PREPARATION AND OPERATIONS OF THE MISSION PERFORMANCE CENTRE (MPC) FOR THE COPERNICUS SENTINEL-3 MISSION

S3-A SLSTR Cyclic Performance Report

Cycle No. 008

Start date: 21/08/2016

End date: 17/09/2016



Ref.: S3MPC.RAL.PR.02-008 Issue: 1.0 Date: 22/09/2016 Contract: 4000111836/14/I-LG

Customer:	ESA	Document Ref.:	S3MPC.RAL.PR.02-008
Contract No.:	4000111836/14/I-LG	Date:	22/09/2016
		Issue:	1.0

Project:	PREPARATION AND OPERATIONS OF THE MISSION PERFORMANCE CENTRE (MPC) FOR THE COPERNICUS SENTINEL-3 MISSION		
Title:	S3-A SLSTR Cyclic Performance Report		
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Distribution:	ESA, EUMETSAT, S3MPC consortium		
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Filename	S3MPC.RAL.PR.02-008 - i1r0 - S	LSTR Cyclic Report 0	08

Disclaimer

The work performed in the frame of this contract is carried out with funding by the European Union. The views expressed herein can in no way be taken to reflect the official opinion of either the European Union or the European Space Agency.









Changes Log

Version	Date	Changes
1.0	22/09/2016	First Version

List of Changes

Version	Section	Answers to RID	Changes



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1 Instrument monitoring

1.1 Instrument temperatures

- Instrument temperatures (detectors, blackbody, baffles and OME) have been stable and consistent with previous operations.
- Infrared detector temperatures are stable but slightly higher than during commissioning phase (following the anomaly on 25 July), pending a decontamination cycle to be performed in the following weeks.
- The following figures show how the instrument temperatures during the current cycle fit into the trend from the mission so far. Data are sparse towards the end of the cycle due to delays in the availability of level-0 products on the MPC server.

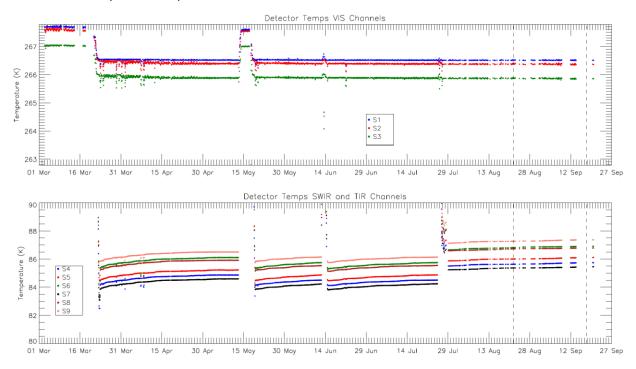
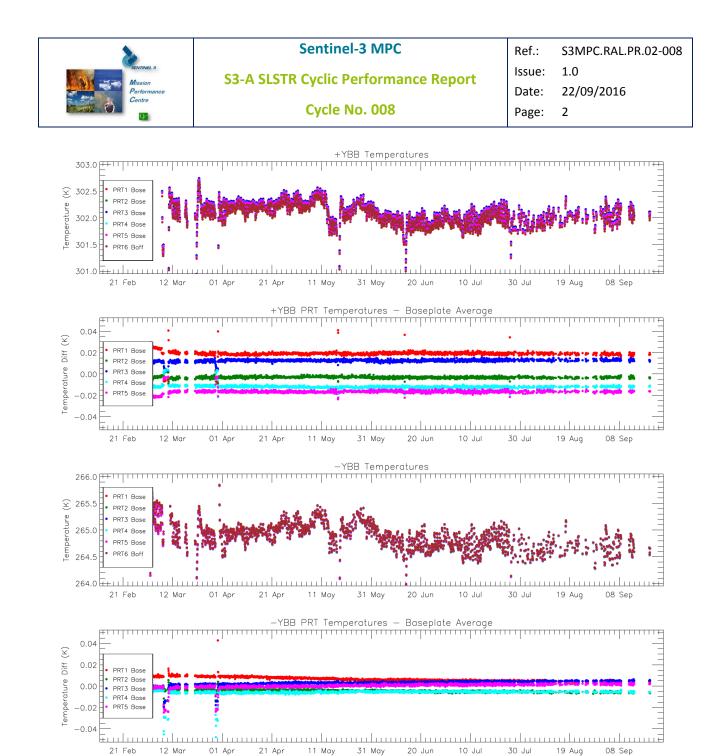


Figure 1: Detector temperatures for each channel from 1st March 2016. Discontinuities occur for the infrared channels where the FPA was heated for decontamination or following an anomaly. The current cycle is indicated by the vertical dashed lines.



31 May

10 Jul

08 Sep

Figure 2: Blackbody temperature and baseplate gradient trends.

01 Apr

21 Feb

12 Mar



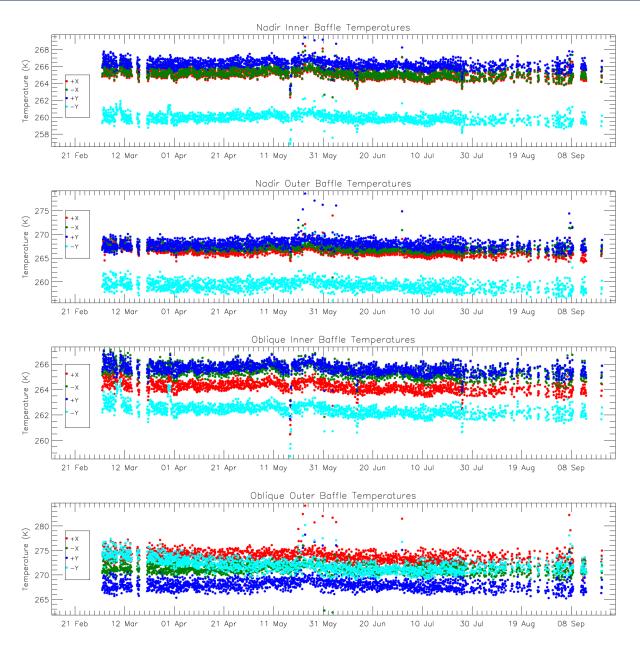


Figure 3: Baffle temperature trends.



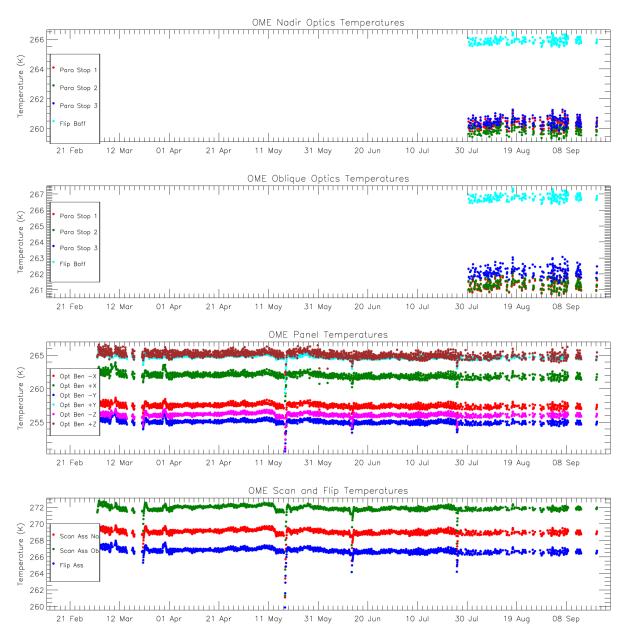


Figure 4: OME temperature trends showing the paraboloid stops and flip baffle (top two plots) and optical bench and scanner and flip assembly (lower two plots). The top two plots only show data starting from 30th July 2016.



1.2 Scanner performance

Scanner performance has been consistent with previous operations and within required limits.

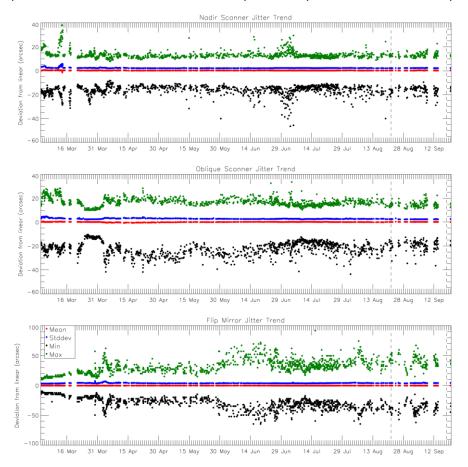


Figure 5: Scanner and flip jitter, showing mean, stddev and max/min position compared to the expected one for the nadir view. The current cycle is indicated by vertical dashed lines.

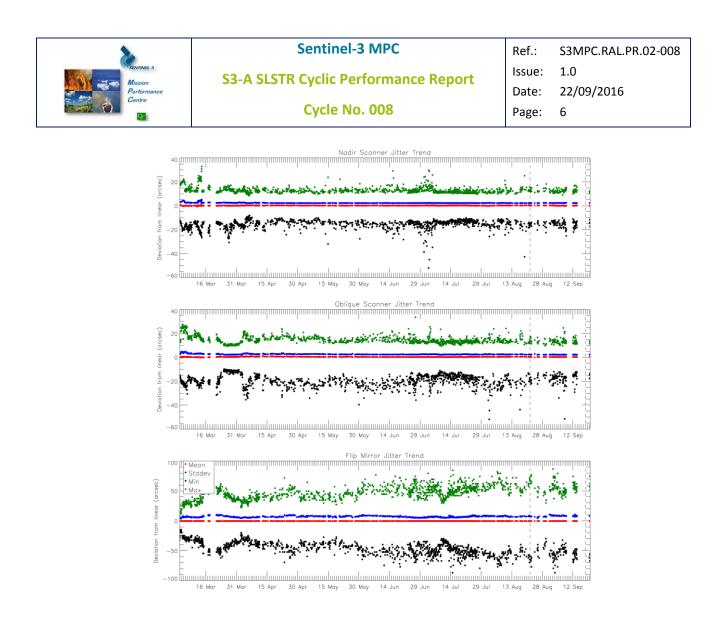


Figure 6: Scanner and flip jitter, showing mean, stddev and max/min position compared to the expected one for the oblique view. The current cycle is indicated by vertical dashed lines.

1.3 Detector noise levels

1.3.1 VIS and SWIR channel signal-to-noise

The VIS and SWIR channel signal-to-noise is stable and consistent with previous operations.



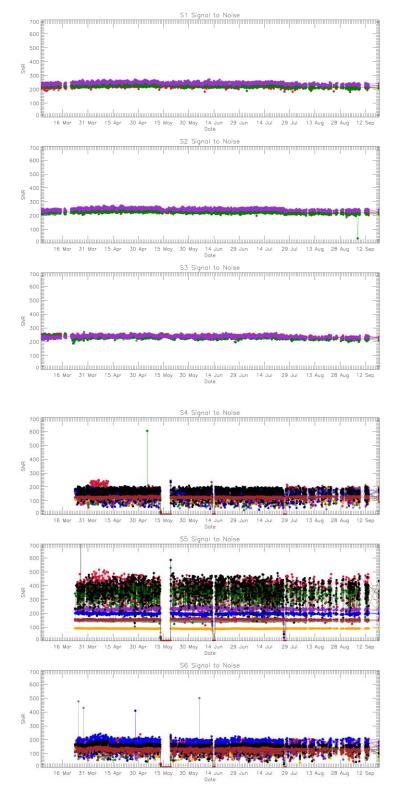


Figure 7: VIS and SWIR channel signal-to-noise. Different colours indicate different detectors.



1.3.2 TIR channel NEDT

The thermal channel NEDT values are consistent with previous operations and within the requirements.

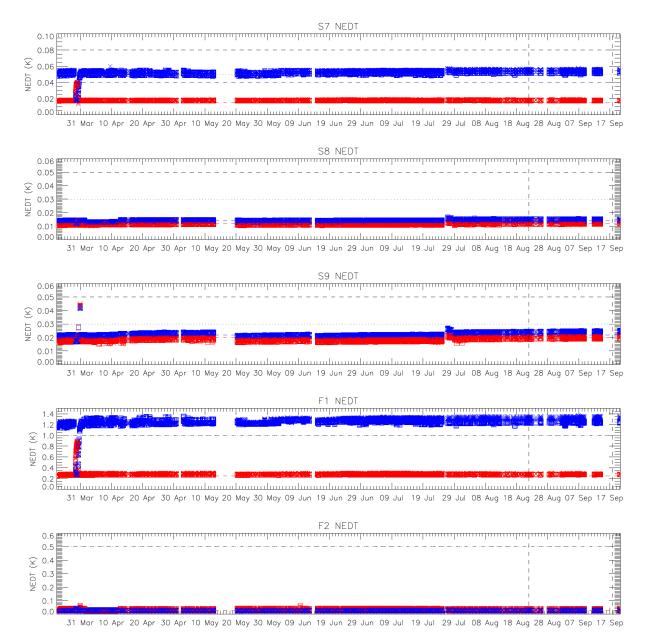


Figure 8: NEDT trend for the thermal channels. Blue points were calculated from the cold blackbody signal and red points from the hot blackbody. Horizontal lines indicate the requirement (dashed) and goal (dotted) as well as the measured values on ground (red and blue dashed). The current cycle is indicated by the vertical dashed lines.



1.4 Calibration factors

1.4.1 VIS and SWIR VISCAL signal response

Signals from the VISCAL source for the VIS channels show oscillations due to the build up of ice on the optical path within the FPA. A decontamination will be performed in the following cycle.

The signal level in the current cycle is consistent after a step in signal following the anomaly on 25 July.

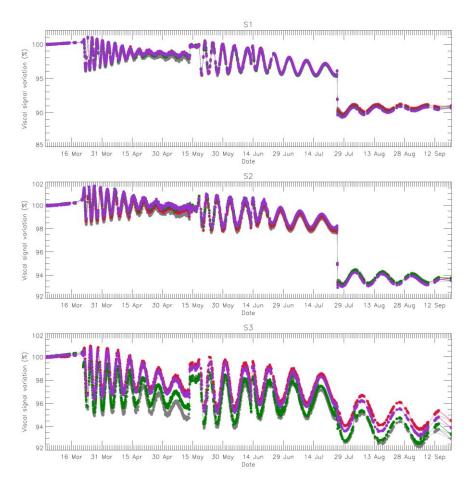


Figure 9: VISCAL signal trend for VIS channels (nadir view).

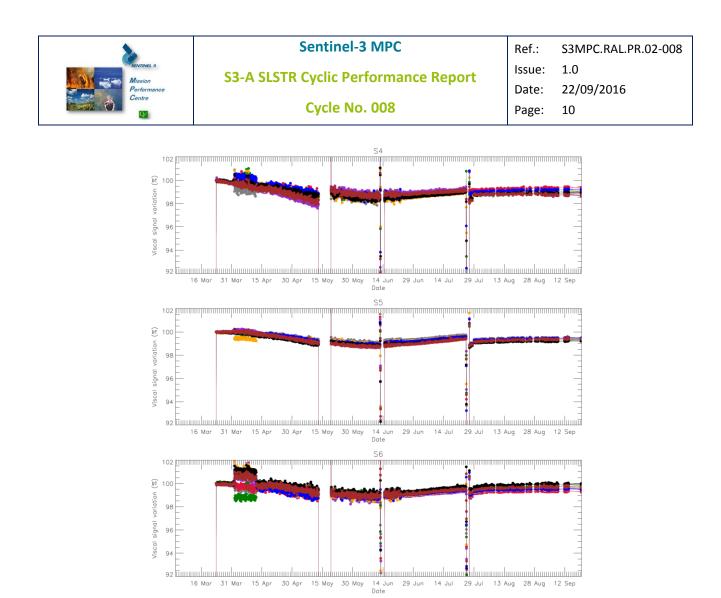


Figure 10: VISCAL signal trend for SWIR channels (nadir view).



2 Events

SLSTR has been switched on and operating nominally during the cycle, with SUE scanning and autonomous switching between day and night modes.



3 Appendix A

Other reports related to the Optical mission are:

S3-A OLCI Cyclic Performance Report, Cycle No. 008 (ref. S3MPC.ACR.PR.01-008)

All Cyclic Performance Reports are available on MPC pages in Sentinel Online website, at: https://sentinel.esa.int

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