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Copernicus S3 Product Notice – Altimetry

Mission	S3	
Sensor	SRAL / MWR	
Product	LAND L2 NRT, STC and NTC	
Product Notice ID	S3A.PN-STM-L2L.08	
Issue/Rev Date	14-Feb-2019	20-Mar-2019
Version	1.1	
Preparation	This Product Notice was prepared by the S3 Mission Performance Centre and ESA and EUMETSAT experts	
Approval	ESA Mission Management	

Summary

This is a Product Notice (PN) for the Copernicus Sentinel-3A and Sentinel-3B Surface Topography Mission (STM) Level-2 Land products at Near Real Time (NRT), Short Time Critical (STC) and Non Time Critical (NTC) timeliness.

The Notice describes the STM current status, product quality and limitations, and product availability status.

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Processing Baseline		
	S3A	**S3B**
Processing Baseline	• Processing Baseline: 2.45	• Processing Baseline: 1.17
IPFs version	• SR_1 IPF version: 06.16 • MW_1 IPF version: 06.09 • SM_2 IPF version: 06.15	• SR_1 IPF version: 06.16 • MW_1 IPF version: 06.09 • SM_2 IPF version: 06.15

Current Operational Processing Baseline		
IPF	**IPF Version**	**In OPE since**
S3A SR1	06.16	**Land Centres:** NRT mode : 2019-02-14 STC mode : 2019-02-14 NTC mode : 2019-02-14
S3A MW1	06.09	**Land Centres:** NRT mode : 2019-02-14 STC mode : 2019-02-14 NTC mode : 2019-02-14
S3A SM2	06.15	**Land Centres:** NRT mode : 2019-02-14 STC mode : 2019-02-14 NTC mode : 2019-02-14
S3B SR1	06.16	**Land Centres:** NRT mode : 2019-02-14 STC mode : 2019-02-14 NTC mode : 2019-02-14
S3B MW1	06.08	**Land Centres:** NRT mode : 2019-02-14 STC mode : 2019-02-14 NTC mode : 2019-02-14
S3B SM2	06.15	**Land Centres:** NRT mode : 2019-02-14 STC mode : 2019-02-14 NTC mode : 2019-02-14

Status of the Processing Baseline

S3A

The current Processing Baseline (PB) for Copernicus Sentinel-3A STM products is reported above.

The quality status of the current baseline products is as follows:

- The expected performance of the ice data is not yet fully achieved in terms of coverage and quality but is acceptable considering the following:
  - The S3A SRAL tracking over the continental ice margins did improve from the 7th December 2017 with the upload of a new Zone Data Base (ZDB) that changes the SRAL mode acquisition over the Greenland and Antarctica ice margins.
  - The Level 2 algorithms have been tuned to improve data quality
- Improvements to the continental ice, sea-ice ground and inland processing have been done and further enhancements are foreseen in the near future.

The history of the Processing Baseline deployed in the Sentinel-3 processing centres for Sentinel-3A mission is summarised below (Sentinel-3B follows the same history, starting with SM2 06.14) and can be found in https://sentinel.esa.int/web/sentinel/technical-guides/sentinel-3-altimetry/processing-baseline

Installation Date	Processing Baseline	IPF Version	Centre
2017-02-28	2.10	SM2 06.06	Core Ground Station
			Land Centre
2017-04-12	2.12	SM2 06.07	Core Ground Station
			Land Centre
2017-12-13	2.24	SM2 06.10	Core Ground Station
			Land Centre
2018-02-12	2.27	SM2 06.12	Core Ground Station
			Land Centre
2018-04-04	2.33	SM2 06.14	Core Ground Station
			Land Centre
2019-02-14	2.45	SM2 06.15	Core Ground Station
			Land Centre

S3B

The current Processing Baseline for the Sentinel-3B products is 1.17. This processing baseline is the same used for the Sentinel-3A products (PB 2.45), with the exception of static auxiliary files (ADFs) that are specific to Sentinel-3B: these files are highlighted in red in the ADF section of this document. The deployment dates in the Land and Marine Centres are specified above.

The following status is a preliminary assessment of performances, which were made during the commissioning phase.

Installation Date	Processing Baseline	IPF Version	Centre
2018-04-24	1.02	SM2 06.14	Core Ground Station
			Land Centre
2018-12-06	1.13	SM2 06.14 S3B ADF update	Core Ground Station
			Land Centre
2019-02-14	1.17	SM2 06.15	Core Ground Station
			Land Centre

Known product quality limitations

Common to S3A and S3B

The Sentinel-3A and Sentinel-3B STM products have some known processing limitations, which are reported in the next pages.

Anomaly #1: High level of retracker failure in continental ice sheets (S3MPC-1014)

- Over the inland ice sheets of Antarctica and Greenland there are much higher levels of the ice sheet retracker failure than found in previous missions (i.e. CryoSat LRM or Envisat RA2) over sloping surfaces. The anomaly on the SAR ice margin retracker also impacts the slope correction, which is set to FillValue in a high number of occurrences.
- Improvement is observed since version 06.10 reducing the loss to 20% of the data set over Antarctica. Further tuning of the SRAL L1 processing is required to insure full consistency between L1 processing and L2 ice sheet retracker, so that the expected level of ice sheet retracker coverage is finally met. Meanwhile, users are advised to use the OCOG retracker to exploit a data set with the expected coverage over land ice (loss of only 2% of data).
- All versions up to and including 06.15 are impacted

Anomaly #3: Quantization of the distance to coast (S3MPC-1519)

- The distance to coast at 1 Hz and at 20 Hz exhibits some quantization. The effect is larger at 20 Hz for which the value is constant over several 20 Hz measurements.
- Fixed in version 06.15

Anomaly #4: Degraded quality of atmospheric attenuation over coastal areas (S3MPC-1934)

- The MWR atmospheric attenuation was improved over coastal zone except for some specific cases over coastal areas, for which the attenuation is negative (-0.3 dB). This anomaly affects only 0.25% of the ocean measurements and occurs when backscatter coefficient exceeds 18 dB.
- This anomaly was introduced in version 06.10 and all versions up to and including 06.15 are impacted

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Anomaly #5: GIM ionospheric to default value (S3MPC-2030)

- The GIM ionospheric correction is sometimes set to default values for portions of tracks that are close to midnight. Therefore, parameters related to the topography observations are impacted (sea_ice_ssha, int_ sea_ice_ssha).
- All versions up to and including 06.15 are impacted for STC and NTC products.
- Since IPF version 06.12, the impact is that sea_ice_ssha and int_sea_ice_ssha parameters are calculated without the GIM ionospheric correction.
- The reprocessed products with IPF 06.12 are not affected by this anomaly.

Anomaly #6: L2 sea ice freeboard (freeboard_20_ku) is predominantly negative (S3MPC-2244)

- The freeboard parameter exhibits a mean value centred around -30 cm which is not expected. It is mainly due to the retracker used for the diffuse echoes which is not optimal to properly retrack the double peak waveforms that are characteristics over floes.
- Fixed in version 06.15

Anomaly #7: Sea ice lead echoes incorrectly filtered by waveform quality check (S3MPC-2409, S3MPC-2411)

- The sea ice retracker exhibits a much higher level of failure compared to the other retrackers (ocean, OCOG and ice sheet retrackers), due to the use of a quality check applied on the waveforms. This results in the sea ice retracking not being applied to waveforms for observations that are associated to leads and sea ice, leads being the dominant population where the retracker is not activated.
- Fixed in version 06.15

Anomaly #9: Discrimination flag set to ocean over land (S3MPC-2412)

- The discrimination flag (surf_type_class_20_ku) which is designed for sea ice is set to ocean over land surfaces.
- Fixed in version 06.15

Anomaly #10: Wrong values of interpolated sea_ice_ssha over ocean (S3MPC-2413)

- Values of interpolated ssha for sea ice (int_ sea_ice_ssha) show stronger magnitude than the original sea_ice_ssha parameter, over transition zones between ocean and land areas.
- This anomaly is corrected in version 06.15. All versions up to and including 06.14 are impacted.

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Anomaly #11: Ice concentration set to zero over land (S3MPC-2417)

- Sea_ice_concentration_20_ku is set to zero percent over land but it does not affect the quality of the sea ice parameters using this parameter.
- Fixed in version 06.15

Anomaly #12: Ice2 PLRM retracker not defined over the ice shelves (S3MPC-2415)

- The parameters estimated by the Ice2 retracker on PLRM waveforms (range_ice_20_plrm_ku and sig0_ice_20_plrm_ku) are not defined over the ice shelves.
- All versions up to and including 06.15 are impacted.

Anomaly #14: Partial coverage for OCOG retracker in C-band (S3MPC-2365)

- The output of the OCOG retracker in C-band (range_ocog_20_c and sig0_ocog_20_c parameters) are very frequently set to fill values, whatever the surface.
- Fixed in version 06.15

Anomaly #15: Partial coverage for OCOG retracker in LRM mode (S3MPC-2564)

- The output of the OCOG retracker in Ku-band in LRM mode (range_ocog_20_ku and sig0_ocog_20_ku parameters) are very frequently set to fill values, whatever the surface.
- Fixed in version 06.15

Anomaly #16: Global attribute "pass_number" wrong information (S3MPC-3263)

- In the global attribute of the product, the first pass of a cycle is labeled as 771 instead of 1
- All versions up to and including 06.15 are impacted.

Anomaly #17: P-LRM Sea Surface Height is computed using SARM Sea State Bias (S3MPC-3284)

- The fields "ssha_01_plrm_ku" and "ssha_20_plrm_ku" are computed using a Sea State Bias derived from SARM processing.
- All versions up to and including 06.15 are impacted

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Anomaly #18: Degraded quality of SWH below 1 meter (S3MPC-3284)

- The analysis of SWH distribution shows an unusual high number of values, for low SWH, below 1 meter. Both SARM and P-LRM processing are concerned.
- All versions up to and including 06.15 are impacted

Anomaly #19: Degraded quality of SWH below 1 meter (S3MPC-2925 and S3MPC-2926)

- The comparison between Sentinel-3A and Sentinel-3B backscattered coefficients highlights a constant bias of 0.5 dB. The backscatter coefficients derived from all retrackers are impacted.
- Only the Sentinel-3B PB 1.02 is impacted.

Specific to S3A

There is no limitation that affect Sentinel-3A STM mission only.

Specific to S3B

The Sentinel-3B STM products have some known processing limitations, which are reported here below.

Anomaly #S3B-1: Track numbering exceeds maximum number during drifting phase (SIIIMPC-2825)

- During the drifting phase between 8 May and 6 June 1018, track numbering exceeds 770, which is the nominal track number for Sentinel-3 27 day repeat cycle.
- Affects S3B data during the drifting phase until reprocessing.

Anomaly #S3B-2: Degraded SRAL calibration quality for S3B between 6 June and 21 June 2018 (SIIIMPC-2823)

- Due to different parameterisation of SRAL commanding on board, SRAL Level 1 products acquired between 7 June and 21 June have been processed with old CAL1 data.
- The impact on the L1 and L2 data is negligible.
- Will not be solved until reprocessing is done.

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Products Availabilty

☒ Copernicus Open Access Hub (https://scihub.copernicus.eu/), NRT and NTC

☐ FTP server address login: login password: password

☐ Other

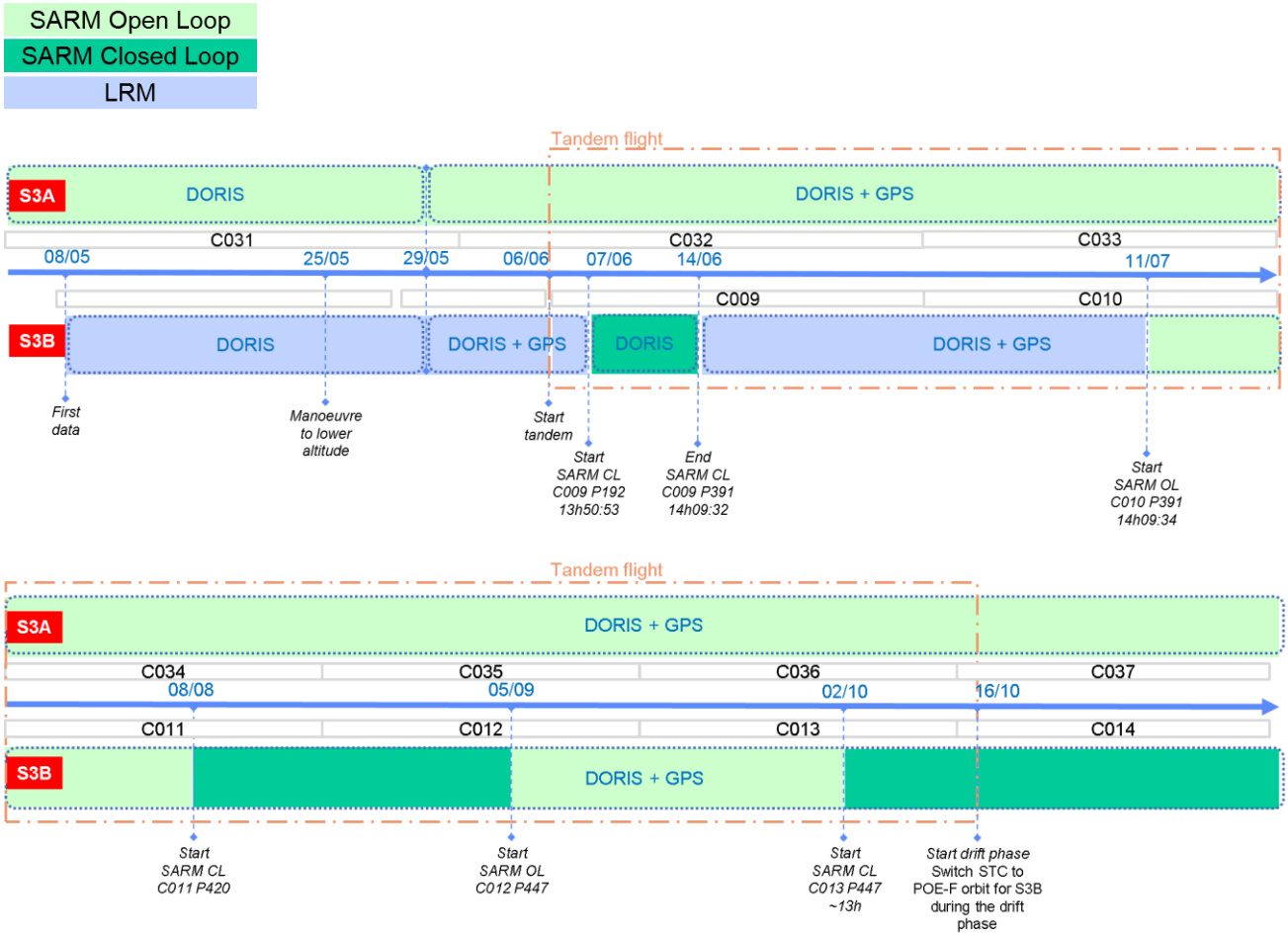
Any other useful information

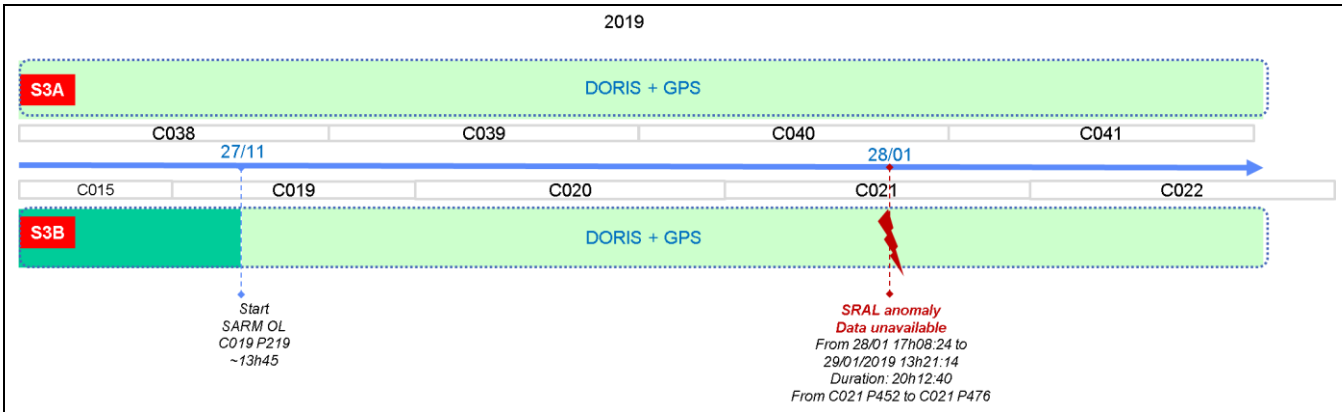
- Since version 06.10, the baseline collection number in the products filename changed from 2 to 3 to reflect the major evolutions introduced by this Processing Baseline. As an example, the filename for STC products will be labelled as O_ST_003.SEN3 instead of O_ST_002.SEN3.
- The brightness temperatures exhibit a difference of up to 1 K between ascending and descending tracks for the 23.8 GHz channel, both for Sentinel-3A and Sentinel-3B missions. Work is ongoing to understand the source of this difference.
- The composite wet tropospheric correction has not been calibrated yet and should not be used (comp_wet_tropo_cor_01_ku and comp_wet_tropo_cor_01_plrm_ku).
- During MWR calibrations over open-ocean, the brightness temperatures for both channels are not computed and set to default values in the product. As a consequence, 1 Hz parameters derived from the MWR are set to default values, except for the atmospheric attenuation. This affects the wet tropospheric correction, water vapour content and cloud liquid water content.
- The Sentinel-3A and Sentinel-3B waveform mispointing mean values are stronger than expected (respectively centered around -6.10^{-3} and -8.10^{-3} degrees²). This bias is mainly related to the values of the antenna aperture angle parameter. Note that the impact on the scientific parameters is negligible.
- The Ku band sigma0 in all modes (LRM, PLRM and SAR) has been biased to be aligned on Envisat mean value (10.8 dB without the atmospheric attenuation). A system bias of -18.96 dB was applied to SARM Ku band and of -2 dB to the LRM and PLRM Ku band.
- Note that the sigma0 derived from ice sheet, sea ice and OCOG retrackers exhibits a mean value close to 42 dB
- The C-band sigma0 in all modes (LRM and PLRM) has not been biased and exhibit a mean value around 11 dB which is lower by 4 dB compared to Jason-2.
- Since version 06.10, sigma0 is now corrected for atmospheric attenuation.
- The higher noise of the C band range inherent to the PLRM processing contributes to a high noise in the dual frequency ionospheric correction.

- The SAR Ku band SWH from SAMOSA retracker shows a smaller bias thanks to the implementation of SAMOSA 2.5 retracker. Nevertheless, an error correlated to SWH is still present when compared to PLRM observations and Jason-3 observations, ranging from -5 cm for low waves to 15 cm for the stronger waves.
- The SAR range values haven been improved thanks to the implementation of SAMOSA 2.5 retracker. We observe now a discrepancy reduced to 0.3%SWH for waves greater than 4 m, compared to PLRM and Jason-3 observations. Note that the SSB correction has not been tuned for Sentinel-3A and contains Jason-2 SSB solution.
- The rain flag is presently based on Envisat flag and it has not been tuned for Sentinel missions.
- The ocean/sea ice flag is presently based on Envisat flag and it has not been tuned for Sentinel missions.
- The ice-sheet snow facies type flag is presently based on Envisat flag and it has not been tuned for Sentinel missions.
- Note that the SRAL observations over inland waters are meaningful only over water bodies. The improved 3D meteorological corrections (mod_dry_tropo_cor_meas_altitude_01_ku and mod_wet_tropo_cor_meas_altitude_01_ku) should not be used to correct SRAL observations outside these targets.
- There was a change of version of the ECMWF model on 11 July. All the changes are described in the following note (ref. S3MPC.ECM.MEM.045, dated on 7-Jul-17).
- Since IPF L2 0.12 version, a new field was added in the Level 2 products to provide elevation over land ice derived from the OCOG retracker (elevation_ocog_20_ku).
- Orbit used in the processing switched to F standards, following recommendation from OSTST 2017. The switch is effective since 12 November for STC products and since Cycle 38 for NTC products (Upgrade from POE-E to POE-F orbit standard for Sentinel-3 mission, SALP-NT-M6-OP-17108-CN).
- For Sentinel-3B, SRAL was switched-on on 8 May. Until 6 June, the S3B satellite drifted in its orbit to end up 30 seconds ahead of the S3A satellite, at which point the tandem phase started.
- The geographic coverage of S3B mission was partial until 29 May 2018. Indeed, since the altimeter PRF was not changed during the drifting phase, there have been no SRAL acquisitions below 50ºS until 24 May 2018, then partial coverage between 24 and 29 May.
- S3B SRAL operated:
  - in LRM Closed Loop mode from 8 May till 6 June 2018;
  - in SAR Closed Loop mode from 7 June till 14 June 2018;
  - in LRM Closed Loop mode from 14 June till 11 July 2018;
  - in SAR Open Loop mode from 11 July till 8 August 2018;

- in SAR Closed Loop mode from 8 August till 5 September 2018;
- in SAR Open Loop mode since 5 September 2018 till 2 October 2018;
- in SAR Closed Loop mode since 2 October till 27 November 2018;
- in SAR Open Loop mode since 27 November 2018.

- Sentinel-3B satellite reached its final orbit on 23 November 2018





- Note that the strategy of cycle numbering during the S3B drifting phase is that the cycle number is incremented at each major satellite manoeuvre. This results in very short cycles from Cycle 2 to Cycle 8. Between Cycle 9 (start of the tandem phase) and cycle 13 (end of tandem phase), the repeat cycles have the nominal duration of 27 days. Then, cycles 14 to 17 are also shorter than 27 days during the second drifting phase needed to reach the final orbit.
- Since 28 May 2018, CNES MOE used in STC products have been improved by using Doris and GPS observations in the orbit solution. This improvement is present for both S3A and S3B.
- CNES MOE used in STC products were produced with Doris measurements only between 7 June and 14 June 2018. After 14 June, situation came back to nominal with orbit solution generated with both Doris and GPS measurements. This issue only affects S3B.
- As ROE orbits provide the best quality in NRT it shall be noted that these orbits are used between 70% and 99% for S3B mission until end of July 2018.
- From 8 May 2018 till 25 May 2018, MWR calibrations were performed over open-ocean as part of the MWR commissioning activities. As a consequence, the brightness temperatures for both channels are not computed and 1 Hz parameters derived from the MWR are set to default values in the product, except for the atmospheric attenuation. This affects the wet tropospheric correction, water vapour content and cloud liquid water content. Since 25 May 2018, the MWR calibration was changed so that data are no more lost over ocean.
- Note that the LRM data have additional biases due to the use of PLRM instrumental look up tables. This mainly affects the Ku band range parameter that is biased by 1 cm (range being too short than expected). For dual frequency ionospheric correction, PLRM look up tables induce an additional bias of 0.5 cm on the dual frequency ionospheric correction. This results in a total bias of 1.5 cm on ssha parameter, ssha being too high than expected.
- The absolute bias of Ku-band range in SARM is below 2 cm as for Sentinel-3A mission.
- The dual frequency ionospheric correction exhibits a bias of 1 cm, correction being too negative by 1 cm, compared to S3A correction or to the model GIM correction. This difference is related to the 7 cm bias observed between S3A and S3B C-band ranges.

- Due to different parametrization of SRAL commanding on board, SRAL Level 1 products acquired between 7 June and 21 June have been processed with old CAL1 data. The impact on the L1 and L2 data is negligible and will not impact science data.
- Due to different thermal conditions on SRAL sensor, there is a jump of 0.2 dB on the SRAL C-band CAL1 power values that occurred on 29 May. The impact on the L2 science data is a ramp of 0.2 dB on C-band sigma0 between 29 May and 7 June 2018, due to 10-day window averaging in the processing.
- A specific manoeuvre was done on 27 July for purpose of OLCI calibration. There is no impact on STM L2 Land products since the manoeuvre was performed over open ocean.
- Sentinel-3B SRAL instrument entered in Safe Hold Mode from the 28-01-2019 at 17:08 to the 29-01-2019 at 13:21.
- The MWR is set in Safe Hold Mode (SHM) over the US KREMS radar facility in the Kwajalein atoll (9°23'47" N – 167°28'50" E) in the Pacific. Until the 17th of January 2019 for safety reasons the MWR is switched in SHM about 300 km around this location (instead of 50 km before this date).
- The Sentinel-3A Open Loop Table Content (OLTC) will be updated (version 5.0) during cycle 42 to include more targets over inland waters. During this operation the altimeter will be switched to Close Loop mode.
- The Sentinel-3A SRAL acquisition mode mask will be changed. The same as Sentinel-3B will be used.

References

- Product Data Format Specification – SRAL-MWR Level 2 Land Products, Ref: S3IPF.PDS.003.2, Issue: 2.13, Date: 18/04/2018

  https://sentinel.esa.int/web/sentinel/user-guides/sentinel-3-altimetry/document-library
- L2 Land Product Notice, S3A.PN-STM-L2L.08, Issue:8.0, Date: 12/02/2019

  https://sentinel.esa.int/web/sentinel/technical-guides/sentinel-3-altimetry/processing-baseline

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Static ADFs updated

The following list is the complete list of static ADF used by the processor. Any change from the previous processing baseline is highlighted in red.

- S3__SR_2_CP00AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_CP06AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_CP12AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_CP18AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_EOT2AX_20160216T000000_20991231T235959_20170713T120000_____MPC_O_AL_002.SEN3
- S3__SR_2_FLT_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_GEO_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_LNEQAX_20160216T000000_20991231T235959_20170713T120000_____MPC_O_AL_002.SEN3
- S3__SR_2_LRC_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_LT2_AX_20160216T000000_20991231T235959_20170713T120000_____MPC_O_AL_002.SEN3
- S3__SR_2_LUTEAX_20160216T000000_20991231T235959_20170713T120000_____MPC_O_AL_002.SEN3
- S3__SR_2_LUTFAX_20160216T000000_20991231T235959_20170713T120000_____MPC_O_AL_002.SEN3
- S3__SR_2_LUTSAX_20160216T000000_20991231T235959_20181127T120000_____MPC_O_AL_003.SEN3
- S3__SR_2_MAG_AX_20160216T000000_20991231T235959_20170811T140000_____MPC_O_AL_002.SEN3
- S3__SR_2_MDT_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_MLM_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_MSMGAX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_MSS1AX_20160216T000000_20991231T235959_20170713T120000_____MPC_O_AL_002.SEN3
- S3__SR_2_MSS2AX_20160216T000000_20991231T235959_20170713T120000_____MPC_O_AL_002.SEN3
- S3__SR_2_ODLEAX_20160216T000000_20991231T235959_20170322T120000_____MPC_O_AL_002.SEN3
- S3__SR_2_RET_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_RRC_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_S1AMAX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_S1PHAX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_S2AMAX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_S2PHAX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SD01AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SD02AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SD03AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SD04AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3

- S3__SR_2_SD05AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SD06AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SD07AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SD08AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SD09AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SD10AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SD11AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SD12AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SET_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SFL_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SHD_AX_20160216T000000_20991231T235959_20181127T120000_____MPC_O_AL_002.SEN3
- S3__SR_2_SI01AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SI02AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SI03AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SI04AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SI05AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SI06AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SI07AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SI08AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SI09AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SI10AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SI11AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SI12AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SIGLAX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SIGSAX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SSM_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SST_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_SURFAX_20160216T000000_20991231T235959_20161010T120000_____MPC_O_AL_002.SEN3
- S3__SR_2_WNDLAX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_WNDSAX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_EOT1AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR_2_LT1_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__AX___CST_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3__SR___LSM_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3A_SR_2_CCT_AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3

- S3A_SR_2_IC01AX_20160216T000000_20991231T235959_20161010T120000_____MPC_O_AL_002.SEN3
- S3A_SR_2_IC02AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3A_SR_2_IC03AX_20160216T000000_20991231T235959_20161010T120000_____MPC_O_AL_002.SEN3
- S3A_SR_2_IC04AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3A_SR_2_IC05AX_20160216T000000_20991231T235959_20161010T120000_____MPC_O_AL_002.SEN3
- S3A_SR_2_IC06AX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3A_SR_2_IC07AX_20160216T000000_20991231T235959_20161010T120000_____MPC_O_AL_002.SEN3
- S3A_SR_2_IC08AX_20160216T000000_20991231T235959_20161010T120000_____MPC_O_AL_002.SEN3
- S3A_SR_2_IC09AX_20160216T000000_20991231T235959_20161010T120000_____MPC_O_AL_002.SEN3
- S3A_SR_2_IC10AX_20160216T000000_20991231T235959_20161010T120000_____MPC_O_AL_002.SEN3
- S3A_SR_2_SSBLAX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3A_SR_2_SSBSAX_20000101T000000_20991231T235959_20151214T120000_____MPC_O_AL_001.SEN3
- S3A_SR_2_CON_AX_20160216T000000_20991231T235959_20181127T120000_____MPC_O_AL_012.SEN3
- S3A_SR___CHDRAX_20160216T000000_20991231T235959_20181127T120000_____MPC_O_AL_004.SEN3
- S3A_SR___CHDNAX_20160216T000000_20991231T235959_20181127T120000_____MPC_O_AL_004.SEN3
- S3A_MW___CHDNAX_20160216T000000_20991231T235959_20170908T120000_____MPC_O_AL_004.SEN3
- S3A_MW___CHDRAX_20160216T000000_20991231T235959_20170908T120000_____MPC_O_AL_004.SEN3

- S3B_SR_2_CCT_AX_20180425T000000_20991231T235959_20180409T120000_____MPC_O_AL_001.SEN3
- S3B_SR_2_IC01AX_20180425T000000_20991231T235959_20180409T120000_____MPC_O_AL_001.SEN3
- S3B_SR_2_IC02AX_20180425T000000_20991231T235959_20180409T120000_____MPC_O_AL_001.SEN3
- S3B_SR_2_IC03AX_20180425T000000_20991231T235959_20180409T120000_____MPC_O_AL_001.SEN3
- S3B_SR_2_IC04AX_20180425T000000_20991231T235959_20180409T120000_____MPC_O_AL_001.SEN3
- S3B_SR_2_IC05AX_20180425T000000_20991231T235959_20180409T120000_____MPC_O_AL_001.SEN3
- S3B_SR_2_IC06AX_20180425T000000_20991231T235959_20180409T120000_____MPC_O_AL_001.SEN3
- S3B_SR_2_IC07AX_20180425T000000_20991231T235959_20180409T120000_____MPC_O_AL_001.SEN3
- S3B_SR_2_IC08AX_20180425T000000_20991231T235959_20180409T120000_____MPC_O_AL_001.SEN3
- S3B_SR_2_IC09AX_20180425T000000_20991231T235959_20180409T120000_____MPC_O_AL_001.SEN3
- S3B_SR_2_IC10AX_20180425T000000_20991231T235959_20180409T120000_____MPC_O_AL_001.SEN3
- S3B_SR_2_SSBLAX_20180425T000000_20991231T235959_20180409T120000_____MPC_O_AL_001.SEN3
- S3B_SR_2_SSBSAX_20180425T000000_20991231T235959_20180409T120000_____MPC_O_AL_001.SEN3
- S3B_SR_2_CON_AX_20180425T000000_20991231T235959_20181127T120000_____MPC_O_AL_003.SEN3
- S3B_SR___CHDNAX_20180425T000000_20991231T235959_20181127T120000_____MPC_O_AL_003.SEN3
- S3B_SR___CHDRAX_20180425T000000_20991231T235959_20181127T120000_____MPC_O_AL_003.SEN3

- S3B_MW___CHDNAX_20180425T000000_20991231T235959_20181116T120000_____MPC_O_AL_002.SEN3
- S3B_MW___CHDRAX_20180425T000000_20991231T235959_20181116T120000_____MPC_O_AL_002.SEN3

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