

SPS Software Test Report

PFS-SPS-PRU300006-01

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1 Version and Changelog

The version of this document is **0.2** .

Version	Date	Author	Description
0.2	2019-10-16	A Le Fur	Test results added
0.1	2019-07-10	H Siddiqui	First version

2 Introduction

This document presents the overall findings of the software test campaign for the SPS SM1 module, that took place during September and October 2019 at LAM.

3 Executive Summary

Table 3 summarizes the results of the individual tests.

Test Case	Pass/FAIL	Comments
SPS-ALERT-TRIGGER-010	Pass	See report section 5.1
SPS-ALERT-INVALID-020	Pass	See report section 5.2
SPS-ALERT-TIMEOUT-030	Pass	See report section 5.3
SPS-XCU-PCM-040	Pass	See report section 5.4
SPS-XCU-GATEVALVE-050	Pass	See report section 5.5
SPS-XCU-TURBO-060	Pass	See report section 5.6
SPS-XCU-IONPUMP-070	Pass	See report section 5.7
SPS-XCU-GAUGE-080	Pass	See report section 5.8
SPS-XCU-COOLER-090	Pass	See report section 5.9
SPS-XCU-TEMPS-100	Pass	See report section 5.10
SPS-XCU-HEATERS-110	Pass	See report section 5.11
SPS-LOG-120	NA	See report section 5.12
SPS-IO-130	NA	See report section 5.13
SPS-BIAS-140	Pass	See report section 5.14
SPS-DARK-150	Pass	See report section 5.15
SPS-SHUTTER-160	Pass	See report section 5.16
SPS-SLIT-170	Pass	See report section 5.17
SPS-REXM-180	Pass	See report section 5.18
SPS-BIA-190	FAILED	See report section 5.19
SPS-TEMPS-200	FAILED	See report section 5.20
SPS-IIS-210	Pass	See report section 5.21

3.1 Discussion

SPS-BIA-190 and SPS-TEMPS-200 tests have been listed as failed. These failures were expected because during execution of these tests the hardware was not in fact connected. Therefore the overall test campaign was not affected. While SPS-LOG-120 and SPS-IO-130 were not executed, other tests conducted have demonstrated the purpose of these tests well in our opinion.

4 Conclusions

The test campaign is considered overall as **successful**.

5 Additional notes

5.1 SPS-ALERT-TRIGGER-010

step 1 : keywords are generated within ranges, no alerts are raised yet

```
oneCmd.py 2019-10-10T11:40:40.635 sent alerts connect controller=tests
oneCmd.py 2019-10-10T11:40:40.710 alerts : controllers="tests"

testsActor-log 2019-10-10 11:40:53.008Z cmds          20 CommandLink.py:121 > 0 0 i keytest1=163.2,165.35
testsActor-log 2019-10-10 11:40:53.009Z cmds          20 CommandLink.py:121 > 0 0 i keytest2=1.3e-7
testsActor-log 2019-10-10 11:40:53.009Z cmds          20 CommandLink.py:121 > 0 0 i keytest3=Closed,OK

STS-Server-log 2019-10-10 13:40:53,082 [INFO] Datum(id=2010, format=4, timestamp=1570707653, value=(163.2, 'OK'))
STS-Server-log 2019-10-10 13:40:53,133 [INFO] Datum(id=2011, format=4, timestamp=1570707653, value=(165.35, 'OK'))
STS-Server-log 2019-10-10 13:40:53,180 [INFO] Datum(id=2012, format=4, timestamp=1570707653, value=(1.3e-07, 'OK'))
STS-Server-log 2019-10-10 13:40:53,247 [INFO] Datum(id=2013, format=4, timestamp=1570707653, value=(nan, 'OK'))
STS-Server-log 2019-10-10 13:40:53,335 [INFO] Datum(id=2014, format=4, timestamp=1570707653, value=(nan, 'OK'))
```

step 2 : send tests alerts trigger

```
oneCmd.py 2019-10-10T11:40:57.503 sent tests alerts trigger
oneCmd.py 2019-10-10T11:40:57.510 tests : test=alerts-trigger,OK

testsActor-log 2019-10-10T11:40:57.507 tests i keytest1=210.89,180.65
testsActor-log 2019-10-10T11:40:57.509 tests i keytest2="10.2"
testsActor-log 2019-10-10T11:40:57.510 tests i keytest3=Open,"Status is not OK !! "

STS-Server-log 2019-10-10 13:40:57,630 [INFO] Datum(id=2010, format=4, timestamp=1570707657, value=(210.89, 'tests keytest1[0] : 210.89K out of range'))
STS-Server-log 2019-10-10 13:40:57,689 [INFO] Datum(id=2011, format=4, timestamp=1570707657, value=(180.65, 'tests keytest1[1] : 180.65K out of range'))
STS-Server-log 2019-10-10 13:40:57,737 [INFO] Datum(id=2012, format=4, timestamp=1570707657, value=(10.2, 'keytest3 is too high!!: 10.2'))
STS-Server-log 2019-10-10 13:40:57,788 [INFO] Datum(id=2013, format=4, timestamp=1570707657, value=(nan, 'OK'))
STS-Server-log 2019-10-10 13:40:57,838 [INFO] Datum(id=2014, format=4, timestamp=1570707657, value=(nan, 'test regexp : Status is not OK !! '))
```

As a conclusion, alerts are correctly generated

5.2 SPS-ALERT-INVALID-020

step 1 : keywords are generated within ranges, no alerts are raised yet

```
testsActor-log 2019-10-10 11:41:08.010Z cmds          20 CommandLink.py:121 > 0 0 i keytest1=163.2,165.35
testsActor-log 2019-10-10 11:41:08.010Z cmds          20 CommandLink.py:121 > 0 0 i keytest2=1.3e-7
testsActor-log 2019-10-10 11:41:08.010Z cmds          20 CommandLink.py:121 > 0 0 i keytest3=Closed,OK

STS-Server-log 2019-10-10 13:41:08,080 [INFO] Datum(id=2010, format=4, timestamp=1570707668, value=(163.2, 'OK'))
STS-Server-log 2019-10-10 13:41:08,130 [INFO] Datum(id=2011, format=4, timestamp=1570707668, value=(165.35, 'OK'))
STS-Server-log 2019-10-10 13:41:08,181 [INFO] Datum(id=2012, format=4, timestamp=1570707668, value=(1.3e-07, 'OK'))
STS-Server-log 2019-10-10 13:41:08,231 [INFO] Datum(id=2013, format=4, timestamp=1570707668, value=(nan, 'OK'))
STS-Server-log 2019-10-10 13:41:08,300 [INFO] Datum(id=2014, format=4, timestamp=1570707668, value=(nan, 'OK'))
```

step 2 : generate invalid values

```

oneCmd.py 2019-10-10T11:41:14.332 sent tests alerts invalid
oneCmd.py 2019-10-10T11:41:14.338 tests : test=alerts-invalid,OK

testsActor-log 2019-10-10T11:41:14.335 tests i keytest1=nan,nan
testsActor-log 2019-10-10T11:41:14.335 tests i keytest2="nan"
testsActor-log 2019-10-10T11:41:14.338 tests i keytest3=Closed,OK

STS-Server-log 2019-10-10 13:41:14,412 [INFO] Datum(id=2010, format=4, timestamp=1570707674, value=(nan, 'tests keytest1[0] : is unknown'))
STS-Server-log 2019-10-10 13:41:14,497 [INFO] Datum(id=2011, format=4, timestamp=1570707674, value=(nan, 'tests keytest1[1] : is unknown'))
STS-Server-log 2019-10-10 13:41:14,538 [INFO] Datum(id=2012, format=4, timestamp=1570707674, value=(nan, 'tests keytest2[0] : is unknown'))

```

As a conclusion, alerts are correctly generated

5.3 SPS-ALERT-TIMEOUT-030

Keyword generation is stopped

```

oneCmd.py 2019-10-10T11:41:31.149 sent tests alerts timeout
oneCmd.py 2019-10-10T11:41:31.152 tests i text="stopping monitoring"
oneCmd.py 2019-10-10T11:41:31.153 tests : test=alerts-timeout,OK

STS-Server-log 2019-10-10 13:44:40,759 [INFO] Datum(id=2010, format=4, timestamp=1570707880, value=(163.2, 'tests keytest1[0] NO DATA since 197 s'))
STS-Server-log 2019-10-10 13:44:40,806 [INFO] Datum(id=2011, format=4, timestamp=1570707880, value=(165.35, 'tests keytest1[i] NO DATA since 197 s'))
STS-Server-log 2019-10-10 13:44:40,852 [INFO] Datum(id=2012, format=4, timestamp=1570707880, value=(1.3e-07, 'tests keytest2[0] NO DATA since 197 s'))
STS-Server-log 2019-10-10 13:44:40,898 [INFO] Datum(id=2013, format=4, timestamp=1570707880, value=(nan, 'tests keytest3[0] NO DATA since 197 s'))
STS-Server-log 2019-10-10 13:44:40,940 [INFO] Datum(id=2014, format=4, timestamp=1570707880, value=(nan, 'tests keytest3[1] NO DATA since 197 s'))

```

After 180 sec NO DATA alerts are correctly raised

5.4 SPS-XCU-PCM-040

test=power-b1,OK

```

testsActor-log 2019-10-09T18:10:28.363 sent tests power cam=b1
testsActor-log 2019-10-09T18:10:28.367 tests i text="starting b1 power test"
testsActor-log 2019-10-09T18:10:28.368 tests i text="checking pcm tcp server"
testsActor-log 2019-10-09T18:10:28.869 tests i text="power status OK, retrieving data ..."
testsActor-log 2019-10-09T18:10:39.608 tests i bl__24vupsvolts=27.6833,0.0288675
testsActor-log 2019-10-09T18:10:39.609 tests i bl__24vupscurrent=1.26667,0.0057735
testsActor-log 2019-10-09T18:10:39.610 tests i bl__24vupspower=35.0657,0.196299
testsActor-log 2019-10-09T18:10:39.611 tests i bl__24vauxvolts=24.55,0
testsActor-log 2019-10-09T18:10:39.612 tests i bl__24vauxcurrent=0.0933333,0.0208167
testsActor-log 2019-10-09T18:10:39.614 tests i bl__24vauxpower=2.29133,0.510569
testsActor-log 2019-10-09T18:10:39.615 tests i bl__motorsvolts=0.166667,0.0288675
testsActor-log 2019-10-09T18:10:39.616 tests i bl__motorscurrent=0,0
testsActor-log 2019-10-09T18:10:39.617 tests i bl__motorspower=0,0
testsActor-log 2019-10-09T18:10:39.619 tests i bl__gaugevolts=27.65,4.35117e-15
testsActor-log 2019-10-09T18:10:39.620 tests i bl__gaugecurrent=0.09,1.69967e-17
testsActor-log 2019-10-09T18:10:39.621 tests i bl__gaugepower=2.49,0
testsActor-log 2019-10-09T18:10:39.622 tests i bl__coolervolts=27.7,0
testsActor-log 2019-10-09T18:10:39.623 tests i bl__coolercurrent=0.05,8.49837e-18
testsActor-log 2019-10-09T18:10:39.625 tests i bl__coolerpower=1.39,0
testsActor-log 2019-10-09T18:10:39.626 tests i bl__tempvolts=27.75,0
testsActor-log 2019-10-09T18:10:39.627 tests i bl__tempcurrent=0.156667,0.0057735
testsActor-log 2019-10-09T18:10:39.628 tests i bl__tempspower=4.34667,0.161658
testsActor-log 2019-10-09T18:10:39.629 tests i bl__beevolts=27.6167,0.0288675
testsActor-log 2019-10-09T18:10:39.631 tests i bl__beecurrent=0.61,0
testsActor-log 2019-10-09T18:10:39.632 tests i bl__beepower=16.85,0.0173205
testsActor-log 2019-10-09T18:10:39.633 tests i bl__feevolts=27.7167,0.0288675
testsActor-log 2019-10-09T18:10:39.634 tests i bl__feecurrent=0.27,0
testsActor-log 2019-10-09T18:10:39.636 tests i bl__feepower=7.48333,0.0057735
testsActor-log 2019-10-09T18:10:39.637 tests i bl__interlockvolts=27.6833,0.0288675
testsActor-log 2019-10-09T18:10:39.638 tests i bl__interlockcurrent=0,0
testsActor-log 2019-10-09T18:10:39.639 tests i bl__interlockpower=0,0
testsActor-log 2019-10-09T18:10:39.641 tests i bl__heatersvolts=27.75,0
testsActor-log 2019-10-09T18:10:39.642 tests i bl__heaterscurrent=0,0
testsActor-log 2019-10-09T18:10:39.643 tests i bl__heaterspower=0,0
testsActor-log 2019-10-09T18:10:39.648 tests : test=power-b1,OK

```

test=power-r1,OK

```

testsActor-log 2019-10-09T18:11:06.801 sent tests power cam=r1
testsActor-log 2019-10-09T18:11:06.805 tests i text="starting r1 power test"
testsActor-log 2019-10-09T18:11:06.806 tests i text="checking pcm tcp server"
testsActor-log 2019-10-09T18:11:07.301 tests i text="power status OK, retrieving data ..."
testsActor-log 2019-10-09T18:11:17.686 tests i r1__24vupsvolts=27.7,0
testsActor-log 2019-10-09T18:11:17.686 tests i r1__24vupscurrent=1.29,0
testsActor-log 2019-10-09T18:11:17.687 tests i r1__24vupspower=35.733,0
testsActor-log 2019-10-09T18:11:17.688 tests i r1__24vauxvolts=24.45,0
testsActor-log 2019-10-09T18:11:17.689 tests i r1__24vauxcurrent=0.27333,0.011547
testsActor-log 2019-10-09T18:11:17.689 tests i r1__24vauxpower=6.683,0.282324
testsActor-log 2019-10-09T18:11:17.690 tests i r1__motorsvolts=24.45,0
testsActor-log 2019-10-09T18:11:17.693 tests i r1__motorscurrent=0.16,0
testsActor-log 2019-10-09T18:11:17.693 tests i r1__motorspower=3.91,0
testsActor-log 2019-10-09T18:11:17.694 tests i r1__gaugevolts=27.6833,0.0288675
testsActor-log 2019-10-09T18:11:17.695 tests i r1__gaugecurrent=0.08,0
testsActor-log 2019-10-09T18:11:17.697 tests i r1__gaugepower=2.21667,0.0057735
testsActor-log 2019-10-09T18:11:17.698 tests i r1__coolervolts=27.7167,0.0288675
testsActor-log 2019-10-09T18:11:17.699 tests i r1__coolercurrent=0.0433333,0.0057735
testsActor-log 2019-10-09T18:11:17.700 tests i r1__coolerpower=1.20333,0.161658
testsActor-log 2019-10-09T18:11:17.702 tests i r1__tempsvolts=27.7,0
testsActor-log 2019-10-09T18:11:17.703 tests i r1__tempscurrent=0.143333,0.0057735
testsActor-log 2019-10-09T18:11:17.704 tests i r1__tempspower=3.97,0.155885
testsActor-log 2019-10-09T18:11:17.705 tests i r1__beevolts=27.65,4.35117e-15
testsActor-log 2019-10-09T18:11:17.707 tests i r1__beecurrent=0.62,0
testsActor-log 2019-10-09T18:11:17.708 tests i r1__beepower=17.14,0
testsActor-log 2019-10-09T18:11:17.709 tests i r1__feevolts=27.7,0
testsActor-log 2019-10-09T18:11:17.710 tests i r1__feecurrent=0.26,0
testsActor-log 2019-10-09T18:11:17.713 tests i r1__feepower=7.2,0
testsActor-log 2019-10-09T18:11:17.713 tests i r1__interlockvolts=27.7833,0.0288675
testsActor-log 2019-10-09T18:11:17.714 tests i r1__interlockcurrent=0,0
testsActor-log 2019-10-09T18:11:17.715 tests i r1__interlockpower=0,0
testsActor-log 2019-10-09T18:11:17.717 tests i r1__heatersvolts=27.7333,0.0288675
testsActor-log 2019-10-09T18:11:17.718 tests i r1__heaterscurrent=0,0
testsActor-log 2019-10-09T18:11:17.719 tests i r1__heaterspower=0,0
testsActor-log 2019-10-09T18:11:18.149 tests : test=power-r1,OK

```

5.5 SPS-XCU-GATEVALVE-050

test=gatevalve-b1,OK

```

testsActor-log 2019-10-09T18:10:41.486 sent tests gatevalve cam=b1
testsActor-log 2019-10-09T18:10:41.491 tests i text="starting b1 gatevalve test"
testsActor-log 2019-10-09T18:10:41.897 tests i b1__gatevalve=Closed,Closed
testsActor-log 2019-10-09T18:10:41.897 tests i text="gatevalve status OK, retrieving data ..."
testsActor-log 2019-10-09T18:10:52.726 tests i b1__cryostatpressure=-1.80333,0.011547
testsActor-log 2019-10-09T18:10:52.727 tests i b1__roughingpressure=-1.04,0.052915
testsActor-log 2019-10-09T18:10:52.772 tests : test=gatevalve-b1,OK

```

test=gatevalve-r1,OK

```

testsActor-log 2019-10-09T18:11:20.001 sent tests gatevalve cam=r1
testsActor-log 2019-10-09T18:11:20.006 tests i text="starting r1 gatevalve test"
testsActor-log 2019-10-09T18:11:20.496 tests i r1__gatevalve=Closed,Closed
testsActor-log 2019-10-09T18:11:20.497 tests i text="gatevalve status OK, retrieving data ..."
testsActor-log 2019-10-09T18:11:31.476 tests i r1__cryostatpressure=-1.33333,0.0057735
testsActor-log 2019-10-09T18:11:31.476 tests i r1__roughingpressure=-0.49,0.06
testsActor-log 2019-10-09T18:11:31.524 tests : test=gatevalve-r1,OK

```

5.6 SPS-XCU-TURBO-060

test=turbo-b1,OK

```

testsActor-log 2019-10-09T18:10:54.785 sent tests turbo cam=b1
testsActor-log 2019-10-09T18:10:54.789 tests i text="starting b1 turbo test"
testsActor-log 2019-10-09T18:10:54.791 tests i text="connecting turbo controller"
testsActor-log 2019-10-09T18:10:54.982 tests i text="turbo status OK, retrieving data ..."
testsActor-log 2019-10-09T18:11:06.029 tests i b1__turbospeed=0,0
testsActor-log 2019-10-09T18:11:06.029 tests i b1__turbovolts=24.1,4.35117e-15
testsActor-log 2019-10-09T18:11:06.030 tests i b1__turbocurrent=0,0
testsActor-log 2019-10-09T18:11:06.031 tests i b1__turbo功率=1,0
testsActor-log 2019-10-09T18:11:06.032 tests i b1__turbodytemp=20,0
testsActor-log 2019-10-09T18:11:06.033 tests i b1__turbocontrollertemp=29,0
testsActor-log 2019-10-09T18:11:06.080 tests : test=turbo-b1,OK

```

test=turbo-r1,OK

```

testsActor-log 2019-10-09T18:11:33.313 sent tests turbo cam=r1
testsActor-log 2019-10-09T18:11:33.317 tests i text="starting r1 turbo test"
testsActor-log 2019-10-09T18:11:33.318 tests i text="connecting turbo controller"
testsActor-log 2019-10-09T18:11:33.517 tests i text="turbo status OK, retrieving data ..."
testsActor-log 2019-10-09T18:11:43.223 tests i r1__turbospeed=0,0
testsActor-log 2019-10-09T18:11:43.224 tests i r1__turbovolts=24.1667,0.057735
testsActor-log 2019-10-09T18:11:43.225 tests i r1__turbocurrent=0.2,3.39935e-17
testsActor-log 2019-10-09T18:11:43.225 tests i r1__turbopower=4.2,0
testsActor-log 2019-10-09T18:11:43.228 tests i r1__turbobodytemp=20,0
testsActor-log 2019-10-09T18:11:43.229 tests i r1__turbocontrollertemp=29,0
testsActor-log 2019-10-09T18:11:43.277 tests : test=turbo-r1,OK

```

5.7 SPS-XCU-IONPUMP-070

test=ionpump-b1,OK

```

testsActor-log 2019-10-09T18:11:07.883 sent tests ionpump cam=b1
testsActor-log 2019-10-09T18:11:07.887 tests i text="starting b1 ionpump test"
testsActor-log 2019-10-09T18:11:24.897 tests i text="connecting ionpump controller"
testsActor-log 2019-10-09T18:11:26.820 tests i text="ionpump status OK, retrieving data ..."
testsActor-log 2019-10-09T18:11:37.093 tests i b1__ionpump1volts=7000,0
testsActor-log 2019-10-09T18:11:37.094 tests i b1__ionpump1current=8.6e-05,1.65984e-20
testsActor-log 2019-10-09T18:11:37.094 tests i b1__ionpump1temps=44,0
testsActor-log 2019-10-09T18:11:37.094 tests i b1__ionpump1pressure=1.3e-07,0
testsActor-log 2019-10-09T18:11:37.095 tests i b1__ionpump2volts=6900,0
testsActor-log 2019-10-09T18:11:37.095 tests i b1__ionpump2current=9.3e-05,0
testsActor-log 2019-10-09T18:11:37.095 tests i b1__ionpump2temps=43,0
testsActor-log 2019-10-09T18:11:37.095 tests i b1__ionpump2pressure=1.4e-07,0
testsActor-log 2019-10-09T18:11:44.653 tests : test=ionpump-b1,OK

```

test=ionpump-r1,OK

```

testsActor-log 2019-10-09T18:11:45.141 sent tests ionpump cam=r1
testsActor-log 2019-10-09T18:11:45.145 tests i text="starting r1 ionpump test"
testsActor-log 2019-10-09T18:12:00.205 tests i text="connecting ionpump controller"
testsActor-log 2019-10-09T18:12:03.976 tests i text="ionpump status OK, retrieving data ..."
testsActor-log 2019-10-09T18:12:13.712 tests i r1__ionpump1volts=7000,0
testsActor-log 2019-10-09T18:12:13.713 tests i r1__ionpump1current=0.00016,0
testsActor-log 2019-10-09T18:12:13.714 tests i r1__ionpump1temps=47,0
testsActor-log 2019-10-09T18:12:13.715 tests i r1__ionpump1pressure=2.5e-07,0
testsActor-log 2019-10-09T18:12:13.717 tests i r1__ionpump2volts=7000,0
testsActor-log 2019-10-09T18:12:13.718 tests i r1__ionpump2current=0.00017,0
testsActor-log 2019-10-09T18:12:13.719 tests i r1__ionpump2temps=49,0
testsActor-log 2019-10-09T18:12:13.720 tests i r1__ionpump2pressure=2.7e-07,0
testsActor-log 2019-10-09T18:12:21.280 tests : test=ionpump-r1,OK

```

5.8 SPS-XCU-GAUGE-080

test=gauge-b1,OK

```

testsActor-log 2019-10-09T18:11:46.514 sent tests gauge cam=b1
testsActor-log 2019-10-09T18:11:46.519 tests i text="starting b1 gauge test"
testsActor-log 2019-10-09T18:11:46.519 tests i text="checking pcm tcp server"
testsActor-log 2019-10-09T18:11:48.348 tests i text="gauge status OK, retrieving data ..."
testsActor-log 2019-10-09T18:11:58.204 tests i b1__gauge=2.10873e-07,3.24187e-23
testsActor-log 2019-10-09T18:11:58.253 tests : test=gauge-b1,OK

```

test=gauge-r1,OK

```

testsActor-log 2019-10-09T18:12:23.100 sent tests gauge cam=r1
testsActor-log 2019-10-09T18:12:23.104 tests i text="starting r1 gauge test"
testsActor-log 2019-10-09T18:12:23.105 tests i text="checking pcm tcp server"
testsActor-log 2019-10-09T18:12:23.188 tests i text="gauge status OK, retrieving data ..."
testsActor-log 2019-10-09T18:12:32.609 tests i r1__gauge=2.74604e-07,0
testsActor-log 2019-10-09T18:12:32.657 tests : test=gauge-r1,OK

```

5.9 SPS-XCU-COOLER-090

test=cooler-b1,OK

```

testsActor-log 2019-10-09T18:12:00.229 sent tests cooler cam=b1
testsActor-log 2019-10-09T18:12:00.276 tests i text="starting b1 cooler test"
testsActor-log 2019-10-09T18:12:00.278 tests i text="checking cooler tcp server"
testsActor-log 2019-10-09T18:12:00.278 tests i text="connecting cooler controller"
testsActor-log 2019-10-09T18:12:00.642 tests i text="cooler status OK, retrieving data ..."
testsActor-log 2019-10-09T18:12:11.048 tests i bl__coolerasetpoint=128.15,0
testsActor-log 2019-10-09T18:12:11.049 tests i bl__coolerreject=20.98,0
testsActor-log 2019-10-09T18:12:11.050 tests i bl__coolertip=128.143,0.0057735
testsActor-log 2019-10-09T18:12:11.050 tests i bl__coolerpower=79.8467,0.0351188
testsActor-log 2019-10-09T18:12:11.096 tests : test=cooler-b1,OK

```

test=cooler-r1,OK

```

testsActor-log 2019-10-09T18:12:34.793 sent tests cooler cam=r1
testsActor-log 2019-10-09T18:12:34.798 tests i text="starting r1 cooler test"
testsActor-log 2019-10-09T18:12:34.799 tests i text="checking cooler tcp server"
testsActor-log 2019-10-09T18:12:34.800 tests i text="connecting cooler controller"
testsActor-log 2019-10-09T18:12:35.173 tests i text="cooler status OK, retrieving data ..."
testsActor-log 2019-10-09T18:12:46.910 tests i r1__coolerasetpoint=128.64,0
testsActor-log 2019-10-09T18:12:46.911 tests i r1__coolerreject=20.92,0
testsActor-log 2019-10-09T18:12:46.912 tests i r1__coolertip=128.637,0.0057735
testsActor-log 2019-10-09T18:12:46.913 tests i r1__coolerpower=81.3167,0.0416333
testsActor-log 2019-10-09T18:12:47.434 tests : test=cooler-r1,OK

```

5.10 SPS-XCU-TEMPS-100

test=temps-b1,OK

```

testsActor-log 2019-10-09T18:12:12.905 sent tests temps cam=b1
testsActor-log 2019-10-09T18:12:12.911 tests i text="starting b1 temps test"
testsActor-log 2019-10-09T18:12:12.912 tests i text="checking temps tcp server"
testsActor-log 2019-10-09T18:12:12.912 tests i text="connecting temps controller"
testsActor-log 2019-10-09T18:12:12.977 tests i text="temps status OK, retrieving data ..."
testsActor-log 2019-10-09T18:12:23.948 tests i bl__detectorbox=156.48,0.000450925
testsActor-log 2019-10-09T18:12:23.949 tests i bl__mangin=289.244,0.000404145
testsActor-log 2019-10-09T18:12:23.951 tests i bl__spider=148.233,0.000556776
testsActor-log 2019-10-09T18:12:23.952 tests i bl__thermalspreader=139.286,0.000208167
testsActor-log 2019-10-09T18:12:23.953 tests i bl__frontring=291.228,0.000321455
testsActor-log 2019-10-09T18:12:23.954 tests i bl__detectorstrap1=162.094,0.0006
testsActor-log 2019-10-09T18:12:23.956 tests i bl__detectorstrap2=163.066,0.000680686
testsActor-log 2019-10-09T18:12:24.005 tests : test=temps-b1,OK

```

test=temps-r1,OK

```

testsActor-log 2019-10-09T18:12:49.318 sent tests temps cam=r1
testsActor-log 2019-10-09T18:12:49.321 tests i text="starting r1 temps test"
testsActor-log 2019-10-09T18:12:49.322 tests i text="checking temps tcp server"
testsActor-log 2019-10-09T18:12:49.322 tests i text="connecting temps controller"
testsActor-log 2019-10-09T18:12:49.380 tests i text="temps status OK, retrieving data ..."
testsActor-log 2019-10-09T18:12:58.523 tests i r1__detectorbox=162.883,0.000458258
testsActor-log 2019-10-09T18:12:58.524 tests i r1__mangin=289.434,0.00064291
testsActor-log 2019-10-09T18:12:58.530 tests i r1__spider=157.554,0.000288675
testsActor-log 2019-10-09T18:12:58.532 tests i r1__thermalspreader=141.277,0.000251661
testsActor-log 2019-10-09T18:12:58.533 tests i r1__frontring=291.621,0.00051316
testsActor-log 2019-10-09T18:12:58.535 tests i r1__detectorstrap1=162.193,0.00061101
testsActor-log 2019-10-09T18:12:58.536 tests i r1__detectorstrap2=162.275,0.000556776
testsActor-log 2019-10-09T18:12:58.584 tests : test=temps-r1,OK

```

5.11 SPS-XCU-HEATERS-110

test=temps-b1,OK

```

testsActor-log 2019-10-09T18:12:25.954 sent tests heaters cam=b1
testsActor-log 2019-10-09T18:12:25.960 tests i text="starting b1 heaters test"
testsActor-log 2019-10-09T18:12:25.981 tests i text="heaters status OK, retrieving data ..."
testsActor-log 2019-10-09T18:12:35.369 tests i bl__heatersccdenabled=0,0
testsActor-log 2019-10-09T18:12:35.369 tests i bl__heatersspreaderrenabled=0,0
testsActor-log 2019-10-09T18:12:35.369 tests i bl__heatersccdfraction=0,0
testsActor-log 2019-10-09T18:12:35.370 tests i bl__heatersspreaderfraction=0,0
testsActor-log 2019-10-09T18:12:35.417 tests : test=heaters-b1,OK

```

test=temps-r1,OK

```

testsActor-log 2019-10-09T18:13:00.614 sent tests heaters cam=r1
testsActor-log 2019-10-09T18:13:00.617 tests i text="starting r1 heaters test"
testsActor-log 2019-10-09T18:13:02.189 tests i text="heaters status OK, retrieving data ..."
testsActor-log 2019-10-09T18:13:11.563 tests i r1__heatersccdenabled=0,0
testsActor-log 2019-10-09T18:13:11.564 tests i r1__heatersspreaderrenabled=0,0
testsActor-log 2019-10-09T18:13:11.565 tests i r1__heatersccdfraction=0,0
testsActor-log 2019-10-09T18:13:11.566 tests i r1__heatersspreaderfraction=0,0
testsActor-log 2019-10-09T18:13:11.612 tests : test=heaters-r1,OK

```


5.12 SPS-LOG-120

NOT IMPLEMENTED: However the majority of tests conducted do write log files and demonstrate the purpose of this test case.

5.13 SPS-IO-130

NOT IMPLEMENTED: SPS-BIAS-140 and SPS-DARK-150 partly cover it, because they create new files onto /data

5.14 SPS-BIAS-140

test=bias-b1,OK

```
testsActor-log 2019-10-09T18:07:45.669 sent tests bias cam=b1
testsActor-log 2019-10-09T18:07:45.675 tests i text="starting b1 bias test"
testsActor-log 2019-10-09T18:08:39.589 tests i filepath="/data/pfs/pfs/2019-10-09/PFLA02324511.fits"
testsActor-log 2019-10-09T18:08:39.590 tests i simple="True"
testsActor-log 2019-10-09T18:08:39.590 tests i bitpix="16"
testsActor-log 2019-10-09T18:08:39.591 tests i naxis="2"
testsActor-log 2019-10-09T18:08:39.592 tests i naxis1="4416"
testsActor-log 2019-10-09T18:08:39.592 tests i naxis2="4300"
testsActor-log 2019-10-09T18:08:39.592 tests i headers="1"
testsActor-log 2019-10-09T18:08:39.592 tests i specnum="1"
testsActor-log 2019-10-09T18:08:39.593 tests i dewarnam="blue"
testsActor-log 2019-10-09T18:08:39.593 tests i arm="blue"
testsActor-log 2019-10-09T18:08:39.593 tests i detnum="2"
testsActor-log 2019-10-09T18:08:39.595 tests i imagetyp="bias"
testsActor-log 2019-10-09T18:08:39.595 tests i exptime="0.0"
testsActor-log 2019-10-09T18:08:39.595 tests i darktime="0.0"
testsActor-log 2019-10-09T18:08:39.596 tests i w_pfdsgn="72057594037927936"
testsActor-log 2019-10-09T18:08:39.596 tests i w_visit="23245"
testsActor-log 2019-10-09T18:08:39.596 tests : test=bias-b1,OK
```

test=bias-r1,OK

```
testsActor-log 2019-10-09T18:07:01.449 sent tests bias cam=r1
testsActor-log 2019-10-09T18:07:01.453 tests i text="starting r1 bias test"
testsActor-log 2019-10-09T18:07:54.866 tests i filepath="/data/pfs/pfs/2019-10-09/PFLA02324414.fits"
testsActor-log 2019-10-09T18:07:54.866 tests i simple="True"
testsActor-log 2019-10-09T18:07:54.867 tests i bitpix="16"
testsActor-log 2019-10-09T18:07:54.867 tests i naxis="2"
testsActor-log 2019-10-09T18:07:54.868 tests i naxis1="4416"
testsActor-log 2019-10-09T18:07:54.868 tests i naxis2="4300"
testsActor-log 2019-10-09T18:07:54.870 tests i headers="1"
testsActor-log 2019-10-09T18:07:54.870 tests i specnum="1"
testsActor-log 2019-10-09T18:07:54.870 tests i dewarnam="red"
testsActor-log 2019-10-09T18:07:54.870 tests i arm="red"
testsActor-log 2019-10-09T18:07:54.871 tests i detnum="2"
testsActor-log 2019-10-09T18:07:54.871 tests i imagetyp="bias"
testsActor-log 2019-10-09T18:07:54.871 tests i exptime="0.0"
testsActor-log 2019-10-09T18:07:54.871 tests i darktime="0.0"
testsActor-log 2019-10-09T18:07:54.871 tests i w_pfdsgn="72057594037927936"
testsActor-log 2019-10-09T18:07:54.871 tests i w_visit="23244"
testsActor-log 2019-10-09T18:07:54.873 tests : test=bias-r1,OK
```

5.15 SPS-DARK-150

test=dark-b1,OK

```
testsActor-log 2019-10-09T18:08:41.595 sent tests dark cam=b1
testsActor-log 2019-10-09T18:08:41.599 tests i text="starting b1 dark test"
testsActor-log 2019-10-09T18:09:45.967 tests i filepath="/data/pfs/pfs/2019-10-09/PFLA02324711.fits"
testsActor-log 2019-10-09T18:09:45.968 tests i simple="True"
testsActor-log 2019-10-09T18:09:45.968 tests i bitpix="16"
testsActor-log 2019-10-09T18:09:45.968 tests i naxis="2"
testsActor-log 2019-10-09T18:09:45.968 tests i naxis1="4416"
testsActor-log 2019-10-09T18:09:45.969 tests i naxis2="4300"
testsActor-log 2019-10-09T18:09:45.969 tests i headers="1"
testsActor-log 2019-10-09T18:09:45.969 tests i specnum="1"
testsActor-log 2019-10-09T18:09:45.969 tests i dewarnam="blue"
testsActor-log 2019-10-09T18:09:45.969 tests i arm="blue"
```

```

testsActor-log 2019-10-09T18:09:45.970 tests i detnum="2"
testsActor-log 2019-10-09T18:09:45.971 tests i imagetyp="dark"
testsActor-log 2019-10-09T18:09:45.973 tests i exptime="10.0"
testsActor-log 2019-10-09T18:09:45.973 tests i darktime="10.001"
testsActor-log 2019-10-09T18:09:45.973 tests i w_pfdsgn="72057594037927936"
testsActor-log 2019-10-09T18:09:45.973 tests i w_visit="23247"
testsActor-log 2019-10-09T18:09:45.974 tests : test=dark-b1,OK

```

test=dark-r1,OK

```

testsActor-log 2019-10-09T18:07:56.683 sent tests dark cam=r1
testsActor-log 2019-10-09T18:07:56.688 tests i text="starting r1 dark test"
testsActor-log 2019-10-09T18:09:01.052 tests i filepath="/data/pfs/pfs/2019-10-09/PFLA02324614.fits"
testsActor-log 2019-10-09T18:09:01.053 tests i simple="True"
testsActor-log 2019-10-09T18:09:01.053 tests i bitpix="16"
testsActor-log 2019-10-09T18:09:01.053 tests i naxis="2"
testsActor-log 2019-10-09T18:09:01.054 tests i naxis1="4416"
testsActor-log 2019-10-09T18:09:01.054 tests i naxis2="4300"
testsActor-log 2019-10-09T18:09:01.054 tests i headvers="1"
testsActor-log 2019-10-09T18:09:01.056 tests i specnum="1"
testsActor-log 2019-10-09T18:09:01.056 tests i dewarnam="red"
testsActor-log 2019-10-09T18:09:01.057 tests i arm="red"
testsActor-log 2019-10-09T18:09:01.057 tests i detnum="2"
testsActor-log 2019-10-09T18:09:01.057 tests i imagetyp="dark"
testsActor-log 2019-10-09T18:09:01.057 tests i exptime="10.0"
testsActor-log 2019-10-09T18:09:01.057 tests i darktime="10.0"
testsActor-log 2019-10-09T18:09:01.057 tests i w_pfdsgn="72057594037927936"
testsActor-log 2019-10-09T18:09:01.059 tests i w_visit="23246"
testsActor-log 2019-10-09T18:09:01.059 tests : test=dark-r1,OK

```

5.16 SPS-SHUTTER-160

test=shutters-sm1,OK

```

testsActor-log 2019-10-09T18:38:39.707 sent tests shutters sm1
testsActor-log 2019-10-09T18:38:39.710 tests i text="starting shutters-sm1 test"
testsActor-log 2019-10-09T18:38:47.836 tests i text="shutters status OK, testing exposure..."
testsActor-log 2019-10-09T18:38:50.840 tests i text="testing shutter"
testsActor-log 2019-10-09T18:38:56.366 tests i text="exptime error = 0.001 s"
testsActor-log 2019-10-09T18:38:59.370 tests i text="testing blue shutter"
testsActor-log 2019-10-09T18:39:04.798 tests i text="exptime error = 0.003 s"
testsActor-log 2019-10-09T18:39:07.802 tests i text="testing red shutter"
testsActor-log 2019-10-09T18:39:13.321 tests i text="exptime error = 0.001 s"
testsActor-log 2019-10-09T18:39:13.322 tests : test=shutters-sm1,OK

```

5.17 SPS-SLIT-170

test=slit-sm1,OK

```

testsActor-log 2019-10-09T18:32:27.758 sent tests slit sm1
testsActor-log 2019-10-09T18:32:27.762 tests i text="starting slit-sm1 test"
testsActor-log 2019-10-09T18:32:34.395 tests i text="slit status OK, testing motion ..."
testsActor-log 2019-10-09T18:32:37.399 tests i text="moving to X=1.0 Y=0.0 Z=0.0 U=0.0 V=0.0 W=0.0"
testsActor-log 2019-10-09T18:32:38.113 tests i text="cumulate error=3.9999999997449e-05"
testsActor-log 2019-10-09T18:32:41.117 tests i text="moving to X=0.0 Y=1.0 Z=0.0 U=0.0 V=0.0 W=0.0"
testsActor-log 2019-10-09T18:32:42.065 tests i text="cumulate error=9.9999999995449e-06"
testsActor-log 2019-10-09T18:32:45.069 tests i text="moving to X=0.0 Y=0.0 Z=1.0 U=0.0 V=0.0 W=0.0"
testsActor-log 2019-10-09T18:32:46.733 tests i text="cumulate error=1.9999999995449e-05"
testsActor-log 2019-10-09T18:32:49.738 tests i text="moving to home"
testsActor-log 2019-10-09T18:32:50.899 tests : test=slit-sm1,OK

```

5.18 SPS-REXM-180

test=rexm-sm1,OK

```

testsActor-log 2019-10-09T18:32:52.796 sent tests rexm sm1
testsActor-log 2019-10-09T18:32:52.799 tests i text="starting rexm-sm1 test"
testsActor-log 2019-10-09T18:33:24.903 tests i text="rexm status OK, testing motion..."
testsActor-log 2019-10-09T18:33:27.907 tests i text="going to med position"
testsActor-log 2019-10-09T18:36:00.927 tests i text="rexm motion completed in 152.7 s"
testsActor-log 2019-10-09T18:36:03.931 tests i text="going to low position"
testsActor-log 2019-10-09T18:38:37.352 tests i text="rexm motion completed in 153.1 s"
testsActor-log 2019-10-09T18:38:37.353 tests : test=rexm-sm1,OK

```

5.19 SPS-BIA-190

test=bia-sm1,FAILED

```
testsActor-log 2019-10-09T18:39:15.187 sent tests bia sm1
testsActor-log 2019-10-09T18:39:15.190 tests i text="starting bia-sm1 test"
testsActor-log 2019-10-09T18:39:23.051 tests i text="bia status OK, turning it on ..."
testsActor-log 2019-10-09T18:39:32.448 tests i sm1__biaphoto1=0,0
testsActor-log 2019-10-09T18:39:32.449 tests i sm1__biaphoto2=0,0
testsActor-log 2019-10-09T18:39:32.518 tests w test=bia-sm1,FAILED
testsActor-log 2019-10-09T18:39:32.520 tests f text="command failed: RuntimeError('sm1__biaPhoto1 is not detecting light',) in bia()
at /software/mhs/devel/ics_testsActor/python/testsActor/Controllers/enu.py:119"
```

BIA was not wired in, the test failed but it was expected .

5.20 SPS-TEMPS-200

test=temps-sm1,FAILED

```
testsActor-log 2019-10-09T18:32:02.112 sent tests temps sm1
testsActor-log 2019-10-09T18:32:02.117 tests i text="starting temps-sm1 test"
testsActor-log 2019-10-09T18:32:10.288 tests i text="temps status OK, retrieving data ..."
testsActor-log 2019-10-09T18:32:25.923 tests i sm1__motor_rda=31.455,0.049689
testsActor-log 2019-10-09T18:32:25.925 tests w sm1__motor_shutter_b=nan,nan
testsActor-log 2019-10-09T18:32:25.925 tests w sm1__motor_shutter_r=nan,nan
testsActor-log 2019-10-09T18:32:25.926 tests w sm1__bia_box_upper=nan,nan
testsActor-log 2019-10-09T18:32:25.927 tests w sm1__bia_box_lower=nan,nan
testsActor-log 2019-10-09T18:32:25.928 tests i sm1__fiber_unit_bench_level=19.3143,0.00057735
testsActor-log 2019-10-09T18:32:25.929 tests w sm1__fiber_unit_hexapod_top=nan,nan
testsActor-log 2019-10-09T18:32:25.930 tests w sm1__fiber_unit_fiber_frame_top=nan,nan
testsActor-log 2019-10-09T18:32:25.930 tests i sm1__collimator_frame_bench_level=19.0467,0.00208167
testsActor-log 2019-10-09T18:32:25.931 tests i sm1__collimator_frame_top=19.1497,0.00208167
testsActor-log 2019-10-09T18:32:25.932 tests i sm1__bench_left_top=19.0403,0.00057735
testsActor-log 2019-10-09T18:32:25.933 tests i sm1__bench_left_bottom=19.0867,0.00152753
testsActor-log 2019-10-09T18:32:25.934 tests i sm1__bench_right_top=19.1527,0.00208167
testsActor-log 2019-10-09T18:32:25.934 tests i sm1__bench_right_bottom=19.4223,0.00057735
testsActor-log 2019-10-09T18:32:25.935 tests i sm1__bench_far_top=18.9313,0.00057735
testsActor-log 2019-10-09T18:32:25.936 tests i sm1__bench_far_bottom=19.1127,0.00404145
testsActor-log 2019-10-09T18:32:25.937 tests i sm1__bench_near_top=19.403,0.001
testsActor-log 2019-10-09T18:32:25.938 tests i sm1__bench_near_bottom=19.8817,0.00152753
testsActor-log 2019-10-09T18:32:25.938 tests i sm1__bench_central_bottom=19.116,0
testsActor-log 2019-10-09T18:32:25.939 tests w test=temps-sm1,FAILED
testsActor-log 2019-10-09T18:32:25.940 tests f text="command failed: RuntimeError('sm1__MOTOR_SHUTTER_B, sm1__MOTOR_SHUTTER_R, sm1__BIA_BOX_UPPER,
sm1__BIA_BOX_LOWER, sm1__FIBER_UNIT_HEXAPOD_TOP, sm1__FIBER_UNIT_FIBER_FRAME_TOP are invalid',) in genSample() at python/testsActor/main.py:89"
```

when FCA3 was replaced by FCA2, some sensors has been disconnected but never been connected again. As a result the test failed

5.21 SPS-IIS-210

test=iis-sm1,OK

```
testsActor-log 2019-10-09T18:39:34.369 sent tests iis sm1
testsActor-log 2019-10-09T18:39:34.373 tests i text="starting iis-sm1 test"
testsActor-log 2019-10-09T18:39:39.818 tests i text="iis status OK, warming up lamp..."
testsActor-log 2019-10-09T18:40:10.424 tests i sm1__iishgarvolts=239.74,0.155242
testsActor-log 2019-10-09T18:40:10.425 tests i sm1__iishgarcurrent=0.07,0
testsActor-log 2019-10-09T18:40:10.428 tests i sm1__iishgarpower=4.18667,0.080829
testsActor-log 2019-10-09T18:40:10.753 tests : test=iis-sm1,OK
```

Acronyms

SPS Spectrograph System.

Glossary

Spectrograph System The software which commands cobra motions.