

Release Note for 2.2.0

The Note describes the main modifications contained in version 2.2.0, with respect to the new features (Section 1), the new datasets treated on the system (Section 2), the bug-fixing changes (Section 3) and the products references that have been added to the Product Report document (accessible in eStation under the Help tab – see Section 4). Some general considerations on the upgrade are also reported here below.

Main Remarks

- Customization for GMES&Africa consortia: the current release contains the definition of all Consortia participating in G&A, and, after its installation, it is possible to select the corresponding Thema (i.e. the name of the leader of the consortium) in order to have the relevant products activated over the respective areas of interest. This has been implemented by following the indications collected during the three Workshops organized by JRC in Ispra between October 2018 and March 2019.
- New Products: a number of EO datasets are added to the eStation acquisition and processing services, namely the Sentinel-3 OLCI Chl-a and TSM, SLSTR SST, Global Land NDVI at 300m resolution, ASCAT SWI, WSI and SPI from JRC/MARS, Burnt Areas at 300m, and CMES products (see section 2 for details). A specific service is also added to download S2 L1C/L2A images from JRC JEODPP platform.
- Finalization of GUI: the User Interface does now allow the user to perform all operations w.o access to the underlying database, in particular the definition of a new product, the creation and editing of mapsets (a.k.a. AOI), the management of logos and the full management of the Workspaces (including import/export for sharing among Users).
- Additional tools: the installation of the 2.2.0 upgrade also includes the installation of AnyDesk (for remote connection and User Support) and a full version of ESA-SNAP 6.0

1. NEW FEATURES

Summary: the main new developments in release 2.2.0 are:

- Customize the eStation for the new Consortia, including defining new Thema, mapsets and static layers. The current release is the first really addressing all GMES&Africa Users.
- New products are added (see also Products section below), and therefore the acquisition and processing services needed some new features.
- Additional tools and libraries are made available in 2.2.0, including Anydesk (for remote connection and User Support), full version of SNAP 6.0.
- A number of new features are made available in the GUI, including:
 - Creation and editing of mapsets (aka region of interest, ROI)
 - Management of the logos
 - Improved management of the Workspaces (including import/export for sharing with other Users)
 - Full management of new products through the GUI, w/o access to the DB.

1.1 GENERAL

- Simplify vgt-ndvi versioning, since many versions (also obsolete) are still presented
- Correct/normalize permissions in the filesystem
- Create new mapset for new products and for the new GMES&Africa Regions (e.g. North Africa)
- Update of the Documentation
- Addition of SNAP tool shortcut link in the Desktop (or under the CentOS menus)

1.2 ACQUISITION

- The Product administration tool in the GUI facilitates the addition, modification of products and its metadata.
- Generation of the Inland Water Body (Occurrence) product from Google Earth Engine (GEE) for all Consortia and disseminate on the eStations.
- New acquisition type to retrieve data from EUMETSAT's Copernicus Open Data Access in order to download Sentinel-3 Marine products
- Distribution of Motu-client and sentinelsat API to MESA station for data retrieval.

1.3 PROCESSING

- Deactivate obsolete VGT processing chains
- Processing chain: creation of output in temporary directory and move the files to the real output directory to avoid the problems
- Generate the MODIS Primary Production LTS(Long term statistics) over 8day interval with special features
- Apply Processing chains to additional products (e.g. olci-wrr, slstr-sst, modis-chla)
- Improve the processing chain by defining standard names for derived products and defining subprocess python class to statistics and anomalies separately.

1.4 DATA MANAGEMENT

- Define the products for each Thema, including the new GMES&Africa consortia
- GUI - Data Management - Product naming and ordering as in Acquisition and Analysis.
- Download of missing data - Request creation in Data Management for Sync tool

1.5 VISUALIZATION/GENERAL

- Implement a feature to import Logos from GUI
- Addition of new pre-process types and internet acquisition types to GUI
- Analysis - Workspaces - Layers, Legend and Logo administration are available only when login
- Add to the GUI the mapset editing and creation of New mapsets

1.6 VISUALIZATION/MAPS

- Notify the product unavailability when opening a Workspace
- Create a logo store in the GUI and add importing and administering of logos
- Assign a legend to all new Sub-products
- Add out-masking to map template
- Layers visibility selection saved in map template
- Create and make available 'Public' Workspaces
- Assign a legend to sub products through the legend administration tool
- Create a legend on the fly when opening a sub-product
- Add refresh timeline button to timeline in Mapview

1.7 VISUALIZATION/GRAPHS

- Reduce legend font size to fit into small Map windows
- Add the version 3.0 of TAMSAT RFE
- Associate the draw properties of prod/sub-product to the graphs.
- Have the possibility to ADD a logo/image in the graph
- Have the possibility to define all the graphical properties of graphs, including additional elements like logo and disclaimer
- Calculate the water quantity fallen over a polygon
- One graph update button

1.8 OTHER PACKAGES

- Add Anydesk to 2.2.0 rpms in order to have it available on all stations
- Integration of Sentinel, SMOS, PROBAV Toolboxes on eStation 2.0

1.8.1 Doc package:

- Doc for Validation/verification of products is created

1.8.2 Layer package:

- New Layers are created for the boundaries of all African Regions (including North Africa)

2. PRODUCTS

Summary: A number of new products, detailed below, are added to the eStation, following the requests formulated by the Users during the Workshops in Oct/2018 and Feb/Mar 2019

These products are described in the Product Report document (accessible from the Help tab) and listed below.

2.1 ACQUISITION

- SENTINEL 3 – OLCI(OCEAN COLOR – Chlorophyll- OC4ME and Total Suspended Matter TSM) and SLSTR(Sea Surface Temperature) – Daily product
- Dry Matter Productive product with statistics and anomalies (DMP V2.0) over 10days
- Water Satisfaction Index from CHIRPS rainfall over 10days
- Acquisition of VGT/PROBAV Burnt Area 300m over 10days
- Internet source(url link) for MODIS FIRMS 6.0 has been modified
- Acquisition of the Global Land Products(NDVI) at 300m resolution
- Standard Precipitation Index SPI for 1 and 3 months periods
- Download of the Water Level over river and lakes from [Hydroweb-Theia](#)
- ASCAT SWI Soil Water Index – Every day acquisition
- Sentinel 2 L1C products downloads for predefined bands using special authentication from JRC Earth Observation Data and Processing Platform([JEODPP](#))
- TAMSAT v3 – Rainfall version 3
- RFE-ARC2 – ARC2 Rainfall over 10days

2.2 PROCESSING

- Computation of standard anomaly indicators for FAPAR/FCOVER/LAI
- CHIRPS LTS(Long term statistics) disseminated by EUMETSAT
- Computation of MODIS-FIRMS products at 10 km scale
- Generation of MODIS Primary Production LTS(Long term statistics)
- Verification of vgt-ndvi processing chain for the anomaly
- Activate the Relative difference anomaly for NDVI

3. BUG FIXING

Summary: a number of bugs were identified by JRC or indicated by the Users, and addressed in the current version.

These activities are reported for completeness sake and for traceability, though they are not of primary interest for the Users (more for JRC internal reference)

3.1 ACQUISITION

- Errors in get_internet: have been corrected
- Modify acquisition for LSASAT-ET, due to the new product disseminated over the full disk
- Includes file expression in get_internet different for certain periods
- Error in creating current list internet type = FTP
- Ingestion goes in error for SENTINEL-3A SLSTR in mesa-proc
- Evaluation of LAI/FAPAR/FCOVER versioning (RT0,1,2,6)
- Activation of the data sources
- In Acquisition display only products having an entry in PADS table
- Activating a product activates its ingestions over all defined mapsets and all the associated processing chains.
- Delayed reception of data at TAFIRI (PML SST)
- Make more robust the frequency.get_dates() method in dataset python class
- PML 3day ingestion goes in error after activating Internet source
- Sentinel 3 sea surface temperature is missing legend
- Verification of rain estimates (FEWSNET, CHIRPS and ARC) Over Algeria.

3.2 PROCESSING

- Errors in processing chain of LSASAF-ET
- Correct the modis_pp chain for 8days subproducts
- Product display for ongoing products does not work
- SPOT-PV NDVI chain
- Processing of vgt-ndvi on Reference Station
- fAPAR products is incomplete
- RFE-FEWSNET products to be re-generated
- MODIS PP creates products with 'random' dates in 1monmax dir - at TAFIRI
- Soil moisture and ET products not updated

3.3 DATA MANAGEMENT

- Dataset class in datasets.py crashes system when passed product not in DB
- Datamanagement requests goes in error with e1day products that have no files in filesystem.
- Request job randomly goes in error and its request file is deleted.
- Create archive from request not working properly
- Product administration - add ingest product puts defined_by USER

- GUI - Analysis - Data Management - Correct error in generating/managing requests when no mapset is defined.
- Edit product in product admin delete ingested subproduct not working.
- Request admin tool in data management tab does not close

3.4 **VISUALIZATION**

- Masking products (Native) from the Acquisition tab and subproducts from the Product Navigator
- New Workspace name cannot be changed (before saving it)
- Bug in vector layer menu, which sometimes doesn't show
- The maps in re-opened WS does only show date and version in the Title
- FCOVER, small issues
- JRC/MARS WSI - Differences between values plot in maps and in graphs
- MODIS SST anomalies are not available
- Replace MESA with G&A logo in the MapView object
- Save graph as template, sometimes does not show the popup window to give the name of the graph template.
- Timeseries computation - different aggregation types and units
- GUI - logout when not having opened the Analysis tab gives error and blocks the GUI.
- Add the getTimeseries the aggregation-type 'precip'
- SPOT-NDVI legends to be corrected
- Saving a .png in mapview does not take all elements
- Small bug when changing color for several lines
- Vgt-lat V2.0 small issues

3.5 **SYSTEM**

- The 'Analysis' tool is caching images
- VM and Window Versions do not see data (if disk initially not plugged in)
- Mapset normalization
- Correction on the interface
- Product Navigator in Mapview - load of data once and not for each Mapview Product Navigator
- OTJT - Service status not represented
- Online version bugs and adjustments
- EUMETCast High Volume Service requires and upgrade of sw on mesa-proc
- Error in fts_config.py

3.6 **CONFIGURATION/DB**

- The DB synchronization logfile too large
- Upgrade not done on PC2

3.7 **DOCUMENTATION**

- Error in Installation Manual

4. REFERENCE

- <https://www.theia-land.fr/en/product/water-levels-of-rivers-and-lakes-hydroweb/>
- <https://land.copernicus.eu/global/products/swi>
- https://mars.jrc.ec.europa.eu/asap/files/WSI_TECH_REP.pdf
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6360855/>
- <https://www.tamsat.org.uk/>
- https://www.cpc.ncep.noaa.gov/products/fews/AFR_CLIM/AMS_ARC2a.pdf
- <https://land.copernicus.eu/global/products/ba>
- <https://earth.esa.int/web/sentinel/user-guides/sentinel-2-msi/product-types/level-1c>
- <https://jeodpp.jrc.ec.europa.eu/home/>
- <http://marine.copernicus.eu/>
- <https://scihub.copernicus.eu/dhus/#/home>
- <https://sentinelat.readthedocs.io/en/stable/api.html>