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## S3 Product Notice – SLSTR

Mission	S3-A
Sensor	SLSTR
Product	<ul style="list-style-type: none"> <li>Level 1B: SL_1_RBT at NRT and NTC</li> </ul>
Product Notice ID	S3A.PN-SLSTR-L1.03
Issue/Rev Date	05/07/2017
Version	1.0
Preparation	This Product Notice was prepared by the S3 Mission Performance Centre and by ESA and EUMETSAT experts
Approval	Joint ESA-EUM Mission Management

### Summary

This Product Notice addresses the latest Sentinel-3 SLSTR Level-1B processing baseline deployed on 05 July 2017. It is applicable to all timeliness: Near Real Time (NRT) and Non-Time Critical (NTC).

The Notice describes the Level-1B current status, the processing baseline, the product quality and known limitations.



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### Processing Baseline

<b>Processing Baseline</b>	<ul style="list-style-type: none"> <li>IPF Processing Baseline: 2.17</li> </ul>
<b>IPFs version</b>	<ul style="list-style-type: none"> <li>SL_1 IPF version: 06.14</li> <li>PUG version: 3.29</li> </ul>

### Current Operational Processing Baseline

IPF	IPF Version	In operation since (creation date)
SL1	06.14	<p><b>Land Centres:</b></p> <p>NRT mode: 05/07/2017 13:10 UTC            NTC mode: 05/07/2017 13:10 UTC</p> <p><b>Marine Centre:</b></p> <p>NRT mode: 05/07/2017 13:10 UTC            NTC mode: 05/07/2017 13:10 UTC</p>
PUG	03.29	<p><b>Land Centres:</b></p> <p>NRT mode: 05/07/2017 13:10 UTC            NTC mode: 05/07/2017 13:10 UTC</p> <p><b>Marine Centre:</b></p> <p>NRT mode: 05/07/2017 13:10 UTC            NTC mode: 05/07/2017 13:10 UTC</p>



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## Status of the Processing Baseline

The current processing baseline for Sentinel-3A SLSTR Level-1B products is v2.17. The baseline was deployed in the Land and Marine processing centres on 05/07/2017.

The quality status of the baseline products is as follows:

### Geometric Calibration

- SLSTR nadir and oblique view geolocation accuracy meet the mission requirements (0.5 pixel as per S3 MRTD, 2011).

### TIR Radiometric Calibration

- SLSTR TIR radiometric accuracy meets the mission requirements (S3 MRTD, 2011).

### VIS/SWIR Radiometric Calibration Information

- Channels S1-S3 are in line with the corresponding OLCI and AATSR channels and meet the mission requirements (S3 MRTD, 2011). The radiometric calibration for S4 to S6 is not fully nominal.

### Basic cloud screening

- Summary\_cloud

The summary cloud bit is set if any one of the following cloud tests detects cloud:

- Gross Cloud test
- Thin cirrus test
- Medium high test
- Fog/low stratus test
- 11um Spatial coherence test
- 11/12 view difference test
- 3.7/11 view difference test
- Visible cloud test
- Threshold 1.375 cirrus test
- 1.6 large-scale histogram test
- 2.25 large-scale histogram test



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- 1.6 small-scale histogram test
- 2.25 small-scale histogram test

The results of the remaining cloud test (thermal histogram) is not taken into account in the cloud word, as of this release. The results of this test is however still available in the individual cloud test bits in the cloud\_flags.

### Flags

- Radiance/BT out of range flags are nominal.
- Saturation flags (where the uncalibrated counts are out of their expected range) are nominal.
- Pointing flags are nominal.

## Known product quality limitations

Sentinel-3A SLSTR Level-1B processing baseline v2.17 has the following known limitations:

### Geometric Calibration Model

- SLSTR oblique view geolocation and co-registration to the nadir view has been improved, currently estimated (using robust statistics) at  $0.2 \pm 0.2$  (rms: 0.3) pixel across-track and approximately  $0.1 \pm 0.2$  (rms: 0.2) in the along-track. The nadir view geolocation is currently estimated at approximately  $0 \pm 0.1$  (rms: 0.1) pixel along-track and  $-0.4 \pm 0.1$  (rms: 0.4) pixel across-track. Further improvement both in nadir and oblique view is expected in the next release.

### VIS/SWIR Radiometric Calibration Information

- Analysis performed by the MPC shows that the radiometric calibration of S1-S3 channels is within 3% of the corresponding channels on OLCI. Analysis for S5 and S6 show that there is a discrepancy of approximately 14% and 20% respectively.

### S7, S8, S9 co-registration

- Analysis performed by the MPC suggest that there is a sub-pixel mis-registration of S7 wrt S8 and S9 of  $\sim 250$  m.



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### **Fire Channel Co-Registration**

- Inspection of SLSTR L1 products has shown a significant spatial offset of the 3.7  $\mu\text{m}$  F1 channel compared to the corresponding S7 channel. The cause of the mis-registration is known to be due to the specific detector geometry of F1. A solution is under investigation.

### **Low temperature limit of channel S8.**

- Currently the minimum brightness temperatures for channel S8 is  $\sim 205$  K. Although this meets the minimum brightness temperature requirement, it does mean that very cold scenes such as deep convective clouds or Antarctic Plateau will not be measured by this channel.

### **Differences between NRT and NTC products**

- Two issues have been identified:
  - Differences in measurement data between NRT and NTC products
  - Different numbers of rows between NRT and NTC products
- It is advised to use NRT timeliness until the issue is resolved

### **Basic Cloud Screening**

- Overall cloud screening (summary\_cloud) is still not nominal
- Under-flagging of fog-low stratus over ocean
- Over-flagging of fog-low stratus over land
- Over-flagging of 1.6 large-scale histogram test near the coastline
- The 2.25 large-scale histogram test can sometimes result in box-like patterns
- Different cloud masking criteria for sun glint and outside of sun glint area can cause artificial stripe in the summary cloud screening

### **Alignment of Tie-point grids and image grids**

- Due to continuity requirement, the first SLSTR tie point row has been defined over the ANX position. However, this leads to a misalignment between tie and image rows in the along-track direction. This misalignment can be evaluated by an arbitrary offset between the image grid and the tie point grid.



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### Products Availability

- Copernicus Open Access Hub (<https://scihub.copernicus.eu/>), NRT and NTC
- Copernicus Online Data Access (<https://coda.eumetsat.int/>), NRT and NTC
- EUMETCast (<https://eoportal.eumetsat.int/>), NRT
- EUMETSAT Data Centre (<https://eoportal.eumetsat.int/>), NRT and NTC
- FTP server address login: login password: password
- Other

Product	EUMETCast	ODA*	CODA**	EUMETSAT Data Centre
SLSTR L1B	-	NRT, NTC	NRT, NTC	NRT, NTC

\* ODA is available only for Copernicus Services and S3VT users

\*\* CODA is the pilot service Copernicus Online Data Access and is available to all users

### Any other useful information

- None

### User Support

- Questions about SLSTR products can be ask to the Sentinel-3 User Support desk at:  
[eosupport@copernicus.esa.int](mailto:eosupport@copernicus.esa.int)  
[ops@eumetsat.int](mailto:ops@eumetsat.int)

### References

- Product Data Format Specification – SLSTR Level 1 & 2 Instrument Products, Ref: S3IPF.PDS.002, Issue: 1.6, Date: 29/06/2015  
<https://sentinel.esa.int/web/sentinel/user-guides/sentinel-3-altimetry/document-library>



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### Static ADFs

- S3\_AX\_DEM\_AX\_20000101T000000\_20991231T235959\_20151214T120000\_\_\_\_\_MPC\_O\_AL\_001.SEN3
- S3\_AX\_LWM\_AX\_20000101T000000\_20991231T235959\_20151214T120000\_\_\_\_\_MPC\_O\_AL\_001.SEN3
- S3\_AX\_OOM\_AX\_20000101T000000\_20991231T235959\_20151214T120000\_\_\_\_\_MPC\_O\_AL\_001.SEN3
- S3\_AX\_TRM\_AX\_20000101T000000\_20991231T235959\_20151214T120000\_\_\_\_\_MPC\_O\_AL\_001.SEN3
- S3\_AX\_CLM\_AX\_20000101T000000\_20991231T235959\_20151214T120000\_\_\_\_\_MPC\_O\_AL\_001.SEN3
- S3A\_SL\_1\_ANC\_AX\_20160216T000000\_20991231T235959\_20170324T120000\_\_\_\_\_MPC\_O\_AL\_009.SEN3
- S3A\_SL\_1\_CLO\_AX\_20160216T000000\_20991231T235959\_20170609T120000\_\_\_\_\_MPC\_O\_AL\_005.SEN3
- S3A\_SL\_1\_GEC\_AX\_20160216T000000\_20991231T235959\_20170324T120000\_\_\_\_\_MPC\_O\_AL\_006.SEN3
- S3A\_SL\_1\_GEO\_AX\_20160216T000000\_20991231T235959\_20170201T120000\_\_\_\_\_MPC\_O\_AL\_006.SEN3
- S3A\_SL\_1\_NAS4AX\_20160216T000000\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_009.SEN3
- S3A\_SL\_1\_NAS5AX\_20160216T000000\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_009.SEN3
- S3A\_SL\_1\_NAS6AX\_20160216T000000\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_009.SEN3
- S3A\_SL\_1\_NBS4AX\_20160216T000000\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_009.SEN3
- S3A\_SL\_1\_NBS5AX\_20160216T000000\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_009.SEN3
- S3A\_SL\_1\_NBS6AX\_20160216T000000\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_009.SEN3
- S3A\_SL\_1\_N\_F1AX\_20160216T000000\_20991231T235959\_20170324T120000\_\_\_\_\_MPC\_O\_AL\_006.SEN3
- S3A\_SL\_1\_N\_F2AX\_20160216T000000\_20991231T235959\_20170324T120000\_\_\_\_\_MPC\_O\_AL\_006.SEN3
- S3A\_SL\_1\_N\_S1AX\_20160216T000000\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_008.SEN3
- S3A\_SL\_1\_N\_S2AX\_20160216T000000\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_008.SEN3
- S3A\_SL\_1\_N\_S3AX\_20160216T000000\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_008.SEN3
- S3A\_SL\_1\_N\_S7AX\_20160216T000000\_20991231T235959\_20170324T120000\_\_\_\_\_MPC\_O\_AL\_006.SEN3
- S3A\_SL\_1\_N\_S8AX\_20160216T000000\_20991231T235959\_20170324T120000\_\_\_\_\_MPC\_O\_AL\_006.SEN3
- S3A\_SL\_1\_N\_S9AX\_20160216T000000\_20991231T235959\_20170324T120000\_\_\_\_\_MPC\_O\_AL\_006.SEN3
- S3A\_SL\_1\_OAS4AX\_20160418T094050\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_010.SEN3
- S3A\_SL\_1\_OAS5AX\_20160418T094050\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_010.SEN3
- S3A\_SL\_1\_OAS6AX\_20160418T094050\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_010.SEN3
- S3A\_SL\_1\_OBS4AX\_20160418T094050\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_010.SEN3
- S3A\_SL\_1\_OBS5AX\_20160418T094050\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_010.SEN3
- S3A\_SL\_1\_OBS6AX\_20160418T094050\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_010.SEN3
- S3A\_SL\_1\_O\_F1AX\_20160216T000000\_20991231T235959\_20170324T120000\_\_\_\_\_MPC\_O\_AL\_006.SEN3
- S3A\_SL\_1\_O\_F2AX\_20160216T000000\_20991231T235959\_20170324T120000\_\_\_\_\_MPC\_O\_AL\_006.SEN3
- S3A\_SL\_1\_O\_S1AX\_20160418T094050\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_009.SEN3
- S3A\_SL\_1\_O\_S2AX\_20160418T094050\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_009.SEN3
- S3A\_SL\_1\_O\_S3AX\_20160418T094050\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_009.SEN3



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- S3A\_SL\_1\_O\_S7AX\_20160216T000000\_20991231T235959\_20170324T120000\_\_\_\_\_MPC\_O\_AL\_006.SEN3
- S3A\_SL\_1\_O\_S8AX\_20160216T000000\_20991231T235959\_20170324T120000\_\_\_\_\_MPC\_O\_AL\_006.SEN3
- S3A\_SL\_1\_O\_S9AX\_20160216T000000\_20991231T235959\_20170324T120000\_\_\_\_\_MPC\_O\_AL\_006.SEN3
- S3A\_SL\_1\_PCP\_AX\_20160216T000000\_20991231T235959\_20170609T120000\_\_\_\_\_MPC\_O\_AL\_009.SEN3
- S3A\_SL\_1\_VIC\_AX\_20160216T000000\_20991231T235959\_20161012T120000\_\_\_\_\_MPC\_O\_AL\_004.SEN3

***End of the Product Notice***