Title:

Issue on geolocation of Sentinel-1A SM SLC products with IPF v2.71: problem on annotated azimuth timing and corruption of the geolocation grid

Description:

This issue was introduced by IPF version 2.71, when the first attempt to fill gaps between consecutive slice products for TOPS (IW & EW) mode L1 products.

It had two impacts on Strip Map (SM) SLC products only:

- Firstly, a time shift in the annotated azimuth timing of SM SLC products
- Secondly, as a consequence of the first, a corruption of the geolocation grid annotated in the product, containing non-conformance values, for the first line.

Both of these issues lead to problems with the geolocation of the S1A SM SLC products of approximately 2m in azimuth (i.e. sub-pixel and less than the near-real time localisation requirement).

This impacted all the SM SLC products generated during the period given below. The list of impacted products is provided in appendix of this quality disclaimer.

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]:

100%

Impacted products:

Platform: ☒ S-1A ☐ S-1B

Acquisition mode: ☐ EW ☐ IW ☒ SM ☐ WV ☐ RF

Product type: ☐ RAW ☒ SLC ☐ GRD ☐ OCN

Resolution class: ☐ MR ☐ HR ☐ FR ☒ N/A

Polarization: ☒ SH (Single pol. H) ☒ SV (Single pol. V) ☒ DH (Double pol. H) ☒ DV (Double pol. V)

Processing facility: ☒ PAC1 / UPA ☒ PAC2 / DPA ☒ CGS1 / Matera ☒ CGS2 / Svalbard ☒ CGS3 / Maspalomas

IPF version: 2.71

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

Beginning of the issue:

Start acquisition date: 2016-05-11 21:02:59 UTC
Start generation date: 2016-05-11 22:51:37 UTC
Orbit: 11216
Datatake (hex): 010F47

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

End of the issue:

☐ not yet defined ☒ available

End acquisition date: 2016-08-22 21:35:50 UTC
End generation date: 2016-08-22 22:40:16 UTC
Orbit: 12718
Datatake (hex): 014011

Cause:

It is related to a first attempt to fix the gaps between consecutive slice products for TOPS mode (IW & EW), and it affected all SM SLC products generated by IPF 2.71.

Status:

Mitigation introduced by deployment of IPF 2.72 on 2016-08-23
The impacted products will be reprocessed with IPF 2.72 in order to fix them.

References:

- **MPC ref:** MPCS-1268, MPCS-1322
- **PDGS ref:** S1PDGS-46214
- **ARTS ref:** N/A

Appendix - List of impacted products

The following table provides the list of the corresponding corrupted products (ordered by alphabetical order)

S1A_S1_SLC__1SDH_20160612T223522_20160612T223550_011684_011E5C_0163
S1A_S1_SLC__1SDH_20160706T100820_20160706T100844_012026_01293C_B6F4
S1A_S1_SLC__1SDH_20160721T102847_20160721T102915_012245_01305E_5D35
S1A_S1_SLC__1SDH_20160730T100812_20160730T100836_012376_0134AF_4813
S1A_S1_SLC__1SDH_20160803T170807_20160803T170836_012439_0136C7_4AD7
S1A_S1_SLC__1SDV_20160131T024951_20160131T025010_009732_00E376_3F1B
S1A_S1_SLC__1SDV_20160530T024954_20160530T025013_011482_011803_9600
S1A_S1_SLC__1SDV_20160630T054241_20160630T054300_011936_012644_82A7
S1A_S1_SLC__1SDV_20160723T224334_20160723T224402_012282_01318D_D1C0
S1A_S1_SLC__1SDV_20160724T054242_20160724T054302_012286_0131B0_9F7E
S1A_S1_SLC__1SDV_20160802T102838_20160802T102906_012420_01362F_E6D1
S1A_S1_SLC__1SDV_20160810T024958_20160810T025017_012532_0139E2_6E25
S1A_S1_SLC__1SDV_20160814T013418_20160814T013432_012590_013BC2_FB06
S1A_S1_SLC__1SDV_20160819T080457_20160819T080516_012666_013E4E_F335
S1A_S1_SLC__1SSH_20160720T000844_20160720T000903_012224_012FB6_ABDC
S1A_S1_SLC__1SSV_20160128T234158_20160128T234227_009701_00E28E_17D8
S1A_S1_SLC__1SSV_20160525T114501_20160525T114521_011415_0115C7_2245
S1A_S1_SLC__1SSV_20160527T234201_20160527T234230_011451_011705_7FA0
S1A_S1_SLC__1SSV_20160807T234205_20160807T234235_012501_0138E4_EE27
S1A_S4_SLC__1SDH_20160609T110403_20160609T110431_011633_011CB4_8C80
S1A_S4_SLC__1SDH_20160609T234836_20160609T234900_011641_011CF7_D35A
S1A_S4_SLC__1SDH_20160703T234838_20160703T234902_011991_01280F_F3D9
S1A_S4_SLC__1SDH_20160715T234838_20160715T234902_012166_012DCC_EF95
S1A_S4_SLC__1SDH_20160718T100412_20160718T100440_012201_012EF6_6E29
S1A_S4_SLC__1SDH_20160727T234839_20160727T234903_012341_01337F_61EC
S1A_S4_SLC__1SDH_20160808T234839_20160808T234904_012516_013958_53C3
S1A_S4_SLC__1SDH_20160820T234840_20160820T234904_012691_013F21_EB30
S1A_S4_SLC__1SDV_20160526T014645_20160526T014710_011423_011612_1E46
S1A_S4_SLC__1SDV_20160607T014646_20160607T014710_011598_011B9F_403D
S1A_S4_SLC__1SDV_20160707T135139_20160707T135208_012043_0129CE_367F
S1A_S4_SLC__1SDV_20160730T100403_20160730T100431_012376_0134AE_1F4B
S1A_S4_SLC__1SDV_20160731T135130_20160731T135159_012393_01353F_3819
S1A_S4_SLC__1SDV_20160806T014650_20160806T014714_012473_0137F2_8A77
S1A_S4_SLC__1SDV_20160818T014650_20160818T014715_012648_013DB1_0969
S1A_S4_SLC__1SDV_20160819T094714_20160819T094738_012668_013E56_2F77
S1A_S4_SLC__1SSV_20160130T183551_20160130T183610_009727_00E34A_D4CF
S1A_S4_SLC__1SSV_20160511T210259_20160511T210328_011216_010F47_AA41
S1A_S4_SLC__1SSV_20160513T073039_20160513T073058_011237_010FF6_A7FA
S1A_S4_SLC__1SSV_20160520T062839_20160520T062859_011338_011350_FAF0
S1A_S4_SLC__1SSV_20160520T193611_20160520T193641_011346_01138E_21E0
S1A_S4_SLC__1SSV_20160529T183554_20160529T183614_011477_0117D0_6092
S1A_S4_SLC__1SSV_20160603T201421_20160603T201451_011551_011A2B_D547
S1A_S4_SLC__1SSV_20160604T210300_20160604T210329_011566_011AA1_BFD6

S1A_S4_SLC__1SSV_20160613T062841_20160613T062900_011688_011E81_0A56
S1A_S4_SLC__1SSV_20160613T193613_20160613T193642_011696_011EBA_9A2B
S1A_S4_SLC__1SSV_20160627T201423_20160627T201452_011901_01252E_496D
S1A_S4_SLC__1SSV_20160628T210301_20160628T210331_011916_0125A1_C96E
S1A_S4_SLC__1SSV_20160630T073041_20160630T073101_011937_01264E_2D1E
S1A_S4_SLC__1SSV_20160707T062842_20160707T062902_012038_0129AD_A5EF
S1A_S4_SLC__1SSV_20160707T193614_20160707T193644_012046_0129E7_F629
S1A_S4_SLC__1SSV_20160716T183557_20160716T183616_012177_012E25_661D
S1A_S4_SLC__1SSV_20160722T210303_20160722T210332_012266_013105_282C
S1A_S4_SLC__1SSV_20160724T073043_20160724T073102_012287_0131BA_BD76
S1A_S4_SLC__1SSV_20160728T183558_20160728T183617_012352_0133D9_2AD5
S1A_S4_SLC__1SSV_20160731T062844_20160731T062903_012388_01351C_4E5E
S1A_S4_SLC__1SSV_20160731T193616_20160731T193645_012396_013559_7156
S1A_S4_SLC__1SSV_20160817T073044_20160817T073103_012637_013D4D_C9AD
S1A_S4_SLC__1SSV_20160821T183559_20160821T183618_012702_013F84_54C6
S1A_S6_SLC__1SDH_20160611T002621_20160611T002645_011656_011D70_F9F2
S1A_S6_SLC__1SDH_20160705T002622_20160705T002646_012006_01288E_E2AF
S1A_S6_SLC__1SDH_20160708T004816_20160708T004845_012050_012A08_E50F
S1A_S6_SLC__1SDH_20160717T002623_20160717T002647_012181_012E4C_10C9
S1A_S6_SLC__1SDH_20160724T230640_20160724T230709_012296_01320B_FB8D
S1A_S6_SLC__1SDH_20160729T002624_20160729T002647_012356_0133FE_68AF
S1A_S6_SLC__1SDH_20160807T225252_20160807T225320_012500_0138DD_A364
S1A_S6_SLC__1SDH_20160810T002624_20160810T002648_012531_0139D5_F48C
S1A_S6_SLC__1SDH_20160817T230637_20160817T230706_012646_013DA0_D698
S1A_S6_SLC__1SDH_20160820T110406_20160820T110434_012683_013EDB_617A
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S1A_S6_SLC__1SDV_20160615T115445_20160615T115509_011721_011F86_33C7
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S1A_S6_SLC__1SDV_20160628T214329_20160628T214358_011916_0125A5_4656
S1A_S6_SLC__1SDV_20160709T115446_20160709T115510_012071_012ABC_3C5C
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S1A_S6_SLC__1SDV_20160721T115447_20160721T115511_012246_013065_1C82
S1A_S6_SLC__1SDV_20160722T214330_20160722T214359_012266_013109_2B36
S1A_S6_SLC__1SDV_20160802T115448_20160802T115511_012421_013637_B33D
S1A_S6_SLC__1SDV_20160803T214331_20160803T214400_012441_0136E4_5530
S1A_S6_SLC__1SDV_20160805T145251_20160805T145315_012466_0137B8_F6FD
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S1A_S6_SLC__1SDV_20160814T115448_20160814T115512_012596_013BF8_E177
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S1A_S6_SLC__1SDV_20160817T082322_20160817T082341_012637_013D52_7CAC
S1A_S6_SLC__1SDV_20160817T145252_20160817T145315_012641_013D72_EE0D
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S1A_S6_SLC__1SSV_20160520T195047_20160520T195105_011347_01138F_B825
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S1A_S6_SLC__1SSV_20160530T205430_20160530T205459_011493_011859_35DC
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S1A_S6_SLC__1SSV_20160601T055814_20160601T055843_011513_011908_173A
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S1A_S6_SLC__1SSV_20160707T195050_20160707T195108_012047_0129E8_8A80
S1A_S6_SLC__1SSV_20160717T205433_20160717T205502_012193_012EB1_9A77
S1A_S6_SLC__1SSV_20160719T055214_20160719T055243_012213_012F5E_0FC3
S1A_S6_SLC__1SSV_20160719T055817_20160719T055846_012213_012F5F_BC93
S1A_S6_SLC__1SSV_20160731T195051_20160731T195110_012397_01355A_7623
S1A_S6_SLC__1SSV_20160805T082821_20160805T082849_012463_013794_8F89
S1A_S6_SLC__1SSV_20160810T205434_20160810T205503_012543_013A3B_DF9B
S1A_S6_SLC__1SSV_20160812T055216_20160812T055245_012563_013AEE_2BCE
S1A_S6_SLC__1SSV_20160812T055818_20160812T055847_012563_013AEF_4D21