Title:

Products with residual RFI degradation acquired in June 2022

Description:

Since the deployment of the SAR Processor version IPF 3.51, a process of pre-screening and mitigation of RFI (Radio Frequency Interference) is in place.
However, this process does not allow a complete mitigation of all RFI impacting the quality of the Sentinel-1 products.
The purpose of this quality disclaimer is to provide a list of products impacted by such residual degradation for the period mentioned in the title above.
This list is provided at the end of this document (non-exhaustive list)
The degradation is mainly on the radiometry for the parts of the images affected by the residual RFI.

Degradation types:

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

Degradation percentage[1]:

1%

Only a subset of the products acquired in the period are affected.

Only parts of the affected products are impacted by the degradation.

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: N/A

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

[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	2022-06-01T00:00:00	2022-07-01T00:00:00
Generation date	2022-06-01T00:00:00	2022-07-02T00:00:00
Orbit	43462	43897
Datatake (hex)	053092	053D96

Cause:

Sentinel-1 is transmitting electromagnetic pulses in C-Band. This frequency band is shared with other emitters that can interfere with the signal received by the Sentinel-1 SAR, causing Radio Frequency Interference (RFI). Since IPF 3.51, the SAR processing implements a pre-screening and a mitigation of the RFI. However, this pre-screening/mitigation does not allow removing all the interferences in the SAR product.
Residual RFI can then be observed on SAR images.

Status:

The number of Sentinel-1 products for which the IPF detects and mitigate an RFI is monitored.
The products for which residual RFI are observable are monitored.
Usually, the RFI only impacts a portion of the surface covered by the product, and then the spatial coverage of the degradation is limited. An example of residual RFI for the period is presented below.

- A list of products impacted by residual RFI is provided below as a pattern of product names.
- This list cannot be exhaustive / other products in the period could be impacted as well.
- The patterns provide mainly information on acquisition mode and start/stop of acquisition time.
- When a product type (GRD for instance) then the other types are impacted as well (SLC, OCN)
- This list is provided considering the nominal processing flow and the generation date (table above) is set accordingly. No systematic reprocessing of those products is foreseen for now and even so, it cannot be guaranteed that a reprocessing could perform and efficient RFI mitigation for those specific products.

References:

- MPC ref: MPCS-2754

Example of residual RFI:

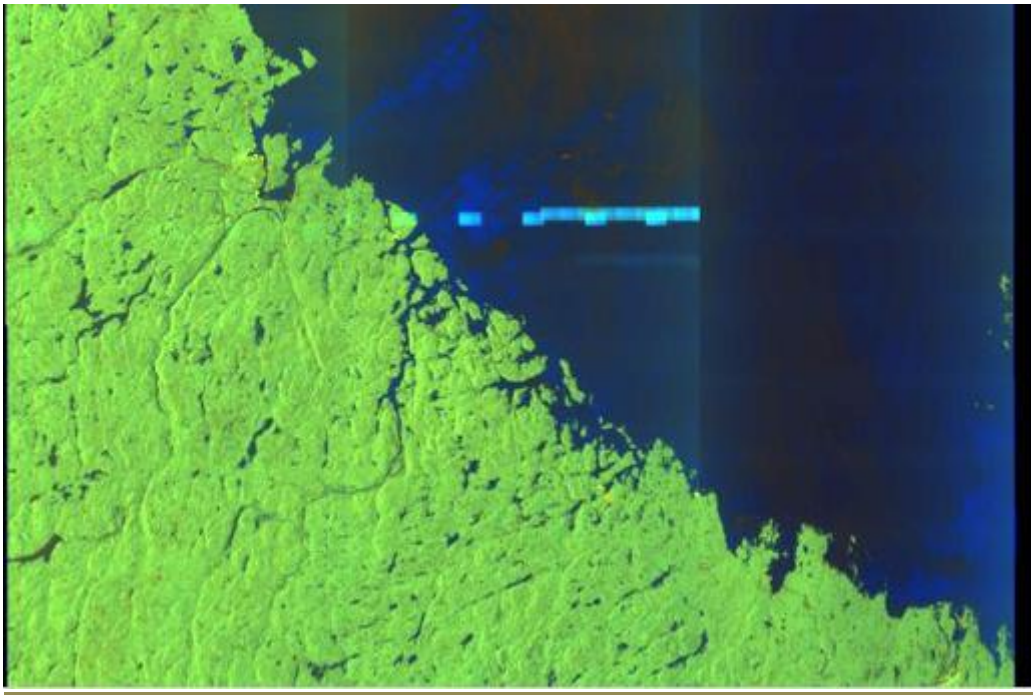


Figure 1: S1A_IW_GRDH_1ADV_20220603T162230_20220603T162255_043501_0531A9

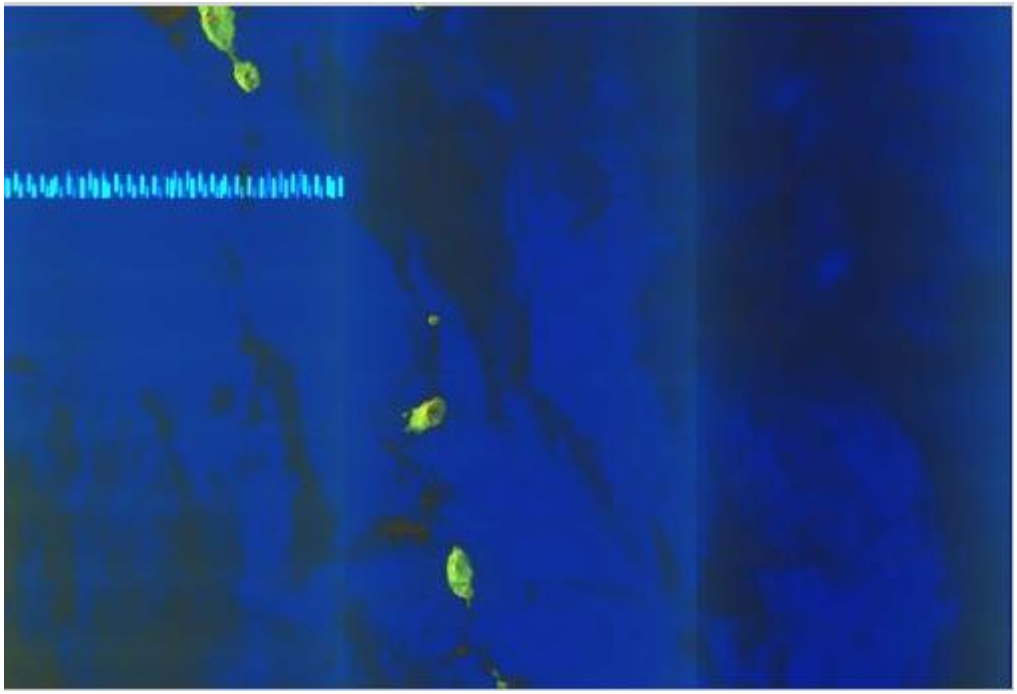


Figure 2: S1A_IW_GRDH_1ADV_20220627T195902_20220627T195927_043853_053C37

List of impacted products (product name templates)

S1A_IW_*SDV_20220603T162230_20220603T162255_043501_0531A9_*
S1A_IW_*SDV_20220603T224652_20220603T224719_043505_0531C7_*
S1A_IW_*SDV_20220604T023949_20220604T024014_043507_0531D7_*
S1A_IW_*SDV_20220604T024718_20220604T024745_043507_0531D8_*
S1A_IW_*SDV_20220604T041655_20220604T041720_043508_0531E0_*
S1A_IW_*SDV_20220604T134014_20220604T134039_043514_05320D_*
S1A_IW_*SDV_20220604T183951_20220604T184016_043517_053224_*
S1A_IW_*SDV_20220605T045126_20220605T045151_043523_053252_*
S1A_IW_*SDV_20220605T154810_20220605T154835_043529_05328A_*
S1A_IW_*SDV_20220605T223511_20220605T223536_043534_0532AC_*
S1A_IW_*SDV_20220606T145711_20220606T145736_043544_0532FD_*
S1A_IW_*SDV_20220606T150006_20220606T150031_043544_0532FD_*
S1A_IW_*SDV_20220607T140448_20220607T140513_043558_05336C_*
S1A_IW_*SDV_20220607T154119_20220607T154144_043559_053374_*
S1A_IW_*SDV_20220607T155014_20220607T155039_043559_053375_*
S1A_IW_*SDV_20220607T172638_20220607T172703_043560_05337D_*
S1A_IW_*SDV_20220608T034336_20220608T034401_043566_0533B1_*
S1A_IW_*SDV_20220608T051442_20220608T051507_043567_0533B9_*
S1A_IW_*SDV_20220608T052057_20220608T052122_043567_0533B9_*
S1A_IW_*SDV_20220608T144151_20220608T144216_043573_0533EB_*
S1A_IW_*SDV_20220608T162837_20220608T162902_043574_0533F0_*
S1A_IW_*SDV_20220608T163042_20220608T163107_043574_0533F0_*
S1A_IW_*SDV_20220608T215534_20220608T215559_043577_053408_*
S1A_IW_*SDV_20220609T055315_20220609T055340_043582_05341A_*
S1A_IW_*SDV_20220609T184319_20220609T184344_043590_053458_*
S1A_IW_*SDV_20220609T233520_20220609T233545_043593_05346F_*
S1A_IW_*SDV_20220610T045528_20220610T045553_043596_053486_*
S1A_IW_*SDV_20220610T175143_20220610T175208_043604_0534C1_*
S1A_IW_*SDV_20220610T195001_20220610T195026_043605_0534CB_*
S1A_IW_*SDV_20220611T132754_20220611T132819_043616_053516_*
S1A_IW_*SDV_20220611T150803_20220611T150832_043617_05351E_*
S1A_IW_*SDV_20220611T150832_20220611T150857_043617_05351E_*
S1A_IW_*SDV_20220611T150922_20220611T150947_043617_05351E_*
S1A_IW_*SDV_20220611T183214_20220611T183239_043619_05352D_*
S1A_IW_*SDV_20220612T221915_20220612T221940_043636_0535B1_*
S1A_IW_*SDV_20220613T035147_20220613T035212_043639_0535CC_*
S1A_IW_*SDV_20220613T144648_20220613T144713_043646_0535FB_*
S1A_IW_*SDV_20220613T145123_20220613T145148_043646_0535FB_*
S1A_IW_*SDV_20220613T164148_20220613T164204_043647_053602_*
S1A_IW_*SDV_20220614T135344_20220614T135409_043660_053665_*
S1A_IW_*SDV_20220614T171831_20220614T171856_043662_053678_*
S1A_IW_*SDV_20220614T184236_20220614T184301_043663_05367E_*
S1A_IW_*SDV_20220614T185856_20220614T185921_043663_053680_*
S1A_IW_*SDV_20220614T221021_20220614T221046_043665_053690_*
S1A_IW_*SDV_20220614T233419_20220614T233448_043665_053696_*
S1A_IW_*SDV_20220615T033541_20220615T033606_043668_0536A9_*
S1A_IW_*SDV_20220615T043931_20220615T044000_043669_0536AE_*
S1A_IW_*SDV_20220615T050540_20220615T050605_043669_0536B1_*
S1A_IW_*SDV_20220615T125927_20220615T125952_043674_0536DA_*
S1A_IW_*SDV_20220615T143701_20220615T143726_043675_0536E0_*
S1A_IW_*SDV_20220615T162050_20220615T162115_043676_0536E7_*
S1A_IW_*SDV_20220616T002917_20220616T002942_043681_05370B_*
S1A_IW_*SDV_20220616T003007_20220616T003032_043681_05370B_*
S1A_IW_*SDV_20220616T003032_20220616T003057_043681_05370B_*
S1A_IW_*SDV_20220616T024628_20220616T024653_043682_053712_*
S1A_IW_*SDV_20220616T055351_20220616T055416_043684_05371A_*
S1A_IW_*SDV_20220616T182718_20220616T182743_043692_053759_*
S1A_IW_*SDV_20220617T174341_20220617T174406_043706_0537C5_*
S1A_IW_*SDV_20220617T223511_20220617T223536_043709_0537E0_*
S1A_IW_*SDV_20220617T223536_20220617T223601_043709_0537E0_*
S1A_IW_*SDV_20220618T114436_20220618T114501_043717_053823_*
S1A_IW_*SDV_20220618T145442_20220618T145507_043719_053831_*

S1A_IW_*SDV_20220618T145557_20220618T145622_043719_053831_*
S1A_IW_*SDV_20220618T145622_20220618T145647_043719_053831_*
S1A_IW_*SDV_20220619T154120_20220619T154145_043734_0538A7_*
S1A_IW_*SDV_20220620T033901_20220620T033926_043741_0538E4_*
S1A_IW_*SDV_20220620T034336_20220620T034401_043741_0538E4_*
S1A_IW_*SDV_20220620T120147_20220620T120216_043746_053912_*
S1A_IW_*SDV_20220620T144011_20220620T144036_043748_05391F_*
S1A_IW_*SDV_20220620T175327_20220620T175352_043750_05392B_*
S1A_IW_*SDV_20220621T024742_20220621T024806_043755_05394B_*
S1A_IW_*SDV_20220621T184959_20220621T185024_043765_05399B_*
S1A_IW_*SDV_20220622T063855_20220622T063920_043772_0539D2_*
S1A_IW_*SDV_20220622T142352_20220622T142417_043777_0539F8_*
S1A_IW_*SDV_20220622T155442_20220622T155507_043777_0539FD_*
S1A_IW_*SDV_20220623T001416_20220623T001441_043783_053A22_*
S1A_IW_*SDV_20220623T053722_20220623T053747_043786_053A33_*
S1A_IW_*SDV_20220623T054132_20220623T054157_043786_053A33_*
S1A_IW_*SDV_20220623T150804_20220623T150833_043792_053A5C_*
S1A_IW_*SDV_20220623T182945_20220623T183010_043794_053A6B_*
S1A_IW_*SDV_20220623T183215_20220623T183240_043794_053A6B_*
S1A_IW_*SDV_20220623T203328_20220623T203402_043795_053A76_*
S1A_IW_*SDV_20220624T030720_20220624T030745_043799_053A8F_*
S1A_IW_*SDV_20220624T140823_20220624T140848_043806_053AC9_*
S1A_IW_*SDV_20220624T162438_20220624T162456_043807_053AD5_*
S1A_IW_*SDV_20220625T144620_20220625T144649_043821_053B41_*
S1A_IW_*SDV_20220625T163804_20220625T163829_043822_053B48_*
S1A_IW_*SDV_20220625T181311_20220625T181336_043823_053B51_*
S1A_IW_*SDV_20220625T201620_20220625T201649_043824_053B5B_*
S1A_IW_*SDV_20220625T233431_20220625T233500_043826_053B6A_*
S1A_IW_*SDV_20220626T060601_20220626T060626_043830_053B81_*
S1A_IW_*SDV_20220627T161436_20220627T161501_043851_053C25_*
S1A_IW_*SDV_20220627T175700_20220627T175725_043852_053C2A_*
S1A_IW_*SDV_20220627T195902_20220627T195927_043853_053C37_*
S1A_IW_*SDV_20220627T214849_20220627T214914_043854_053C3F_*
S1A_IW_*SDV_20220628T024719_20220628T024746_043857_053C54_*
S1A_IW_*SDV_20220628T204030_20220628T204055_043868_053CA8_*
S1A_IW_*SDV_20220629T141540_20220629T141605_043879_053CFA_*
S1A_IW_*SDV_20220629T174341_20220629T174406_043881_053D0B_*
S1A_IW_*SDV_20220630T022920_20220630T022945_043886_053D32_*
S1A_IW_*SDV_20220630T145442_20220630T145507_043894_053D6D_*