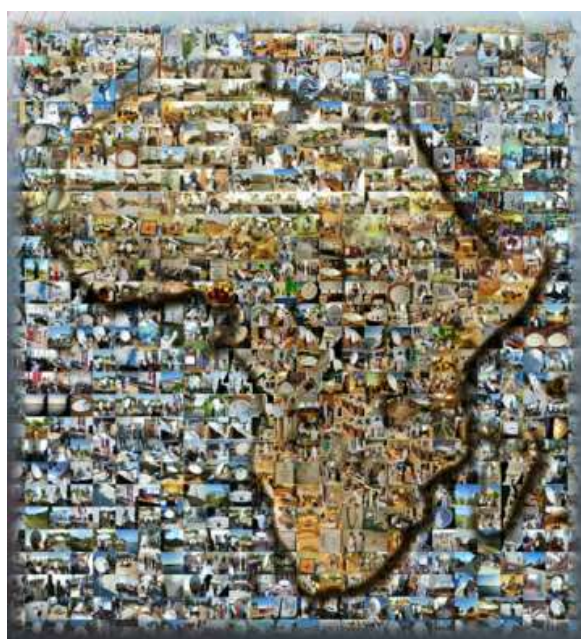


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 (MESA) SUPPLY CONTRACT**

**TELESPAZIO FRANCE**

**MESA / PUMA RELEASE NOTE**



<b>Rédigé par /Written by</b>	<b>Responsabilité-Service-Société Responsibility-Office-Company</b>	<b>Date</b>	<b>Signature</b>
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<b>Vérifié par /Verified by</b>			
Amandine PICOU	Product assurance engineer	11/12/2017	
<b>Validé par /Validated by</b>			
Olivier Lambaux	Technical Responsible	11/12/2017	

**Entity Issuing:** DG Telespazio France (owner of the original)

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**TABLE OF REVISIONS**

<b>Version</b>	<b>Date</b>	<b>Pages</b>	<b>Modification</b>
1.0	05/12/2017	All	First version of the document
1.1	06/12/2017		JRC add MESA release note
1.2	11/12/2017		Revision from Quality Service

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**APPLICABLE DOCUMENTS**

<b>AD</b>	<b>Title of document</b>	<b>Référence</b>
[AD.1]	MESA Supply Contract FED/2015/356-833/	MESA Supply Contract FED/2015/356-833/ – Supply of MESA thematic receiving stations, maintenance and training”

**REFERENCE DOCUMENTS**

<b>RD</b>	<b>Title of document</b>	<b>Référence</b>
[RD.1]	TASF-MESA-MAM-11	MESA Station Administration Manual
[RD.2]	TASF-MESA-MIM-10	MESA Station Software Installation Manual
[RD.3]	MESA_MUT_001_TPZ	Tuleap User Manual
[RD.4]	MESA_RN_003_TPZ	MESA/PUMA release note 1.0.6

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**ACRONYMS AND DEFINITIONS**

<b>ACRONYM</b>	<b>DEFINITION</b>
<b>AD</b>	Applicable Document
<b>DVD</b>	Digital Versatil Disk
<b>EUMETCast</b>	EUropean METerology broadCast
<b>FAPAR</b>	Fraction of Absorbed Photosynthetically Active Radiation
<b>FCOVER</b>	Fraction of green vegetation Cover
<b>FTP</b>	File Transfert Protocol
<b>FTS</b>	File Transfert System
<b>GB</b>	Giga Bytes
<b>GRIB</b>	General Regularly-distributed Information in Binary form
<b>HDF5</b>	Hierarchical Data Format
<b>IASISST</b>	Infrared Atmospheric Sounding Interferometer Sea Surface Temperature
<b>IODC</b>	Indian Ocean Data Coverage
<b>ISO</b>	Short cut for International Organization of Standardization 9660, standard for DVD filesystem.
<b>LAI</b>	Leaf Area Index
<b>MESA</b>	Monitoring for Environment and Security in Africa
<b>MODIS</b>	Moderate Resolution Imaging Spectroradiometer
<b>Modis-PML</b>	Modis product from Plymouth Marine Laboratory
<b>NetCDF</b>	Network Common Data Form
<b>NOAA19</b>	National Oceanic and Atmospheric Administration
<b>NPP</b>	National Polar-orbiting Partnership
<b>PC</b>	Personal Computer
<b>PNG</b>	Portable Network Graphics
<b>PROBA-V</b>	Project for On-Board Autonomy – Vegetation
<b>PUMA</b>	Préparation à l'Utilisation de MSG en Afrique
<b>RPM</b>	RedHat Package Manager
<b>SST</b>	Sea Surface Temperature
<b>UKMO</b>	United Kingdom Met Office
<b>USB</b>	Universal Serial Bus
<b>UTM</b>	Universal Transverse Mercator
<b>VGf</b>	Very Good Functioning
<b>ZLIB</b>	Zip Library

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## **1. INTRODUCTION**

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This document provides all the relevant information about the latest MESA and PUMA2015 stations software delivered by Telespazio France in the frame of MESA Supply Contract [AD1].

In the next chapters, the list of delivered packages are detailed, as well as the bugs fixed in this update.

The last chapter of the present document details the update deployment process, and beneficiaries' administrator's actions required to install and verify the updates.

## **2. RELEASED VERSIONS OF MESA/PUMA2015 STATIONS**

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### **2.1 OVERVIEW**

The version detailed in the present document is labelled **V1.3.0** for both MESA and PUMA 2015 stations. Version 1.3.0 contains significant upgrades specific to the MESA and PUMA2015 stations, and for the 'System' part of the stations, which is common to both types of installations (MESA and PUMA2015). In synthesis, 1.3.0 contains:

For MESA Stations: the eStation 2.1.1 version and upgrade of FTS. The eStation 2.1.1 manages more datasets in acquisition and processing (e.g. version 2.0 of the LAI, FAPAR and FCOVER products) and has new features in the Analysis component (e.g. editing and assignment of the color-palettes)

For PUMA2015 Stations: an upgrade of Synergie, Archipel and FTS. It includes support for Lake Victoria (4km) and Africa (17km) GRIB2 UKMO model and support of new netCDF format for SST products.

### **2.2 DEPLOYMENT HISTORY**

Here below a synthetic view of the previous versions deployed is presented:

- The version 1.2 is an upgrade of eStation and FTS
- The version 1.1.0 is a major update of the stations. It mainly includes new IODC products in Synergie and Sentinel3 L2 reception;
- The version 1.0.6 was an update to fix a synergie problem and to fix a problem of wrong folder deletion in some case.
- The 1.0.5 version was released to fix a bug in the FTS component.
- The version 1.0.4 was an update of the V1.0.3 that was used for the Verification of Good Functioning on seven stations during the month of July. As a result of the VGF, the update V1.0.4 includes the correction of the issues raised during the VGF and, also, several

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improvements of the stations software based on users' feedback provided after the first training sessions and the deployment of the first stations.

It is important to highlight that the stations System packages are common to both MESA and PUMA 2015 stations: this allows to provide update and fixes to all stations when they deal with system-level features (such as Menus, Dashboard or FTP Push features for example).

As a consequence, most of update packages and fixed Tuleap tickets are redundant between MESA and PUMA 2015 stations.

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## **2.3 LIST OF DEPLOYED PACKAGES**

### **2.3.1 MESA stations**

The list of new packages versions for MESA stations version 1.3.0 are the followings:

- mesa2015-eStation2-Apps-2.1.1-8.x86\_64.rpm
- mesa2015-eStation2-Docs-2.1.1-2.x86\_64.rpm
- mesa2015-tas\_mesa\_puma\_2015\_ftsd-1.2-4.noarch.rpm
- mesa2015-tas\_mesa\_puma\_2015\_update\_rpm-6-3.noarch.rpm

<b>Package RPM</b>	<b>Version 1.2.0</b>	<b>Version 1.3.0</b>	<b>Description</b>
eStation2-Apps	2.1.0-11	2.1.1-8	The eStation 2.1 application
eStation2-Docs	2.1.0-5	2.1.1-2	The eStation 2.1 documentation
ftsd	1.2-3	1.2-4	File transfer component
update_rpm	6-4	6-5	Global system update

**Table 1: RPMs update 1.3.0 on MESA**

### **2.3.2 PUMA2015 stations**

The list of new packages versions for PUMA2015 stations version 1.3.0 are the followings:

- puma2015-archipel-chain-base-2.2-001.noarch.rpm
- puma2015-archipel-chain-data-composites-2.2-001.noarch.rpm
- puma2015-archipel-chain-data-masks-2.2-001.noarch.rpm
- puma2015-archipel-chain-master-2.2-001.noarch.rpm
- puma2015-archipel-soft-base-2.2-001.x86\_64.rpm
- puma2015-archipel-soft-gdal-2.2-001.x86\_64.rpm
- puma2015-archipel-soft-geos-2.2-001.x86\_64.rpm
- puma2015-archipel-soft-hdf5-2.2-001.x86\_64.rpm
- puma2015-archipel-soft-java-2.2-001.x86\_64.rpm
- puma2015-archipel-soft-master-2.2-001.x86\_64.rpm
- puma2015-archipel-soft-netcdf-2.2-001.x86\_64.rpm
- puma2015-archipel-soft-zlib-2.2-001.x86\_64.rpm
- puma2015-synergie-config-PUMA2015-1.0-048.x86\_64.rpm
- puma2015-tas\_mesa\_puma\_2015\_ftsd-1.2-4.noarch.rpm
- puma2015-tas\_mesa\_puma\_2015\_update\_rpm-6-3.noarch.rpm

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Package RPM	Version 1.2.0	Version 1.3.0	Description
archipel-chain-base	2.1-002	2.2-001	Archipel Processing chain
archipel-chain-data-composites	2.1-002	2.2-001	Archipel mask ressources
archipel-chain-data-masks	2.1-002	2.2-001	Archipel masks
archipel-chain-master	2.1-002	2.2-001	Archipel necessary data
archipel-soft-base	2.1-002	2.2-001	Archipel core
archipel-soft-gdal	2.1-002	2.2-001	Gdal dependency
archipel-soft-geos	2.1-001	2.2-001	Geos dependency
archipel-soft-hdf5	2.1-001	2.2-001	HDF5 dependency
archipel-soft-java	2.1-001	2.2-001	Java dependency
archipel-soft-master	2.1-002	2.2-001	Miscellaneous dependencies
archipel-soft-netcdf	2.1-002	2.2-001	NetCDF dependency
archipel-soft-zlib	2.1-001	2.2-001	ZLIB dependency
synergie-config-PUMA2015	1.0-046	1.0-048	Synergie configuration
ftsd	1.2-3	1.2-4	File transfer component
update_rpm	6-2	6-3	Global system update

**Table 2 : RPMs update 1.3.0 on PUMA2015**

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### **3. NEW FEATURES IN 1.3.0**

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#### **3.1 MESA STATIONS**

##### **Acquisition**

- MODIS Global 4km products (Chl-a, SST, Kd490 and PAR) are acquired from EUMETCast.
- The Water Body Detection products (wd-gee) produced by JRC is added.
- The latest version of Copernicus Global Land products are enabled (v2.0 for FAPAR, LAI, FCOVER, derived from PROBA-V)

##### **Processing**

- Primary Production from MODIS (modis-pp) is implemented as a non-standard processing chain and generates 8daysavg and monavg products
- Sea Surface Temperature Front Detection is implemented for Modis-PML 1 km product.
- Review and optimize several processing chains, including vgt-ndvi and standard chain for precipitation 10 day products.

##### **Visualization/Maps**

- Adapt the length of the 'Timeline' period in Map Viewer, in order to display always around 30/40 steps.
- Maintain map size on timeline collapse and expand.
- Correct the empty disclaimer that was shown white when saved as PNG.
- Save Map template and propose as template name the product name and version.
- Hide selected geometry when outmasking.
- Improve the functionality to draw geometries on a Map, to subsequently generate Graphs.
- Improve the Mapview 'template', by adding to the saving the loaded vector layers and the zoom extent.
- Fix a number of small bugs in the management of Vector layer draw properties.
- The 'Timeline' in a Mapview is adapted to the product's frequency, e.g. 2 months for daily products.

##### **Visualization/Graphs**

- De-activated series in a graph are presented in very light grey in the legend. Changed to a darker gray color.
- Better visualization of missing (zero or nodata) values in profile graph.
- Profile timeseries implemented support for 4 different y-axes.

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## **3.2 PUMA2015 STATIONS**

### **Synergie**

New model support:

- GRIB2 UKMO model on Lake Victoria domain (grid 4km)
- GRIB2 UKMO on Africa domain (grid 17km)

Display of new satellite products:

- NPP SST : replace NOAA19 SST product
- IASISST

Bug fixing :

- Improvement of the usb licence dongle

### **Archipel**

Add processing for SST products received with new ncdf format (previously grib files):

- mgrsstT
- HsstMsgT
- glbsstT
- HsstGoesT
- narsstT (Metop)

Add processing for new SST products:

- narsstT (NPP)
- iasisstT

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## **4. UPDATE DEPLOYMENT THROUGH EUMETCAST**

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### **4.1 OVERVIEW**

Starting from V1.0.3, all the stations updates are performed through the EUMETCast satellite data flow. This means that the station Acquisition chain (from Antenna to PC1) must be fully operational in order to receive this update.

In order to guarantee that all beneficiaries receive the update, regular disseminations of the 1.3.0 packages will be performed, on a periodic basis (each Tuesday), starting from Thursday 12<sup>th</sup> of December 2017

### **4.2 AUTOMATIC UPDATE**

The stations update, on both MESA and PUMA2015, should be mainly an automatic process, which is notified to the Users by a message appearing on PC3 (see paragraph 5.3 of the DR.1 document). This message is displayed at 12:00 UTM of the day following the reception of the .rpm packages: click yes and wait for the update to be completed.

In order to verify that the update were successfully executed, you can just use the menu '**System > Mesa-Puma > About**' on the 3 PC and the pop up should show the update version number (i.e. **1.3.0**).

Here below some more details on the update process, for advanced Users and troubleshooting purposes.

### **4.3 INSIGHTS OF THE UPGRADE PROCESS**

The .rpm packages are received on PC1; you can check the proper reception of update packages as below:

- Log in as root on PC1
- Check the RPM archive reception into the folder '/data/data\_patch/temp/'.

Once the update packages have been received on PC1, the synchronization jobs copy them to the other PCs, as you can verify looking at /data/data\_patch/temp/ on PC2 and PC3.

If that does not happen, you can:

- **Synchronize** .rpms to the other PCs (menu '**System > Mesa-Puma > Data Synchronization**')  
**Synchronization**')
- You can now verify that the RPM has been spread out by looking in the '/data/data\_patch/temp/' of each computer (PC1, 2 & 3).

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## 4.4 NON-STANDARD UPGRADES

In some very special cases, it could be required to perform manual upgrades of the stations (i.e. without getting the update packages through EumetCast stream) or reinstall the station from scratch to upgrade. Both options are possible. **But manual upgrades should only be performed in the case of regular upgrade is not possible.**

### 4.4.1 Manual upgrade

In case of manual upgrade, download the RPMs from the Telespazio FTP and copy all the RPM to PC1 in the folder '/data/data\_patch/temp'. After follow the instructions 4.3.

FTP	<a href="ftp.telespazio.fr">ftp.telespazio.fr</a>
Login	Mesareadonly
Password	HouseCloud.2017
Folder for PUMA	/outgoing/updates/1.3.0/puma
Folder for MESA	/outgoing/updates/1.3.0/mesa

**Table 3 : FTP information for 1.3.0 update**

### 4.4.2 Installation from scratch

If you reinstall the station the data and the customization will be lost.

There is two possibilities to reinstall:

- USB key
- DVD

The USB key method requires a minimal size of 9 GB. Both way of installing require to download an ISO on our FTP (see Table 4 : FTP information). Once the ISO has been downloaded, you could check its integrity using the md5sum command and burn it.

Be careful, you have to use rufus tool ([https://rufus.akeo.ie/?locale=fr\\_FR](https://rufus.akeo.ie/?locale=fr_FR)) to transfer the ISO to the USB stick. Other traditional way like the dd command will not work.

FTP	<a href="ftp.telespazio.fr">ftp.telespazio.fr</a>
Login	mesareadonly
Password	HouseCloud.2017

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Files (for DVD)	/outgoing/ISOS/1.3.0/mesa_dvd_1.3.0.iso /outgoing/ISOS/1.3.0/mesa_dvd_1.3.0.iso.md5
Files (for USB)	/outgoing/ISOS/1.3.0/mesa_usb_1.3.0.iso /outgoing/ISOS/1.3.0/mesa_usb_1.3.0.iso.md5

**Table 4 : FTP information for ISOs 1.3.0**

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