Status of SYN L2 Products

PROBA-V QWG
22 April 2020

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Disclaimer

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Current status of SYN/VGT-like products

Last QWG (October 2020) - SYN L2 IPF 2.66 /1.38 including :

- Modification of the VGT-S10 10-days period to define 3 “fixed” products per month (since 21/05/2020)

- Modification of the VGT-S like time period
  - For VGT-S10 : S3A_SY_2_V10____20200911T000000_20200920T235959 (since 21/07/2020)
  - For VGT-S1 : S3A_SY_2_VG1____20200924T000000_20200924T235959 (since 24/09/2020 for S3A and S3)

Current status of SYN/VGT-like products

15/04/2021 : Delivery of SYN L2 IPF 2.77 /1.55 including :

- SYN L2 and SYN VGS :
  - Issue in SYN_OOR_flag computation
  - Computation of NDVI
    - Correction of Surface/TOA NDVI
    - Consistency between B2, B3 and NDVI availbality
    - Modification of VG1 format

- SYN AOD
  - Cloud_fraction_oblique set to 0 in single view side

Correction of the NDVI in VGT-Like products

Detected issues :

1. NDVI values whereas B2 or B3 non available

- NDVI computed on the OLCI 300m grid
- B2, B3 and NDVI projected simultaneously using bicubic interpolation
- No check of B2 and B3 availability

2. TOA NDVI included in VGT-like product instead of Surface NDVI

- Confusion between TOA NDVI – required for composite Method – and Surface NDVI

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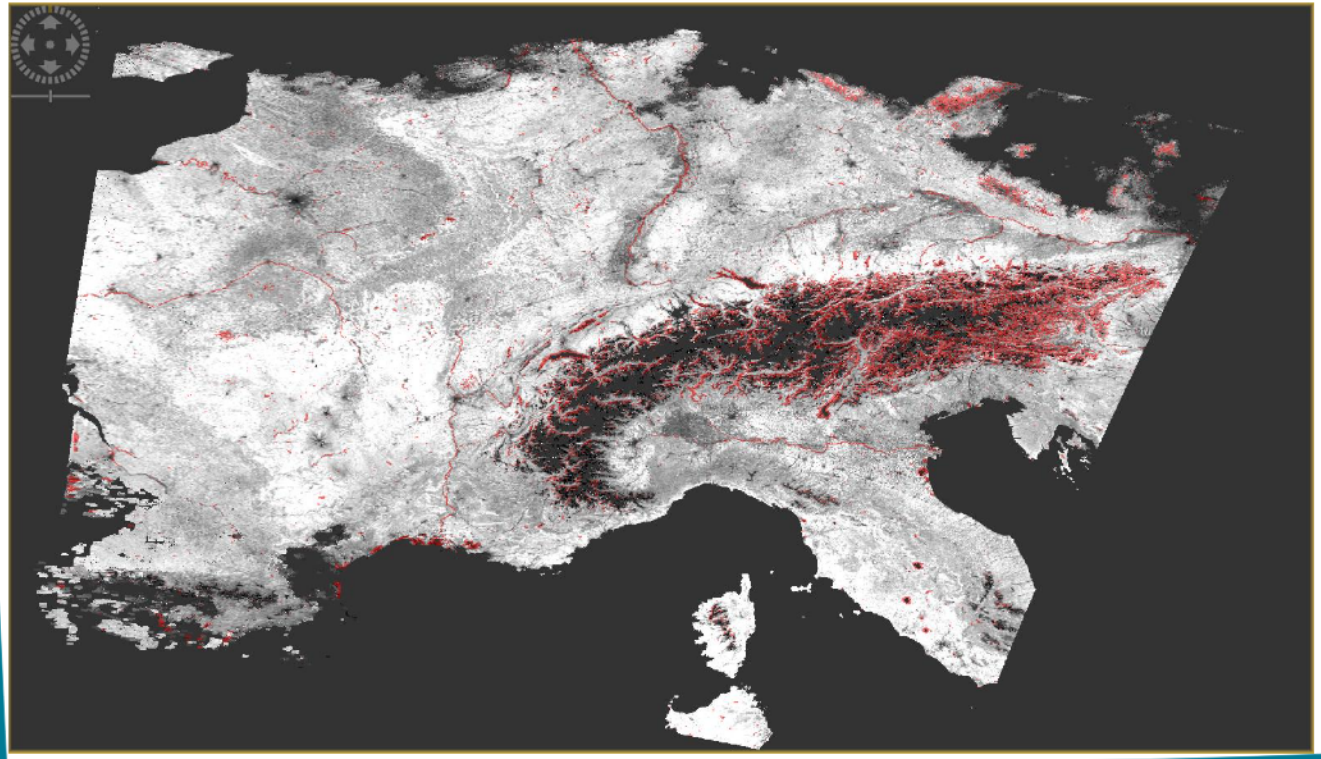


NDVI value whereas B2 or B3 = NaN

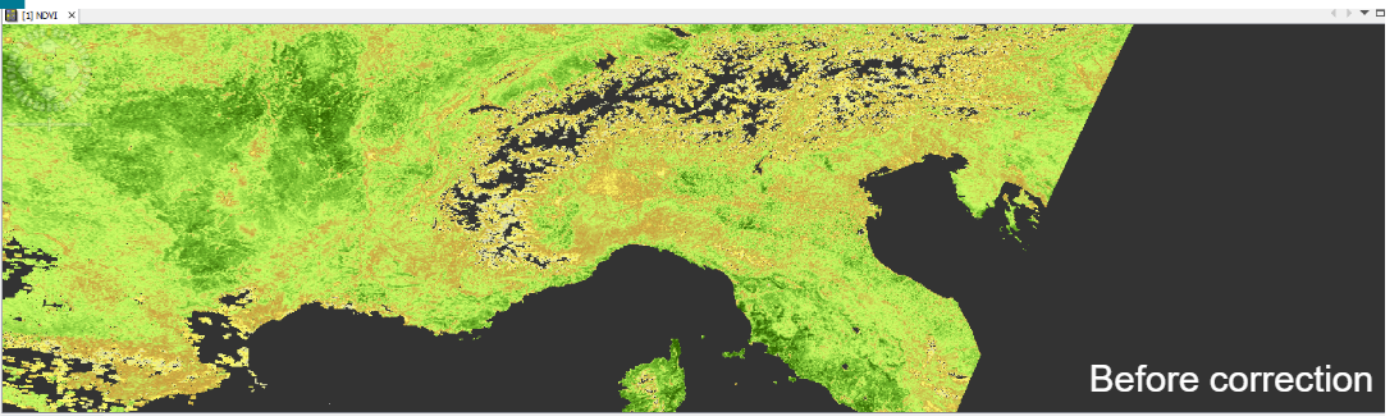
Correction of the NDVI in VGT-Like products

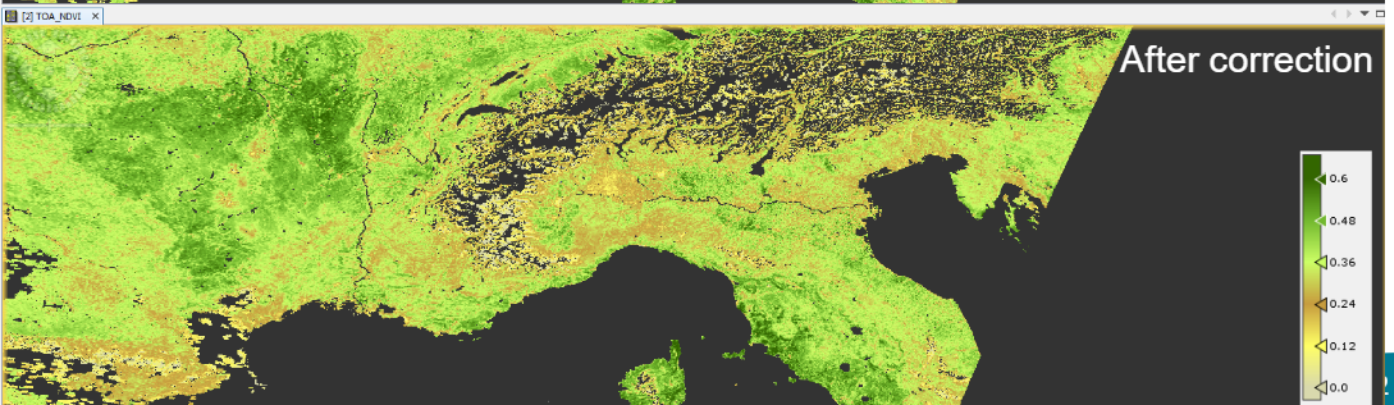
Correction :

1. NDVI values only if B2 or B3 are available

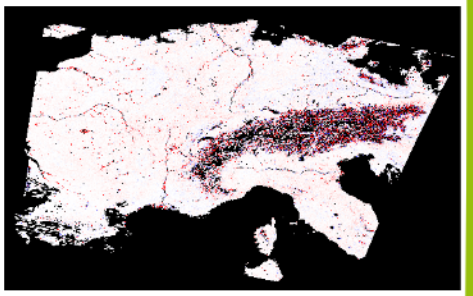
- Now NDVI computed on the Plate Carrée grid, once B2 and B3 have been projected
- Better representativity of the surface discontinuity
- Consistency between B2, B3 and NDVI

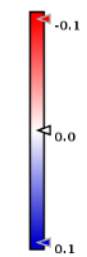
- No more NDVI value whereas B2 or B3 = NaN
- No difference in TOA NDVI values

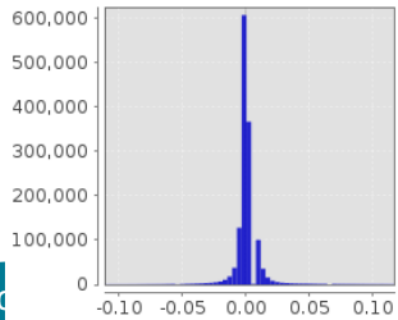




Difference [$NDVI_{after}$ – $NDVI_{before}$] : Visual aspect and histogram







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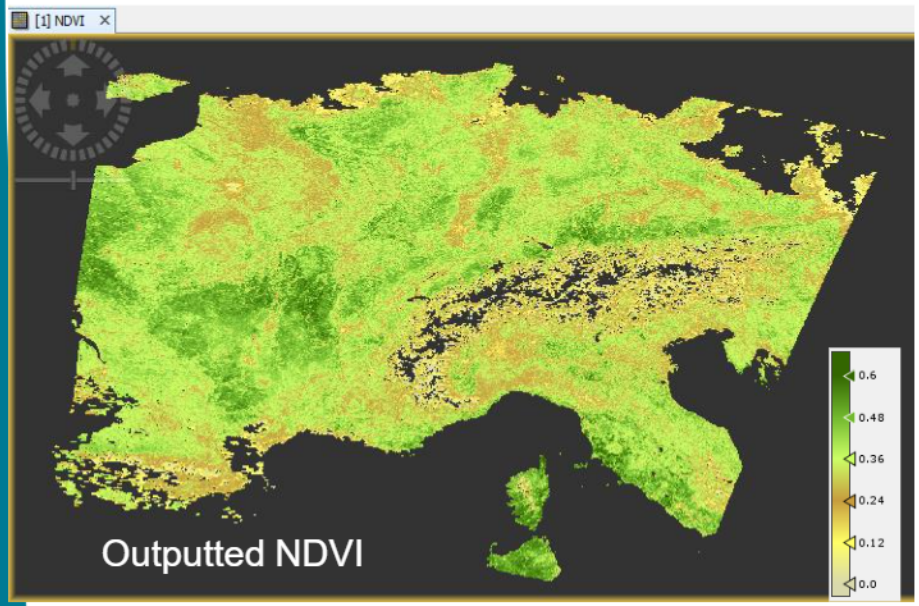
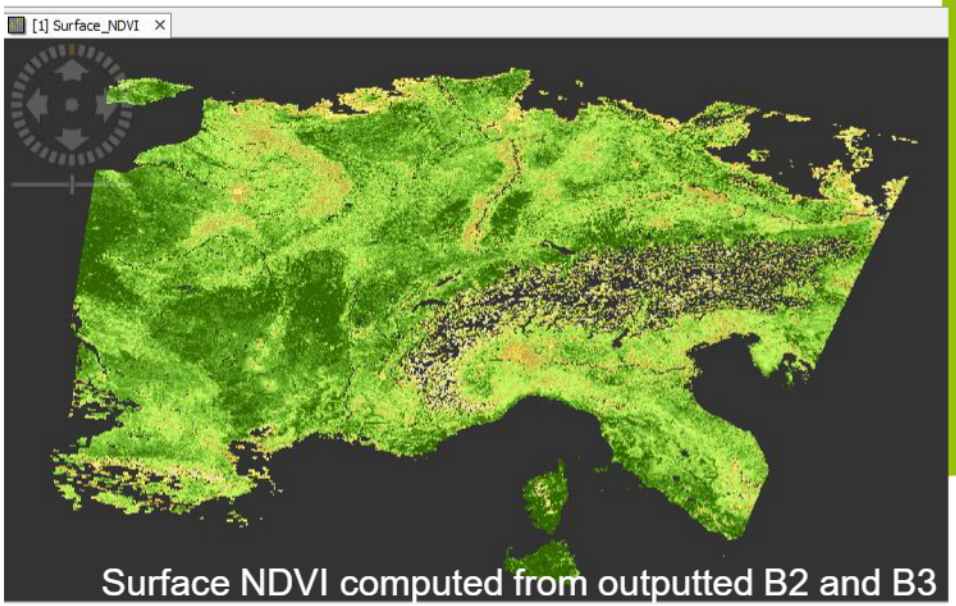
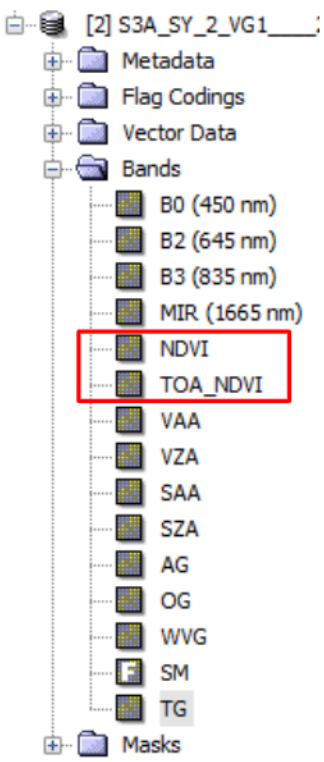


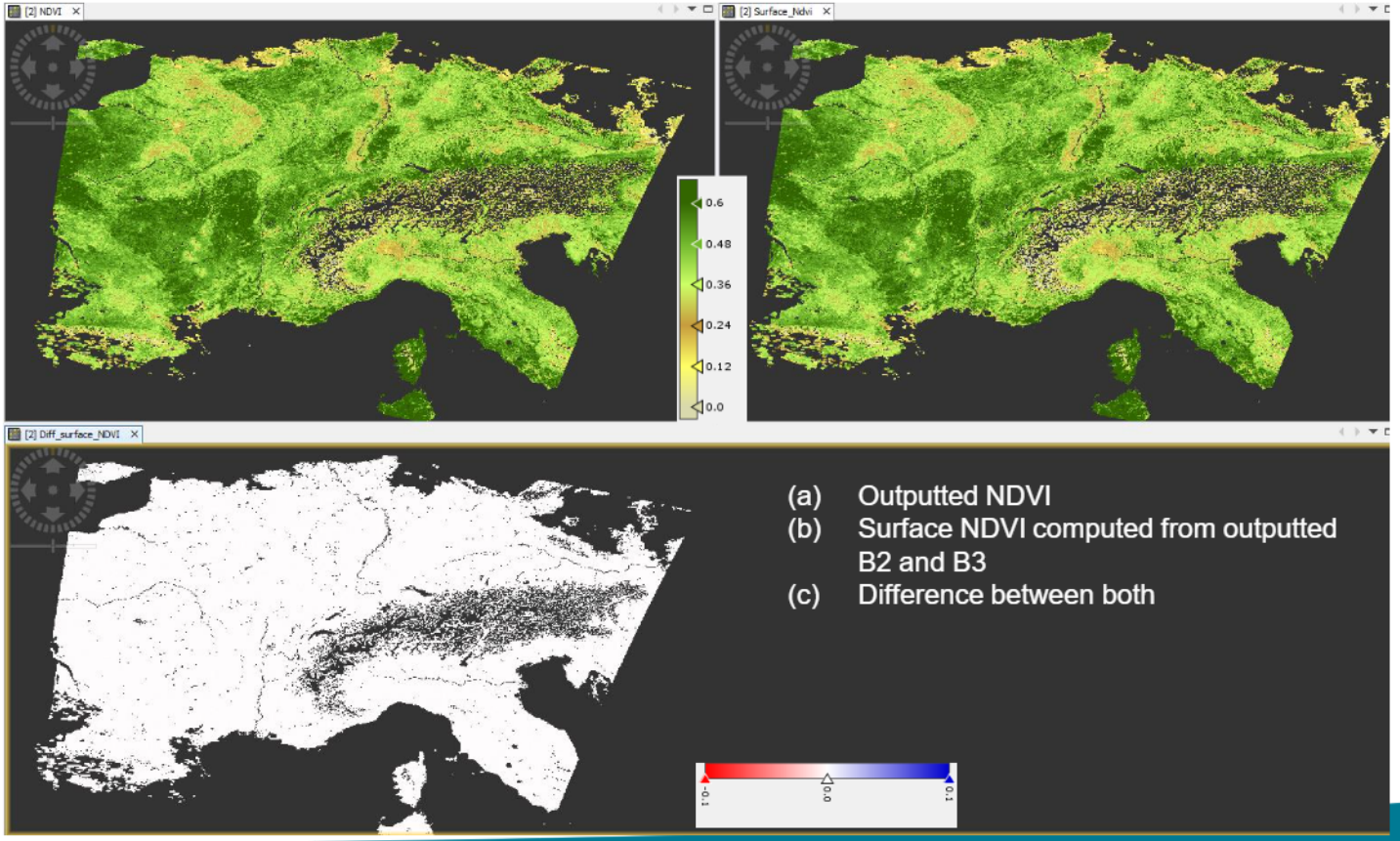


Correction of the NDVI in VGT-Like products

Detected issues :

1. NDVI values whereas B2 or B3 non available
2. TOA NDVI and Surface NDVI included in VG1-like product; Surface NDVI only in V10-like





Correction of the NDVI in VGT-Like products

Detected issues :

1. Issue in SYN_OOR_flag computation

- Some SYN L2 pixels flagged as out of range whereas all associated SDR were present and $\in[0,1]$
- **Cause :** Oa13, S4N and S4O has been discarded from aerosol retrieval but still considered in the atmospheric correction module.

  These flags were then flagged because of {SDR_Oa13 or SDR_S4N or SDR_S4O} Out of Range

- **Correction** : {SDR_Oa13 or SDR_S4N or SDR_S4O} no longer considered in OOR_flag computation

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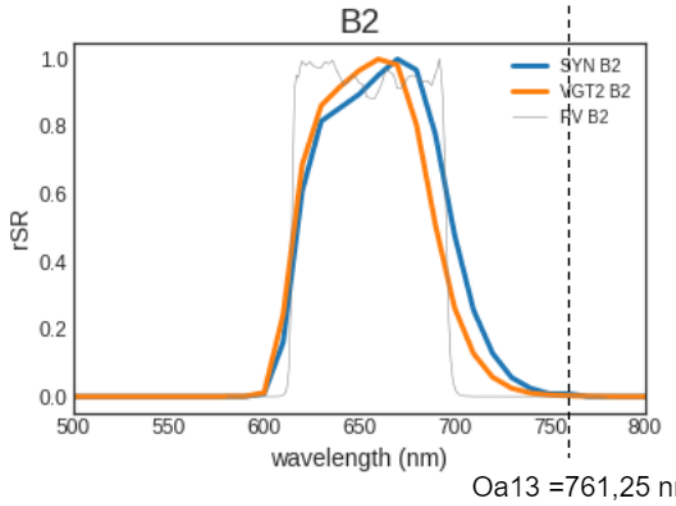
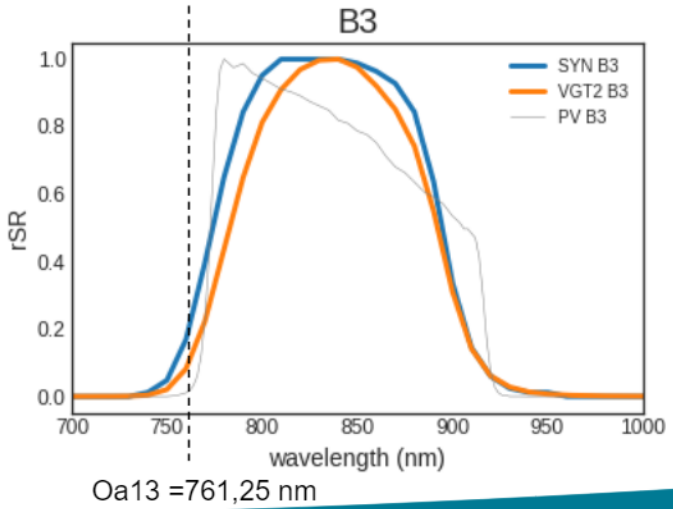
taken into account in the computation of B2 and B3
Should we keep it ?



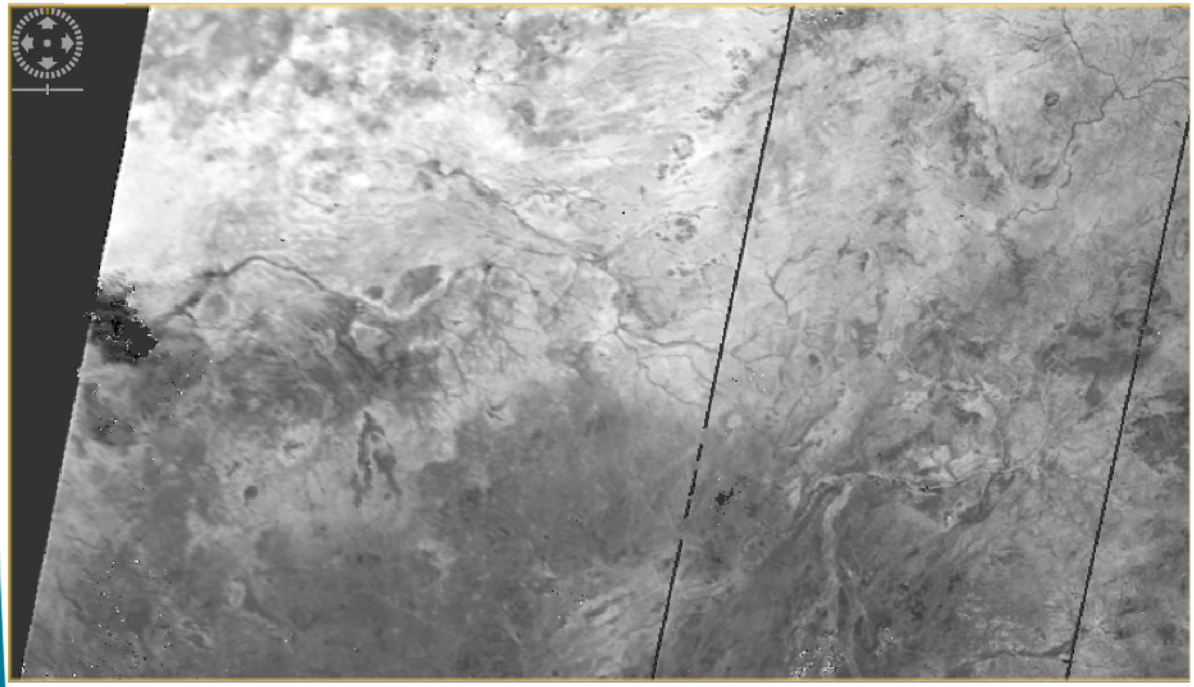
Oa13 =761,25 nm



Oa13 =761,25 nm

Issues raised previously :

- Along-track stripping on VGT-like products
  - ✓ Misregistration failed due to manœuvre
  - ✓ Recent improvement of the SLSTR geolocation during manœuvre
  - ✓ On-going check to see the impact on VGT



THANK YOU FOR YOUR ATTENTION