



Template product information package

<u>Product</u>	S10 (spectral reflectance and NDVI)
<u>Participant ID</u>	VITO

1. **General Information**

Syntheses products are :

- extracts from **ten day global syntheses**.
- available in **near real time**. (3 dyas after every decad)
- in **full resolution (1km)**.
- in plate carrée projection.
- available for **the whole window of Africa**.
- in the standard **VEGETATION product format**.

They are available in 2 versions:

- ALL: contains all the planes normally found in a S10, ie the spectral reflectances in B0, B2, B3 and MIR, and the NDVI
- NDVI: contains only the NDVI plane

2. **Application of the product**

The overall objectives of the VEGETATION instrument are to provide accurate measurements of basic characteristics of vegetation canopies on an operational basis, either for scientific studies involving both regional and global scales experiments over long time periods (for example development of models of the biosphere dynamics interacting with climate models), or for systems designed to monitor important vegetation resources, like crops, pastures and forests.

The four main fields of interest are:

- Environmental studies
- Agriculture monitoring
- Forest monitoring
- Global change studies

3. **Algorithmic methodology**

A S10 is the result of a merge of the atmospherically corrected data of all segments of the given decade into a single global world image using the MVC (Maximum Value Composite) algorithm. In the MVC algorithm the selection of the 'best' pixel is based on a simple priority scheme:

- ordered from highest to lowest priority we first have 'good' quality pixels that are also 'clear', then 'good' quality pixels that are not 'clear', and finally 'bad' quality pixels
- if no decision can be made based on priority, i.e. both candidate pixels have the same priority, then select the one with the $\max(\text{NDVI}_{\text{toa}})$

4. Ancillary data

No

5. Examples

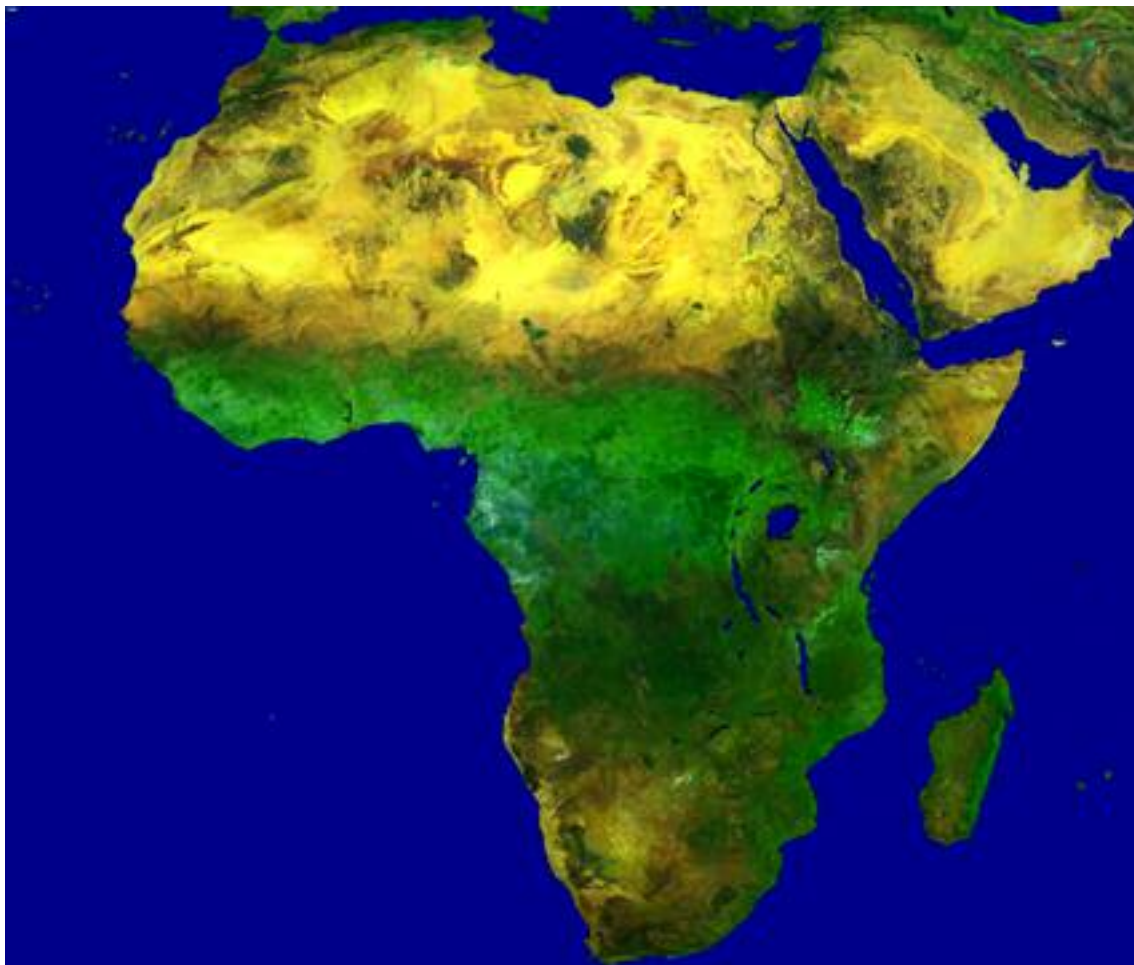


Fig.
S10 for Africa



Date: 2nd decad of May 2004
RGB Color combination: MIR-B3-B0

6. Validation evidence

OPERATIONS CONTROL CENTRE (CMP)

The CMP's main mission is to monitor and generate commands controlling the operation of the orbiting SPOT4/5 satellite. Satellite telemetry is received and commands uplinked via the CNES S-band TT&C network.

With regard to the VEGETATION payload, the CMP:

- monitors payload and equipment operation,
- generates and manages telecommands (uplinked via the CNES S-band TT&C network),
- performs operational programming in accordance with mission requirements.

CPV operation

The VEGETATION programming centre (CPV) is a component of the SPOT4/5 operations control centre (CMP). Note, however, that the CPV is dedicated solely to the VEGETATION payload.

Functions include:

- constant review and management of all mission-specific programming needs (global coverage, regions of special interest, etc.), payload-specific programming needs (calibration, etc.) and system constraints (memory capacity, equipment operating times, satellite manoeuvres, SRIV outages, etc.),
- generation of payload programming on the basis of these needs and constraints,
- formatting of programming instructions as SPOT4/5 telecommands,
- monitoring of VEGETATION workload and generation of statistics on operating time logged by various items of payload equipment,
- monitoring of the entire "image loop", which is to say, comparison of programming with the imagery actually acquired then processed by the VEGETATION image processing centre (CTIV) to ensure quick response in the event of an anomaly,
- scheduling of SRIV activities to accommodate memory dump sessions and generation of interface files to be sent to the SRIV,
- archiving of all data relating to VEGETATION programming.

VEGETATION IMAGE QUALITY CENTRE (QIV)

The VEGETATION image quality centre's main missions include:



- radiometric and geometric calibration of the VEGETATION instrument and determination of the parameters to be supplied to processing centres for the correction of raw image data,
- regular monitoring of image quality to check that all quality parameters meet user specifications,
- creation and maintenance of the GCP database used by the CTIV to model the VEGETATION instrument's imaging geometry,
- expert appraisals of anomalies involving image quality, including proposed corrective actions and follow-up to ensure that these are correctly implemented,

validation, in image quality terms, of the L-band image telemetry system.

7. Estimated cost from ‘pre-operational’ to ‘operational’

This product is a standard product in the CTIV, and is already available. There is no cost associated with this product.

8. References

<http://www.spot-vegetation.com>

<http://www.vgt.vito.be>

9. Technical product sheet

<u>Product name</u>
<i>S10</i>
<u>Algorithmic Methodology</u>
<i>A S10 is the result of a merge of the atmospherically corrected data of all segments of the given decade into a single global world image using the MVC (Maximum Value Composite) algorithm.</i>
<u>Geometric Resolution</u>
<i>1 km</i>
<u>Product Accuracy</u>
<i>300m</i>



<u>Frequency Delivery</u> <i>Three times a month</i>
<u>Ancillary data</u> /
<u>Delivery time</u> <i>Three days</i>
<u>Archive</u> <i>April 1998 until now (all products older than 3 months are available on http://free.vgt.vito.be)</i>