Title:

S-1B WV SLC annotated noise vectors were improperly calibrated with IPF 2.9x

Description:

Following the deployment of IPF2.90 on March 2018, the noise vectors annotated in WV SLC products were improperly calibrated.

The noise vectors have been properly recalibrated from the IPF3.10 and the circulation of new AUX_CAL on 26/06/2019.

For the impacted products, proper calibrated noise vectors can be recovered by multiplying the annotated values by the following calibration constant.

S1B WV1 = -39.30 dB -> 0.00011748975549395303

S1B WV2 = -37.44 dB -> 0.000180301774085957

Degradation types:

- ☐ DEGRADED_PRODUCT_RADIOMETRY
- ☐ DEGRADED_RADIOMETRIC_CALIBRATION
- ☐ DEGRADED_ORBIT_CONTROL
- ☐ COMPLETE_PRODUCT_DEGRADATION
- ☐ DEGRADED_PHASE
- ☐ DEGRADED_PRODUCT_GEOLOCATION
- ☐ DEGRADED_PLATFORM_POINTING
- ☐ DEGRADED_PERFORMANCE_INSTRUMENT_ANOMALY
- ☐ SLICE_PRODUCT_NON_CONCATENABLE
- ☒ OTHER

Degradation percentage[1]:

5 %

Impacted products:

Platform:	☐ S-1A	☒ S-1B	☐ S-1C			
Acquisition mode:	☐ EW	☐ IW	☐ SM	☒ WV	☐ RF	
Product type:	☐ RAW	☒ SLC	☐ GRDM	☐ GRDH	☐ GRDF	☐ OCN
Polarization:	☐ SH (Single pol. H)		☒ SV (Single pol. V)			
	☐ DH (Double pol. H)		☐ DV (Double pol. V)			

Processing facility: N/A

IPF version: 002.90, 002.91

Instrument Configuration ID (RDB): N/A

ADF files:

AUX_INS	N/A
AUX_CAL	N/A
AUX_PP1	N/A
AUX_PP2	N/A
AUX_SCS	N/A

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[1] Percentage of degradation of the data in the product (100% means that the product should be masked in the product catalogue)

Period of the issue:

	Start	Stop
Acquisition date	2018-03-13 03:34:38	2019-06-25 20:55:36
Generation date	2018-03-13 12:00:00	2019-06-26 10:00:00
Orbit	10007	16857
Datatake (hex)	012255	01FB85

Cause:

The invalid calibration of the annotated noise vectors for WV SLC products was introduced by IPF 2.9x with the internal radiometric normalization for SM and WV modes and with uncompliant noise calibration constant (knoise value) for WV products provided in the AUX_CAL

Status:

The issue has been corrected by the circulation of a new AUX_CAL on 26/06/2019 (synchronized with IPF 3.10 deployment).

S1B_AUX_CAL_V20160422T000000_G20190626T094625.SAFE for S-1A RDB#1 (current RDB at the moment of the change).

For the impacted products, proper calibrated noise vectors can be recovered by multiplying the annotated values by the following calibration constant.
S1B WV1 = -39.30 dB -> 0.00011748975549395303
S1B WV2 = -37.44 dB -> 0.000180301774085957

References:

- **MPC ref:** MPCS-2007, MPCS-2034