



VISIONA

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SGDC-1

IN-ORBIT HEALTH REPORT

June, 2019

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2 SUMMARY

This report refers to the period after the interval covered in the previous report, delivered on 23 April 2018.

Accordingly, the period covered in this report begins on March 21, 2018 and ends on May 31, 2019.

During this period the spacecraft has performed in accordance with specifications without experiencing any major anomalies or loss of unit.

3 PAYLOAD

The payload configuration is the nominal one during this period covered by this report.

An abnormal current was detected in TWTA as described:

At 21/08/2018 13:47 UTC the TM has raised an alarm (the TM has reached the value 6.298 mA and the limit is 5 mA). This alarm corresponds to "LCTWTA 5TT2-09 helix current". The TWTAs related to this helix current are 5TE2-18 and 5TE2-19.

A test procedure was performed and the TWTA 5TE2-19 was identified as responsible for the anomaly.

The helix current spikes were due to Rod Charging. The TWTA provider (Thales Electron Devices - TED) confirms this root cause after all the IOT results analysis.

After proper identification, a recovery procedure was performed with success.

The satellite provider (Thales Alenia Space - TAS) and TED reviewed all the TWTA parameters and confirm that TWTA 5TE2-19 is fully operational and can be used without any restriction and according to the TWTA user manual.

Payload performances are as expected.

4 BUS SUBSYSTEMS

4.1 THERMAL

No out of limits has been triggered on the satellite on the thermal subsystem.

4.2 STATION KEEPING

Number of maneuvers performed in NM between 21st of March 2018 and 31st of May 2019:

South maneuvers:	13
North maneuvers:	18
West maneuvers:	63
East maneuvers:	-

No abnormal behavior that may generate unexpected propellant consumption has been noticed during maneuvers. However, according to TAS report (attached) there is a decrease of 1.14 years in lifetime from IOR explained by:

- The raising of propellant residuals estimations (-0.69 years)
- Lower N/S and particular E/W Isp estimations (-0.43 years)

Therefore, the current End of Lifetime prediction is 24th January 2035.

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4.3 POWER

Power subsystem behavior is as expected.

Battery performances during eclipses' season is nominal ever since.

Solar array performances:

- In June solstice: 12194 W (nominal)
- In December solstice: 13165 W (nominal)
- In March equinox: 13819 W (nominal)
- In September equinox: 13638 W (nominal)

Power budget provided at beginning of life is still applicable as no anomaly occurred on batteries or solar arrays.

4.4 TELEMETRY COMMAND AND RANGING

TCR subsystem behavior is as expected.

4.5 ON BOARD PROCESSORS

No patch loaded on board: no software modification in-flight.

Onboard processors behavior is as expected (no anomaly reported).

4.6 GROUND OPERATIONS

Ground operations were performed nominally, without any issues.

5 GENERAL

An important event occurred during the report period was the helix current spikes in the TWTA 5TE2-19. After recovery procedure applied, the TWTA 5TE2-19 was considered fully operational being used afterwards without any restriction.

- Date of the anomaly: August 21, 2018
- Effect on operations :
 - Nominal configuration restored
 - No impact on the mission nor on the satellite health

6 CONCLUSIONS

Based on the information presented and considering the last Health Report (attached) Visiona considers that the satellite is fully operational and with all parameters as expected since the launch.

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