
Configuration
Summary
Select Bundle
OR
WiFi
XVT
Final Trigger summary
General
Request Name
PF_XVT_MAIN_SNJ_M_99.0.63.1_DRV_c9e971_FW_07a083_45607
Mailing List
sys_windrvbuild@intel.com
cs.cnv.vt.xvt1@intel.com
Add email
Comments
Details
Technology
WiFi
Program
XVT_Regression
Cycle Types
xVT_HRP2_SnJ_1679
Email recipients
Targets
xVT_HRP2_SnJ_1679
WiFiDriverDpInst:
\\infs089b.iil.intel.com\Zip_Listener\buildSystem\WIFI_DRV\master\M_99.0.63.1_DRV_c9e971_FW_07a083_45607

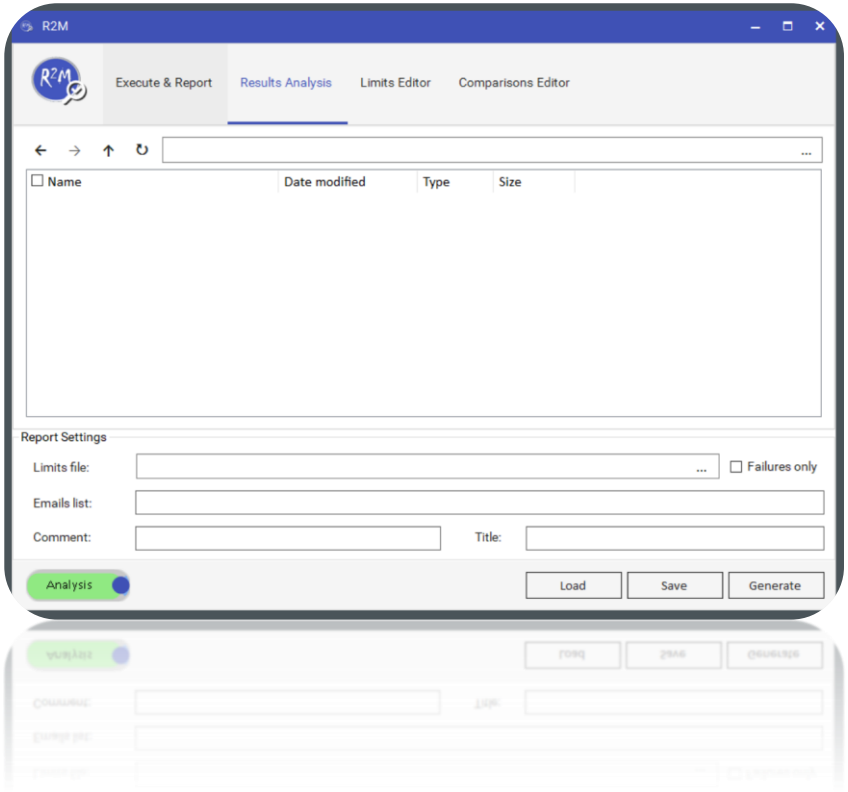
FEATURES

Automated Results Analysis

- Analyze test results using limits, filters and graphs (defined by user)
- Compare results of multiple products

Comparisons Editor

- Convenient UI for displaying and editing analysis and comparison configurations.
- Save configurations to xml file.



Results Editor –

Compare data with defined limits and generate report

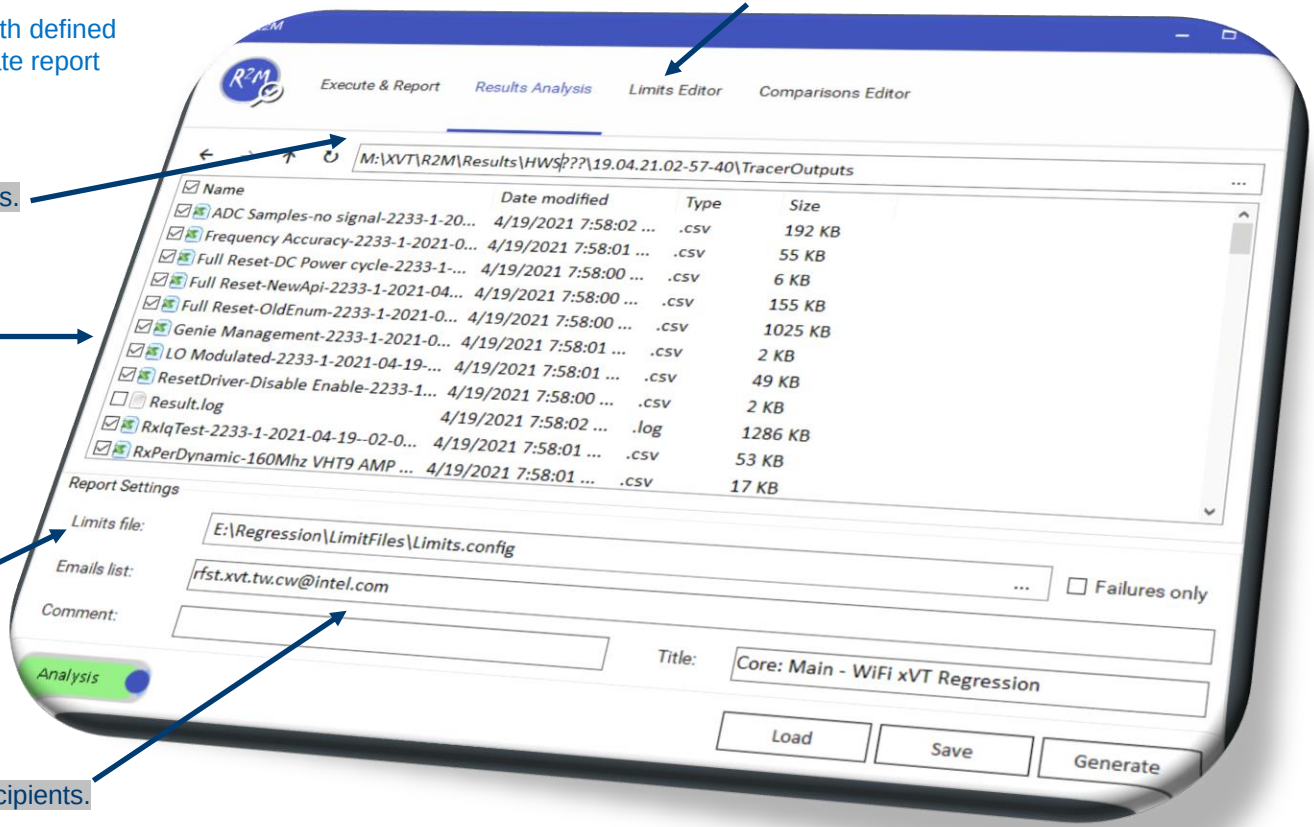
Limit file Editor

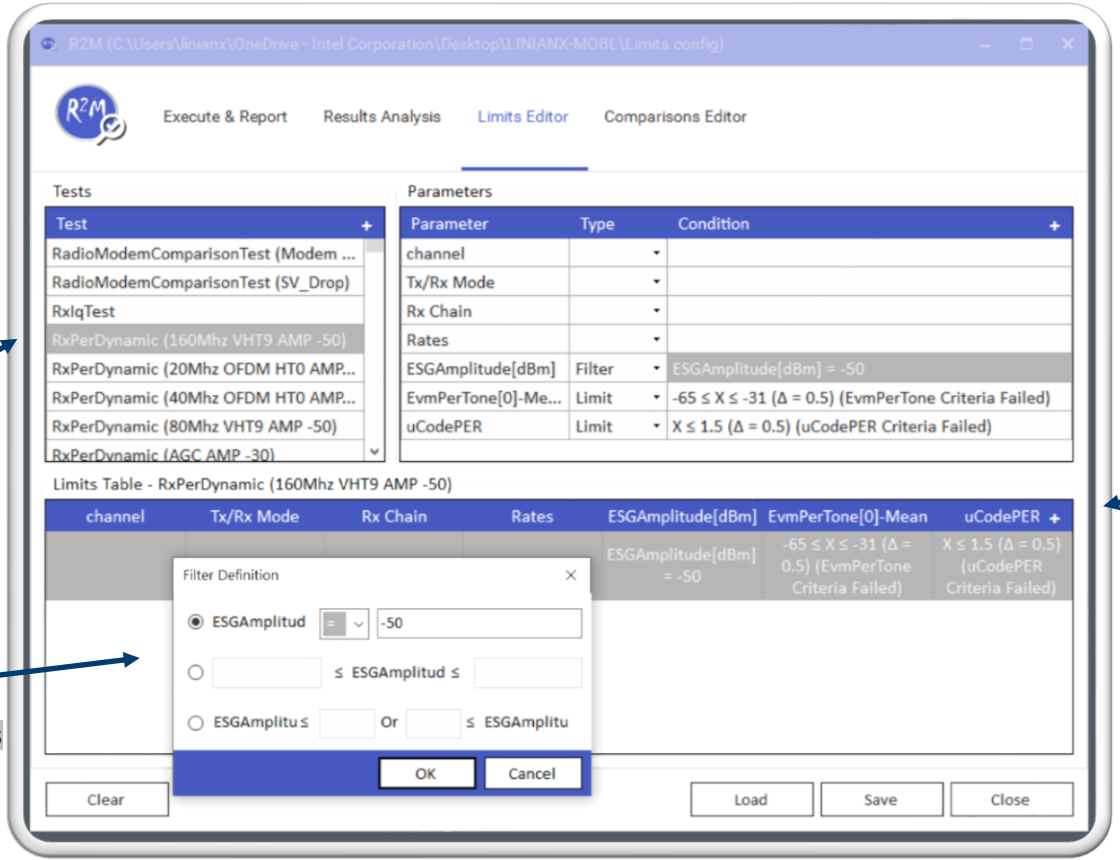
Open the path of the Data/CSV files.

Select all the CSV Files that generated from HIT Manager without the log file.

Open the path of the Limit File. Limit file's values are defined based on WiFi/BT Standard.

Email the result to recipients.





Select each testcase

Set the defined values regarding to regulations

Select the columns would like to present

Limits Editor

- Load existing test log
- Add **Parameter** to analyze
- Set **Limits** & **Filters**
- Define multiple **Charts**
- Save as '.config' file

Command-Line Execution

- Analysis of directory
- Comparison between two directories.
- Execute in automation

```
R2M Help:
R2M has 2 or 3 arguments on command line:
1. Input paths - for analysis report fill with only path only. For comparison report fill in two paths separated by '&'.
2. Limits file - .txt or .config file which contains limits and charts for the report.
3. (Optional) Email addresses - list of recipients separated by ';'.
linianx@linianx-mobl /m/c/U/l/O/Desktop [255]>
/mnt/c/RFST-Tools/R2M/R2M.exe "C:\Users\linianx\OneDrive - Intel Corporation\Desktop\LINIANX-MOBL\data" "C:\Users\linianx\OneDrive
 - Intel Corporation\Desktop\LINIANX-MOBL\Limits.config" ian1x.lin@intel.com

Running Analysis
```

```
Done!
Email sent to: ian1x.lin@intel.com
Report path: C:\Users\linianx\OneDrive - Intel Corporation\Desktop\LINIANX-MOBL\20.04.21.15-42-43\data.htm
```

STATION REPORT

Core: Main - WiFi xVT Regression JFP1x1_ANT_DIV_EXM QNJ WIN10x64 Tests Failed (4/39) on HWS479

R2M.DontReply@intel.com
To ⊞RFST XVT; ⊞RFST MVT; ⊞RFST xVT TW CW

Analysis Report

Core: Main - WiFi xVT Regression JFP1x1_ANT_DIV_EXM QNJ WIN10x64

WiFi Driver path:\\\\infs089b.iil.intel.com\Zip_Listener\buildSystem\WIFI_DRV\master\M_99.0.63.1_DRV_c9e971_FW_07a083_45607

RFST HVT Drop: \\ger.corp.intel.com\ec\proj\ha\ITL\RFST_BUILDS\HVT WiFi\8.4.1.42_NightlyBuild

Total Tests:	1182
Passed Tests:	1174
Filtered Tests:	2
Total Exceptions:	5
Failed Tests:	6
Card:	JEFFERSON 1x1AGN
Step and Flavor:	B1 FLV0
Branch:	c:\users\itl\agent_work\13\s\src\tests\lowlevels\xvtlls\wifi\xvtmanaged\ctestapi.h
Hvt Version:	HVT Release 8.4.1.42 NightlyBuild
Driver Version:	99.0.63.1
Usc Version:	7.180.8.145
Svndisuio Version:	1.19.1.1
Ucode Version:	65.127959962
Eeprom Version:	1140
Mac Address:	38-FC-98-18-68-93
NVM Version:	A384
Station:	HWS479
Duration:	00:00:40:16

Tx Mask (Driver IT High Band 40MHz) ✗ Failed

Flow: JFP1x1_ANT_DIV_EXM_TxMask.flow
Duration: 00:00:00:35

The number of iterations which passed all limits is **4** out of **6**.
The number of failed iterations is **2**.

Full Reset (DC Power Cycle)	✓ Passed (Limits not defined)
Full Reset (NewApi)	✓ Passed (Limits not defined)
ResetDriver	✓ Passed (Limits not defined)
Full Reset (OldEnum)	✓ Passed (Limits not defined)
Tx EVM (Smart OFDM and HT)	✓ Passed
Tx EVM (Driver CCK)	✓ Passed
Tx EVM (Driver Low Band 20Mhz)	✓ Passed
Tx EVM (Driver Low Band 40MHz)	✓ Passed
Tx EVM (Driver High Band 20MHz of 80MHz)	✓ Passed
Tx EVM (Driver High Band 20MHz)	✓ Passed
Tx EVM (Driver High Band 40MHz)	✓ Passed
Tx EVM (Driver High Band 80MHz)	✓ Passed
Tx Mask (Driver IT Low Band)	✓ Passed
Tx Mask (Driver IT High Band 20MHz)	✓ Passed
Tx Mask (Driver IT High Band 40MHz)	✗ Failed because of 2 limit violations
Tx Mask (Driver IT High Band 80MHz)	✓ Passed

Channels	Tx/Rx Mode	[Antenna Diversity] Measured Antenna	Rates	Mask margin	MaskMarginCriteria	PowerTarget	Tx power	GainMode	MCC
A: Ch38(F) - 5190	40MHz-Wide(c|x)	FORCE_ANT_1	HT0: BPSK 1/2	-2.700 > 0	0	13.75	13.561	Driver	IT
A: Ch38(F) - 5190	40MHz-Wide(c|x)	FORCE_ANT_0	HT0: BPSK 1/2	-2.301 > 0	0	14	13.869	Driver	IT
A: Ch102(F) - 5510	40MHz-Wide(c|x)	FORCE_ANT_1	HT0: BPSK 1/2	4.942 > 0	0	16	15.674	Driver	IT
A: Ch102(F) - 5510	40MHz-Wide(c|x)	FORCE_ANT_0	HT0: BPSK 1/2	4.898 > 0	0	16.25	16.378	Driver	IT
A: Ch159(F) - 5795	40MHz-Wide(c|x)	FORCE_ANT_1	HT0: BPSK 1/2	5.457 > 0	0	7.5	7.103	Driver	IT
A: Ch159(F) - 5795	40MHz-Wide(c|x)	FORCE_ANT_0	HT0: BPSK 1/2	6.095 > 0	0	7.5	7.792	Driver	IT

Full CSV File: \\ger.corp.intel.com\ec\proj\ha\ITL\VT\XVT\R2M\Results\HWS479\21.04.21.00-09-49\TracerOutputs\Tx Mask-Driver IT High Band 40MHz-6893-1-2021-04-20--23-23-38.csv

STATION REPORT

- Summarized table with each test status
- Trace detailed information for Exceptions
- Link to test flow CSV Files created by HIT Manager
- View locally or by email

FINAL SUMMARY REPORT

BUGs reported to Firmware team to Fix
https://jira.idoc.intel.com/issues/?filter=20598

Save every result from each HW station
\\ger.corp.intel.com\ec\proj\ha\ITL\VT\Teams\HVT\xVT Regression\Results\Core_Cycle_62\WW17\17.3

Nightly Driver Link installed on every station
\\infs089b.iil.intel.com\Zip_Listener\buildSystem\WIFI_DRV\master\M_99.0.63.1_DRV_bee652_FW_7d8216_44944

xVT Regression over Core 62 build results attached.
Link to reports: Core 62
Jira Bug Filter

Executive summary:

Baseline	Build / Driver Version	Status
Core Main	M 99.0.63.1 DRV bee652 FW 7d8216 44944	FAILED

OS	Tests Blocked	Tests Errored	Test Failed	Test Passed	Total Tests
Win10x64	0	9	30	17152	17191

Test summary:

HW	Passed	Failed	Errored	Blocked	Details		
					Notes	Bug ID	Owner
GFP4x4_PHY_IQexlm (Israel)	6750	2	0	0	RxPerSensitivity (UHB HE11) Ch:223 Chain:A Sensitivity point:-61.037 > -61.6		
					RxPerSensitivity (HB HE7 CDB Tx) Ch:102(F) Chain:B Sensitivity point:-72.44 > -73		
HRP2X2_TSMC_EXM	1615	15	0	0	Sporadic NaN result on Tx EVM test	WIFI-108722	Stanislav G.
					Negative margin on Tx Mask (Driver IT High Band 160 MHz) Ch50 Chain:A Mask margin:-6.53 ≤ -5	Bug in WIP	Ian L.
					NaN Results in RxPerDynamic and RxPerSensitivity On Ch:165	WIFI-108723	Stanislav G.
						WIFI-99270	Yaki H.
CCP2x2_EXM (Israel)	1629	5	4	0	Sporadic NaN result on Tx EVM test	WIFI-114046	Eddie Y.
					Exception on XVT_CMD_RUNTIME_CALIB_HANDLE		

Each HW Station connecting with testing extenders

Create bugs on JIRA software

COMMON ISSUE / EXCEPTIONS IN xVT REGRESSION

- HVT Drop
- Driver installation Error
- Titan automation connection Error
- NaN results
- Degradation Results
- BSOD/Station down
- IM tool
- IQexl
- EXM
- Limit Violations

Jira Software | Dashboards | Projects | Issues | Boards | Structure | BigPicture | Requirements | Tests | Create

New search

Find filters

FILTERS

- My open issues
- Reported by me
- All issues
- Open issues
- Done issues
- Viewed recently
- Created recently
- Resolved recently
- Updated recently

FAVORITE FILTERS

- Bug List
- Closed List

Bug List

Save as | Details | PDF | Email | Share

Team = HVT AND labels = XVT_REGRESSION AND (project = WIFI AND status not in (Closed) OR project = BT AND status not in (Closed))

1–15 of **15**

Key	Summary	Status	Development Testing Environments
WIFI-114046	[xVT Regression][CoreMain/CoreCycle][CCP][EXM] Sporadic NaN Results on Tx EVM	PENDING	
WIFI-111104	[xVT Regression][CoreMain/CoreCycle][TYP2X2][IQexlm] Tx Power Limitation on TxPwrInfo Regulatory Limit A	PENDING	
WIFI-109152	[xVT Regression] Frequency Accuracy degradation in several projects	OPEN	
WIFI-109150	[xVT Regression][EXM issue's] Misalignment to PXA in TxBandEdge HB channels	OPEN	
WIFI-109149	[xVT Regression][EXM issue's] Misalignment to PXA in TxMask 160Mhz	OPEN	
WIFI-108723	[xVT Regression][CoreMain][HRP2_TSMC][EXM] Limitation on RxPerDynamic Ch165	OPEN	
WIFI-108722	[xVT Regression][CoreMain][HRP2_TSMC][EXM] Negative Limitation on Tx EVM (Driver US HE9 RU High Band 20Mhz)	OPEN	
WIFI-103125	[xVT Regression][CoreMain/CoreCycle][ISR GFP4x4][IQexlm] Tx EVM Limitation on Tx pwr VSA	OPEN	
WIFI-102795	[xVT Regression][Core 51][JFP1x1_ANT_DIV][Iqexlm] ADC Samples Exception failed with status 31	PENDING	
WIFI-99698	[xVT Regression][CoreMain][SNJ+JFP1x1][EXM]- Negative Margin at [Tx Band Edge]-Driver HT US Low Band 20MHz - Ch13 - 2472	IN PROGRESS	
WIFI-99270	[xVT Regression][CoreMain][HRP2_TSMC][EXM] RxPerSensitivity (HB 20Mhz RU Rate HE0 / HE9) - NAN Results over channel 165	PENDING	
BT-36961	[xVT_Regression][BT][HRP1/JFP2/TYP2][IQexlm][Nightly]	OPEN	

Bug list that provides current bugs that xVT monitoring

Jira Software

WCS WIFI / WIFI-102795

[xVT Regression][Core 51][JFP1x1_ANT_DIV][Iqexlm] ADC Samples Exception failed with status 31

9 of 15 Return to search

Edit | Comment | Assign | More | Continue | Open | Workflow | Email | Doc. Generator | Export

Details

Type:	Bug	Status:	PENDING (View Workflow)
Priority:	P2-High	Resolution:	Unresolved
Affects Version/s:	REL_99.0.39	Fix Version/s:	None
Component/s:	Other	Security Level:	Public
Labels:	XVT_REGRESSION		

Overview | Customer | Notes

State Reason:	Internal input required
Exposure:	2-High
Operating System/s:	Windows 10 RS5
Hardware:	Jefferson Peak 1 Pulsar (9461)
Platform/s:	Unassigned
Found by:	Periodic Nightly
Found in build:	C51_21.80.14.1_DRV_2aa828_FW_6f9f21_34344
Team:	HVT
Last Comment:	Following debug session with Guriashkin, Stanislav same test passed with exm TE Qnj JFP AD but not with IQexlm Pnj + JFP AD Next step - isolate affecting factor either TE EXM\IQexlm or QNJ/PNJ.

Description

Expected Results:

Actual Results: Command XVT_CMD_GET_ADC_SAMPLES_V2 failed with status 31

People

Assignee:	Guriashkin, Stanislav
	Assign to me
Reporter:	Yang, EddieX
Issue Viewers:	Guriashkin, Stanislav, Haber, Yaki, Hsia, BillX, ... (6)
Votes:	0 Vote for this issue
Watchers:	8 Start watching this issue

Dates

Created:	17/Feb/21 2:32 PM
Updated:	2 days ago

Agile

View on Board

Packages

Version	Package

Provide detailed issues on product

Jira Software

WCS WIFI / WIFI-102795

[xVT Regression][Core 51][JFP1x1_ANT_DIV][Iqexlm] ADC Samples Exception failed with status 31

Edit | Comment | Assign | More | Continue | Open | Workflow

10 older comments

Haber, Yaki added a comment - 12/Apr/21 11:38 AM

Hi

please define next steps and owner

Yaki

Zaidner, Oren added a comment - 12/Apr/21 2:41 PM

As already said before: This looks like a FW issue. FW does not generate interrupt or intterrup was not generated on RFD

Next steps: Eddie should collect the debug data as Yair N. requested. after collecting this data, the bug should be assigned to Yair N. for analysis.

Returning the bug to Eddie.

Fridburg, Roi added a comment - 12/Apr/21 6:14 PM

Hi, Moving to FW, since looks like missing interrupt from FW side.

we see the TX RSP in the RFD Q.

Yang, EddieX added a comment - 1 week ago

Newly collected logs and report are provided in path below:

\\ger.corp.intel.com\ec\proj\ha\ITL\VT\XVT\Jira\WiFi\WIFI-102795_ADCSample_Exception_status31\new collect

Please let me know if any issues with the collected logs, thanks.

Sokolowski, Marc added a comment - 2 days ago

Following debug session with Guriashkin, Stanislav same test passed with exm TE Qnj JFP AD but not with IQexlm Pnj + JFP AD

Next step - isolate affecting factor either TE EXM\IQexlm or QNJ/PNJ.

Discussion with Firmware team members to specify issues about the driver in various versions.

THE END