



PRISMA User Manual

Issue 1.3 Date 27/03/2023

TABLE OF CONTENTS

1. SCOPE AND APPLICABILITY	4
1.1 SCOPE.....	4
1.2 PURPOSE.....	4
2. APPLICABLE AND REFERENCE DOCUMENTS	5
2.1 APPLICABLE DOCUMENTS.....	5
2.2 REFERENCE DOCUMENTS.....	5
3. ACRONYMS AND DEFINITIONS	6
3.1 ACRONYMS.....	6
3.2 DEFINITIONS.....	12
4. A FAST WALKTHROUGH TO THE PRISMA USER ACCESS	14
4.1 REQUEST OF IMAGES FROM THE ARCHIVE.....	14
4.2 REQUEST OF ACQUISITION OF NEW IMAGES.....	22
5. PRISMA SYSTEM OVERVIEW	29
5.1 THE PRISMA SATELLITE	31
5.2 THE PRISMA GROUND SEGMENT	33
6. REFERENCE MANUAL	36
6.1.1 LOG IN.....	36
6.2 PRODUCTS FROM THE ARCHIVE/CATALOGUE.....	36
6.2.1 MAIN INTERFACE	37
6.2.2 MAP VIEWER.....	37
6.2.3 DATA NAVIGATION PANEL.....	37
6.2.3.1 Layers	38
6.2.3.2 Search pane	39
6.2.3.3 Placemarks	40
6.2.3.4 Selection info	40
6.2.4 RESULTS PANE.....	41
6.2.5 ADD BASKET	43
6.2.6 CART PANE	49
6.3 NEW ACQUISITIONS	50
6.3.1 ORDER LIST.....	50
6.3.2 CREATE ORDER.....	52
6.3.3 CREATE CALIBRATION ORDER	56
6.3.4 ORDER STATUS.....	57

LIST OF TABLES

Table 1 Key Payload technical features.	32
Table 2 Product search parameters	39
Table 3 Processing parameters.....	44
Table 4 band indices and related wavelengths	47
Table 5: Constraint on Field of View.....	54
Table 6-6 – Definition of terms general	59

LIST OF FIGURES

Figure 4-1: PRISMA Catalog and new Acquisition selection page	14
Figure 4-2: Catalogue main page	15
Figure 4-3: Area of Interest based query.....	15
Figure 4-4: Area of Interest creation.....	16
Figure 4-5: Time range based query	16
Figure 4-6: Submitting the query	17

Figure 4-7: Query results	17
Figure 4-8: Selection of the images to be processed	18
Figure 4-9: Selection of the type of product.....	19
Figure 4-10: From query results to ordering	19
Figure 4-11: basket view.....	20
Figure 4-12: Order successfully submitted	20
Figure 4-13: Email with the link for downloading the product.....	21
Figure 4-14: Order history.....	21
Figure 4-15: PRISMA Catalog and new Acquisition selection page	22
Figure 4-16: New Order main page (list)	22
Figure 4-17: New Order creation	24
Figure 4-18: New Order review	25
Figure 4-19: New Order submission.....	26
Figure 4-20: Returning to the new order main page.....	27
Figure 4-21: New Order detail	27
Figure 5-1: PRISMA mission architecture	30
Figure 5-2: PRISMA mission block diagram.....	31
Figure 5-3: Pushbroom operating concept	33
Figure 5-4: PRISMA top-level Ground Segment functional architecture.....	34
Figure 5-5: High level PRISMA's portal architecture	35
Figure 6-1: PRISMA portal login window.....	36
Figure 6-2: Catalogue access	36
Figure 6-3: Catalogue main page	37
Figure 6-4: Data navigation panel	38
Figure 6-5: Layer pane	38
Figure 6-6: Product search	39
Figure 6-7: Placemarks.....	40
Figure 6-8: Product info	40
Figure 6-9: Product detailed info	41
Figure 6-10: Quicklook.....	41
Figure 6-11: results of the query on catalogue.....	42
Figure 6-12: Query results pagination	42
Figure 6-13: Product details	42
Figure 6-14: Time explore.....	43
Figure 6-15: Add basket operation	43
Figure 6-16: Processing parameters	44
Figure 6-17: Query saving	48
Figure 6-18: Cart list	49
Figure 6-19: Order editing.....	49
Figure 6-20: Processing order launch	49
Figure 6-21: Order status list.....	50
Figure 6-22: New Acquisition access	50
Figure 6-23: Primary User Page with Order List	51
Figure 6-24: Order status selection.	51
Figure 6-25: Order filtering.....	52
Figure 6-26: Filtered order	52
Figure 6-27: PR corresponding to a filtered order	52
Figure 6-28: Order creation page	53
Figure 6-29: Order Submission with quota violation message.....	54
Figure 6-30: TC Acquisition Parameters	55
Figure 6-31: Calibration User page	56
Figure 6-32: Calibration Request preparation	56
Figure 6-33: Status updates	57
Figure 6-34: Order details.....	58

1. SCOPE AND APPLICABILITY

1.1 SCOPE

This Product Specification Document contains the User Manual of the PRISMA system, based on industrial documentation PRI-MCC-MPS-SUM-0153-1.5 - MPS SOFTWARE USER MANUAL 20/02/2020 (for requesting new PRISMA acquisitions) and PRISMA-MA-ACS-GS-0122 Catalog User Manual v1.1 24/01/202 (for selecting and getting already acquired PRISMA images).

1.2 PURPOSE

This document is a “guide” to understand how to interact with the PRISMA system to order new acquisitions or already acquired images. According to this scope, it is divided into the following sections:

- A “primer” style section, with a fast walkthrough in the available functions. For most of users this section it’s enough in order to perform a basic interaction with the system
- An introductory section which gives the essential knowledge about the PRISMA system, in order to correctly understand the remaining sections
- Two sections which constitute the reference manual for the functions exposed to the user by the
 - PRISMA Mission Planning subsystem
 - PRISMA Catalogue web interface

2. APPLICABLE AND REFERENCE DOCUMENTS

2.1 APPLICABLE DOCUMENTS

[AD1] Not Used

2.2 REFERENCE DOCUMENTS

[RD-1] Not Used

3. ACRONYMS AND DEFINITIONS

3.1 ACRONYMS

Acronym	Meaning
ACD	Ancillary Data (=satellite attitude data)
AD	Applicable Document
AIT	Assembly Integration & Test
AIV	Assembly Integration and Verification
ANT	Antenna
AOCS	Attitude and Orbit Control System
AR	Acceptance Review
ARC	ARchiving and Catalogue facility
ARD	Application Requirements Document
ARF	ARchiving Facility
ASI	Agenzia Spaziale Italiana
ASIC	Application-Specific Integrated Circuit
ATG	Allegato Tecnico Gestionale
AUX	Auxiliary Data
BB	BreadBoard
BER	Bit Error Rate
Bps	Bit Per Second
BPSK	Bipolar Phase Shifting Keying
BSP	Broglio SPace centre
BU	Business Unit
CADM	Configuration and Data Management
CAT	CATalog
CC	Catalog Client
CC	civil protection Competence Centre
CC	Cloud-Coverage
CC	Configuration Control
CCB	Configuration Control Board
CCDB	Configuration & Characterizatoin DataBase
CCN	Contract Change Notice
CDF	Ciphered Data File
CDP	Characterization Data Parameters
CDR	Critical Design Review
CF	Calibration Facility
CFI	Customer Furnished Item
CGA	Capitolato generale per i contratti industriali e di servizi stipulati dall'Agenzia Spaziale Italiana
CGS	Centro di Geodesia Spaziale
CI	Configuration Item
CIDL	Configuration Item Data List
CIDL/ABCL	Configuration Item Data List/As – Built Configuration List
CIL	Critical Item List
CN	Change Notice
CNM	Centro Nazionale Multimissione
CNM	Payload Data Segment
CO	Contract Office
CO	Coregistered
CoC	Certificate of Conformance
COTS	Commercial Off-The-Shelf
CR	Change Request
CS	Catalog Server
CSA	Canadian Space Agency
CT	Capitolato Tecnico
CTM	Compliance and Traceability Matrix

DA	Documento Applicabile
DCL	Declared Components List
DCN	Document Change Notice
DCT	Data CapTure
DDF	De-Ciphered Data File
DDF	Design Definition File
DDP	Design and Development Plan
DEL	DELiverable (documento da consegnare)
DE-OQPSK	Differential Encoded – Offset Quadrature Phase Shifting Keying
DES	Data Encryption Standard
DGF	Data Gate Facility
DIN	Deutsches Institut für Normung
DIS	Direct Ingestion System
DJF	Design Justification File
DM	Data Management
DMF	Data Mining Facility
DML	Declared Materials List
DMPL	Declared Mechanical Parts List
DN	Digital Number
DPA	Destructive Physical Analysis
DPL	Declared Process List
DR	Design Review
DRB	Delivery Review Board
DRD	Document Requirement Definition
DRTF	Data Reception and Transcription Facility
DS	Data Set
DSHA	Data Storage and Handling Assembly
DVB	Digital Video Broadcast
DVT	Design, Verification & Testing
EAR	Export Administration Regulation
ECO	Engineering Change Order
ECOS	ESA Costing Software
ECP	Engineering Change Proposal
ECSS	European Cooperation for Space Standardisation
EEE	Electrical, Electronic and Electromechanical
EGSE	Electrical Ground Support Equipment
EIDP	End Item Data Package
EIRP	Equivalent Isotropic Radiated Power
EM	Engineering Model
EMC	Electro Magnetic Compatibility
EO	Earth Observation
EO	Earth Observation (=30x30km)
EOL	End Of Life
EOS	Earth Observation Special(=up to 1800x30km)
EPPL	European Preferred Parts List
ESA	European Space Agency
ESD	Electrostatic Discharge
FD	Flight Dynamics Centre
FDS	Flight Dynamics System
FGSE	Fluidic Ground Support Equipment
FKDP	In-Flight Data Parameters
FM	Flight Model
FMECA	Failure Mode Effects & Criticality Analysis
FOV	Field Of View
FPA	Focal Plane Assembly
FPGA	Field Programmable Gate Array
FPL	Free Path Loss

FQR	Flight Qualification Review
FRR	Flight Readiness Review
FS	Functional Specification
FTP	File Transfer Protocol
G/S	Ground Station
GA	Selex-Galileo
GCP	Ground Control Point
GIS	Geographical Information System
GKDP	Ground Key Data Parameters
GPS	Global Positioning System
GS	Ground Segment
GSE	Ground Support Equipment
GUI	Graphical User Interface
HDE	Help Desk
HDS	Header Data Set
HEA	HYC Electronics Assembly
HK	HouseKeeping
HMI	Human-Machine Interface
HSA	Hyperspectral Sensor Assembly
HSM	Hierarchical Storage Manager
HTML	Hypertext Markup Language
HW	Hardware
HYC	HYperspectral Camera
HYP	HYPerspectral
HYP	Hyperspectral Channel
I/O	Input/Output
ICD	Interface Control Document
ICU	In flight calibration unit
ID	Identifier
IDHS	Image Data Handling Segment
ILS	Integrated Logistic Support
INS	Inertial Navigation System
IOV	In Orbit Validation
IP	Key Inspection Point
IPF	Instrument Processing Facility
IRD	Interface Requirement Document
IS	Interoperability Server
ISO	International Standardization Organization
ISP	Instrument Source Packet
ISRO	Indian Space Research Organisation
ITAR	International Traffic in Arms Regulations
JAXA	Japan Aerospace eXploration Agency
JHM	Joint Hyperspectral Mission
KDP	Key Data Parameters
KO	Kick Off
KOM	Kick-Off Meeting
L0a	Level 0 products
L0P	Level Zero Processor
LAN	Local Area Network
LAT	Lot Acceptance Test
LCC	Life Cycle Cost
LEO	Low Earth Orbit
LEOP	Launch and Early Orbit Phase
LLI	Long Lead Item
LORA	Level of repair analysis
LOS	Line Of Sight
LRR	Launch Readiness Review
LSA	Logistic Support Analysis

LSP	Launcher Service Provision
LTDN	Local Time Descending Node
LTO	Linear Tape-Open
M&C	Monitoring & Control
MAIT	Manufacturing, Assembly, Integration & Test
MAIV	Manufacturing, Assembly, Integration, Validation
MCC	Mission Control Centre
MCF	Monitoring and Control Facility
MCS	Mission Control System
MD	Metadata Catalogue
MDS	Measurements Data Set
MGSE	Mechanical Ground Support Equipment
MIP	Mandatory Inspection Point
MLI	Multi-Layer Insulation
MM	Multi Mission
MMFI	Multi Mission Facility Infrastructure
MMI	Man-Machine Interface
MOSFET	Metal Oxide Semiconductor Field Effect Transistor
MOU	Memorandum Of Understanding
MPM	Materials, Processes and Mechanical parts
MPS	Mission Planning System
MPTS	Multi-Purpose Tracking System
MRB	Material Review Board
MRD	Mission Requirement Document
MRR	Manufacturing Readiness Review
MS	Mission Statement
MTBF	Mean Time Between Failure
MTD	Catalogue Metadata File
MTTR	Mean Time To Repair
NA	Not Applicable
NC	Non Conformance
NCO	Non Conformità o Osservazione (nonconformance or observation)
NCR	Non Conformance Report
NPSL	NASA Parts Selection List
NRB	Non Conformance Review Board
NRSA	National Research Space Agency
NRT	Near Real Time
OBC	On-Board Computer
OBDAH	On-Board Data Handling
OBS	Organisation Breakdown Structure
OBT	On-Board Time
OCS	Orbit Control Sub-system
OGSE	Optical Ground Support Equipment
OH	Order Handling
OM	Operations and Maintenance Phase
ONF	On-line product Navigation Facility
OO	Object Oriented
OP	Operation
OPT	OPTical
ORR	Operational Readiness Review
OVR	Operation Validation Review
OVR	Operation Validation Readiness Review
P/F	Platform
P/L	Payload
PA	Product Assurance
PA	Product Assurance
PAC	Processing and Archiving Center
PAD	Part Approval Document

PAF	Processing and Archiving Facility
PAN	PANchromatic
PAN	Panchromatic Channel
PC	Personal Computer
PC	Project Control
PCB	Printed Circuit Board
PCDU	Power Control and Distribution Unit
PCONF	Processing Configuration Parameters File
PD	Project Directive
PDHT	Payload Data Handling and Transmission
PDR	Preliminary Design Review
PEB	Power Electronic Box
PERT	Program Evaluation and Review Technique
PFD	Power Flux Density
PFM	Proto-Flight Model
PGSE	Propulsion Ground Support Equipment
PHST	Packaging, Handling, Storage, Transport
PM	Project/Program Manager
PM/PSK	Pulse Modulation / Phase Shifting Keying
PMI	Piccola e Media Impresa
PMP	Program Management Plan
PN	Part Number
PO	Project Office
PR	Programming Request
PSLV	Polar Satellite Launch Vehicle
PT	Product Tree
PVA	PhotoVoltaic Array
PVS	Procedure Variation Sheet
PY	Preliminary
QA	Quality Assurance
QC	Quality Control
QCI	Quality Conformance Inspection
QL	QuickLook
QLP	Quick Look Processor
QR	Qualification Review
R&T	Research and Technology
RAED	Reception, Acquisition & Distribution
RAM	Reliability, Availability, Maintenance
RAMS	Reliability Availability Maintainability Safety
RC	Radiometrically Calibrated
RD	Reference Document
RDBMS	Relational DataBase Management System
RdO	Richiesta d'Offerta
RF	Radio Frequency
RFA	Request For Approval
RFD	Request For Deviation
RFDU	Radio Frequency Distribution Unit
RFW	Request For Waiver
RHCP	Right Handed Circular Polarization
RID	Review Item Discrepancy
RMP	Risk Management Plan
RPT	Screening Report
RR	Requirement Review
RS	Reading Station
RTC	Real Time Clock
RTI	Raggruppamento Temporaneo d'Impresa
RVT	Radiation Verification Testing
RX	Receiver

S/C	SpaceCraft
S/L	Satellite
S/S	SubSystem
SA	Solar Array
SAR	Synthetic Aperture Radar
SCC	Satellite Control Centre
SCS	Satellite Control System
SDF	Support Data Facility
SE	System Engineering
SEMP	System Engineering Management Plan
SFTP	Secure File Transfer Protocol
SM	Structural Model
SOC	Statement Of Compliance
SOI	Scene of Interest
SOVT	System Operation Validation Test
SOW	Statement Of Work
SP	Source Packet
SPF	Single Point Failure
SPR	Software Problem Report
SQL	Structured Query Language
SRF	Spectral Response Function
SRR	System Requirements Review
SRTM	Shuttle Radar Topography Mission
SSO	Sun Synchronous Orbit
SSPA	Solid State Power Amplify
STK	Satellite ToolKit
STR	Star TRacker
STT	STT-SystemTechnik
SVT	System Validation Test
SW	Software
SWIR	Short Wavelength Infra-Red
SZA	Solar Zenith Angle
TAS-I	Thales-Alenia Space Italia
TBC	To Be Confirmed
TBD	To Be Defined
TBS	To Be Specified
TBV	To Be Verified
TC	TeleCommand
TM	TeleMetry
TMA	Three Mirror Anastigmatic
TNA	Training Needs Analysis
TPM	Technical Performance Measurement
TPM	Third Party Mission
TRF	Transcription Facility
TRR	Test Readiness Review
TRRB	Test Readiness Review Board
TSD	Technosystem Developments
TVVR	Technical Verification and Validation Review
TWTA	Traveling Wave Tube Amplifiers
TX	Transmitter
TXA	X-Band Transmission Assembly
UIS	User Interaction Subsystem
UPD	User Programmable Devices
USM	User Manager
UTC	Coordinated Universal Time
VCD	Verification Control Document
VNIR	Visible and Near Infra-Red
WAN	Wide Area Network

WBS	Work Breakdown Structure
WCA	Worst Case Analysis
WP	Work Package
WPD	Work Package Description
WS	Writing Station
WV	Waiver
XBAA	X-Band Antenna Assembly
XML	eXtensible Markup Language

3.2 DEFINITIONS

Term	Definition
CIPHERED DATA FILE	Sequence of VCDUs, synchronized and descrambled but not corrected nor filtered, with CRC still attached. The VCDU Data Zone is still ciphered.
COMPONENT	Part of a Subsystem
ELEMENT	An aggregation of Subsystems implementing a Segment's major task. The following GS Elements are foreseen: The PRISMA Satellite Control Center (SCC) The PRISMA Mission Control Center (MCC) The PRISMA Image Data Handling System (IDHS)
GROUND SEGMENT	The Ground Segment (GS) is the aggregation of all the GS Elements, duly integrated and co-operating, performing the whole set of GS functions as defined in the GS Requirements Document.
INGESTION	Writing of demodulator output bit stream on Disk as Raw Downlink File.
LEVEL 0	Reconstructed unprocessed data at full space-time resolution with all available supplemental information to be used in subsequent processing (e.g. ephemeris, health and safety) appended.
LEVEL 1A	Reconstructed unprocessed data at full resolution, time-referenced, and annotated with ancillary information, including radiometric and geometric calibration coefficients and geo-referencing parameters (e.g. ephemeris) computed and appended but not applied to the Level 0 data.
LEVEL 1B	Radio-metrically corrected and calibrated data in physical units at full instrument resolution as acquired.
LEVEL 1C	L1B data ortho-rectified, re-sampled to a specified grid.
LEVEL 2	Derived geophysical parameters (e.g. sea surface temperature, leaf area index) at the same resolution and location as Level 1 source data.
LEVEL 3	Data or retrieved geophysical parameters which have been spatially and/or temporally re-sampled (i.e. derived from Level 1 or 2 products), usually with some completeness and consistency. Such re-sampling may include averaging and compositing.
RAW DATA	Physical telemetry payload data.
RAW DOWNLINK FILE	Raw bit stream written on disk as output from demodulator (not synchronized).
SUBSYSTEM	Set of HW and SW components purchased and/or assembled to perform a specified function. The following subsystems are currently identified: Satellite Control System (SCS) Flight Dynamic System (FDS) S-band TT&C Station (TT&C) Ground Stations Network (GSN) Mission Planning System (MPS) Centro Nazionale Multimissione (CNM) Level 0/1 Processor Level 2 Processor
SUPPORT VERIFICATION	Verification of the correctness of the archived file dump on the physical support, performed internally by the Archive.

SYSTEM	Within the context of the present project, the System represents the whole PRISMA environment, resulting from the aggregation of its Segments (Ground, Space, etc).
TRANSCRIPTION	Writing on media support the product data files.

4. A FAST WALKTHROUGH TO THE PRISMA USER ACCESS

The user interaction with the system, after the completion of the registration phase and once having obtained the access credentials (username and password) can be summarized as follows:

- The user open the PRISMA web page: login form is displayed,
- The user enters its login/pwd, then credentials are checked against stored credentials
- In case credentials are OK, all missions and services available for such User are displayed
- If the User wants to obtain PRISMA products processed from already acquired images (stored in the archive) he have to select CATALOGUE service, after which he is redirected to such service which allow to perform Catalogue Query operations selecting the desidered image (by area of interest, by acquisition time or both), asking for a product level (L1 i.e. radiance at Top of Atmosphere or one of the varios available L2 product types which transport such radiance at Botttom of Athmosphere correcting the related effects and/or correct the satellite orbital view generating geocoded data) and obtaining (by mean of an email which is sent automatically by the system after product generation) the internet link for downloading the asked product
- If the User wants to obtain new acquisitions of PRISMA sensor he have to select NEW ACQUISITION service, after which he is redirected to MPS component, through which he can submit a Mission Planning operation by specifying mainly the area of interest, the time window in which the acquisition should be take place and theb type of product (L1 or L2) which shall be generated from that image; after the finalization of his new acquisition order, he can follow the timed progression of the states of the order, from SUBMITTED up to COMPLETED (or REJECTED if the order cannot be executed). In case of a successful contextual processing order, the PRISMA image is acquired, processed and the user receives the email with the internet link for downloading the product generated from such image. In case of succful only acquisition order, the PRISMA image is acquired, archived and catalogued.

4.1 REQUEST OF IMAGES FROM THE ARCHIVE

If the User wants to request a product generation from an image already available in the archive, he have to select **Catalog** in this page and then **Open**

Mission Selection Form

Mission *
PRISMA

Systems *
Select a System...
Select a System...
Catalog
New Acquisition

Other links

- [PRISMA home page](#)
- [Documentation Area](#)
- prisma.usermng@asi.it

Figure 4-1: PRISMA Catalog and new Acquisition selection page

The catalogue page is presented, where he can click on the features in the **Product search** area on the top left side

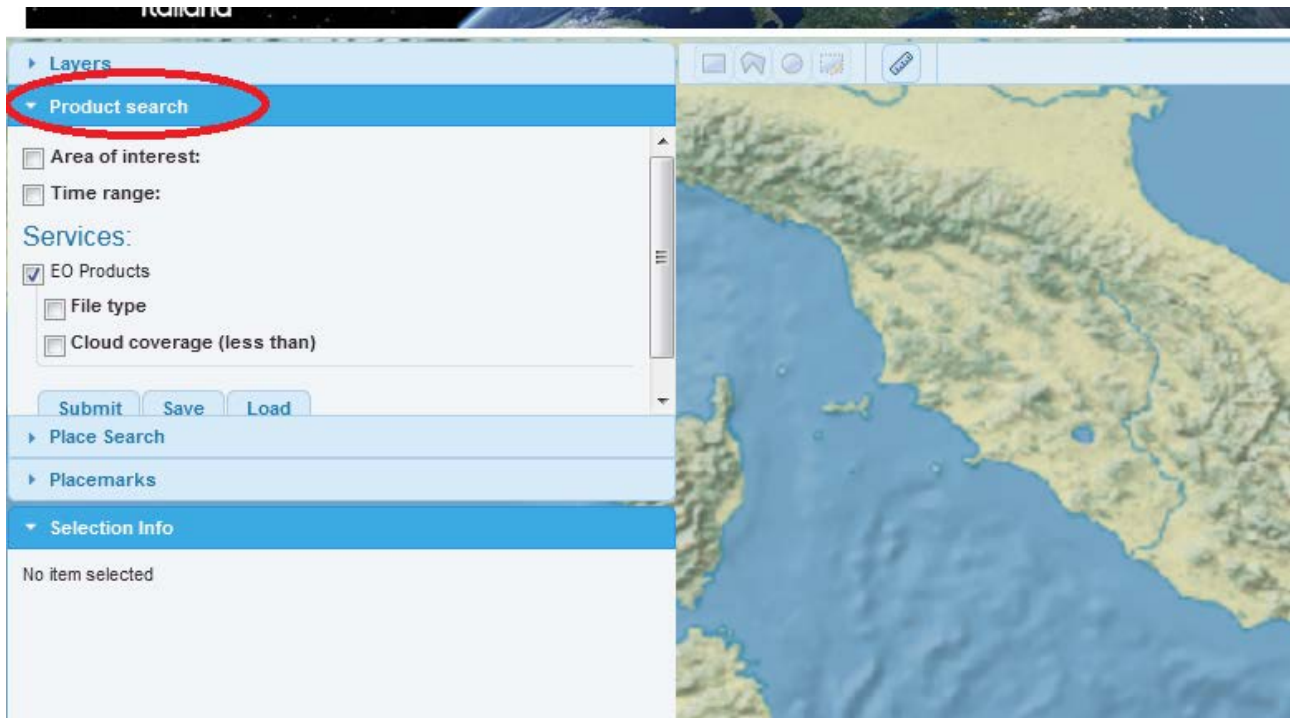


Figure 4-2: Catalogue main page

He can use the **Area of Interest** to perform catalogue queries based on the geographic area (using in this case a a rectangular box)

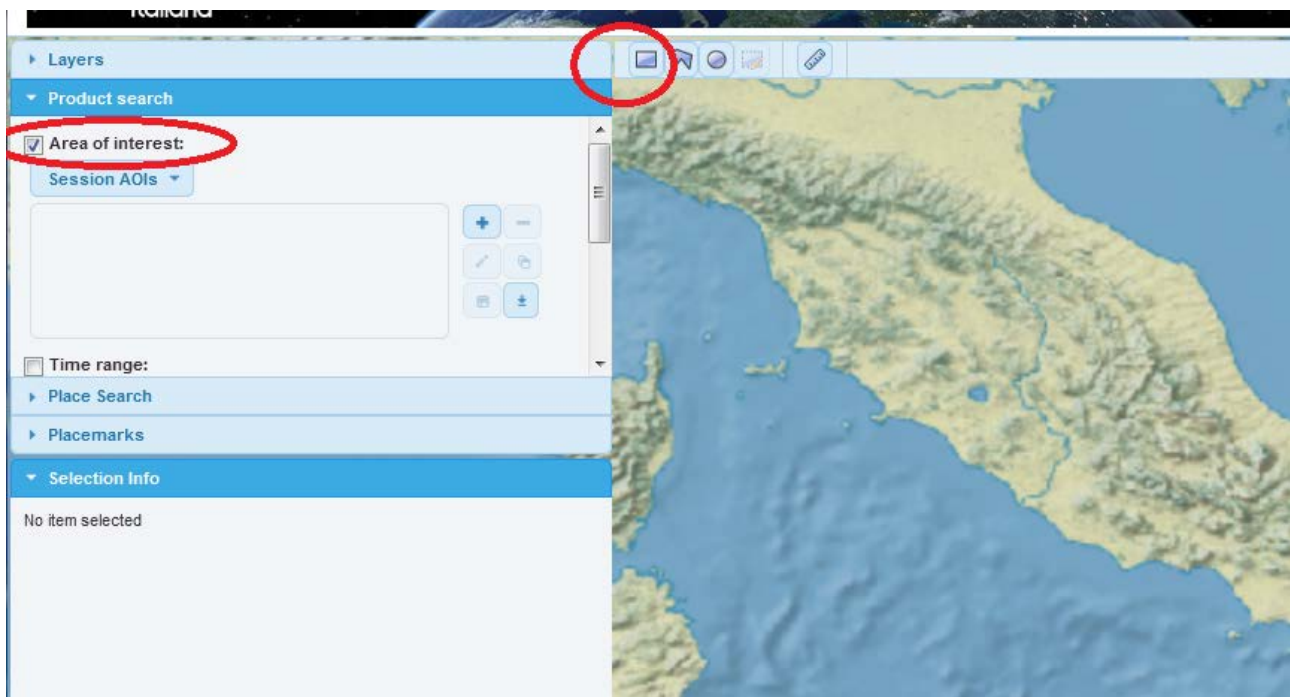


Figure 4-3: Area of Interest based query

Search area dragging can be closed performing a **right mouse click**



Figure 4-4: Area of Interest creation

User can use also an acquisition time window based queries (**Time range**)

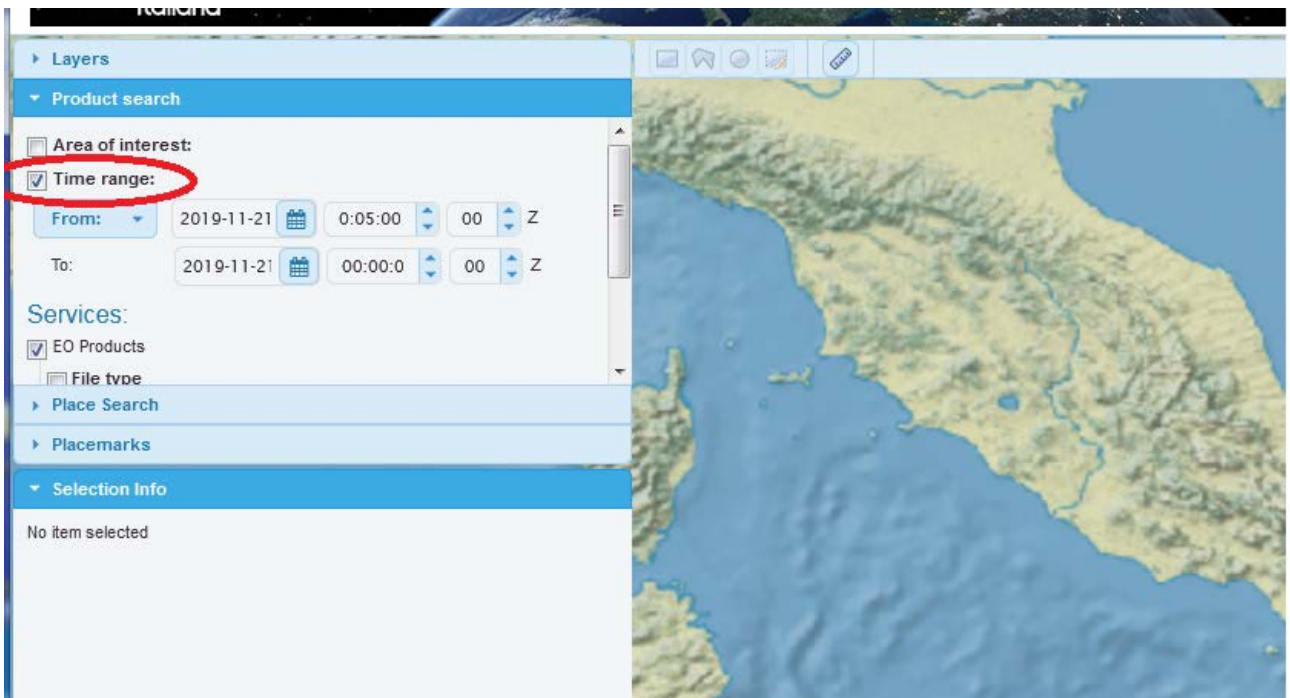


Figure 4-5: Time range based query

The query is executed after the pressing of the **Submit** button in center left side

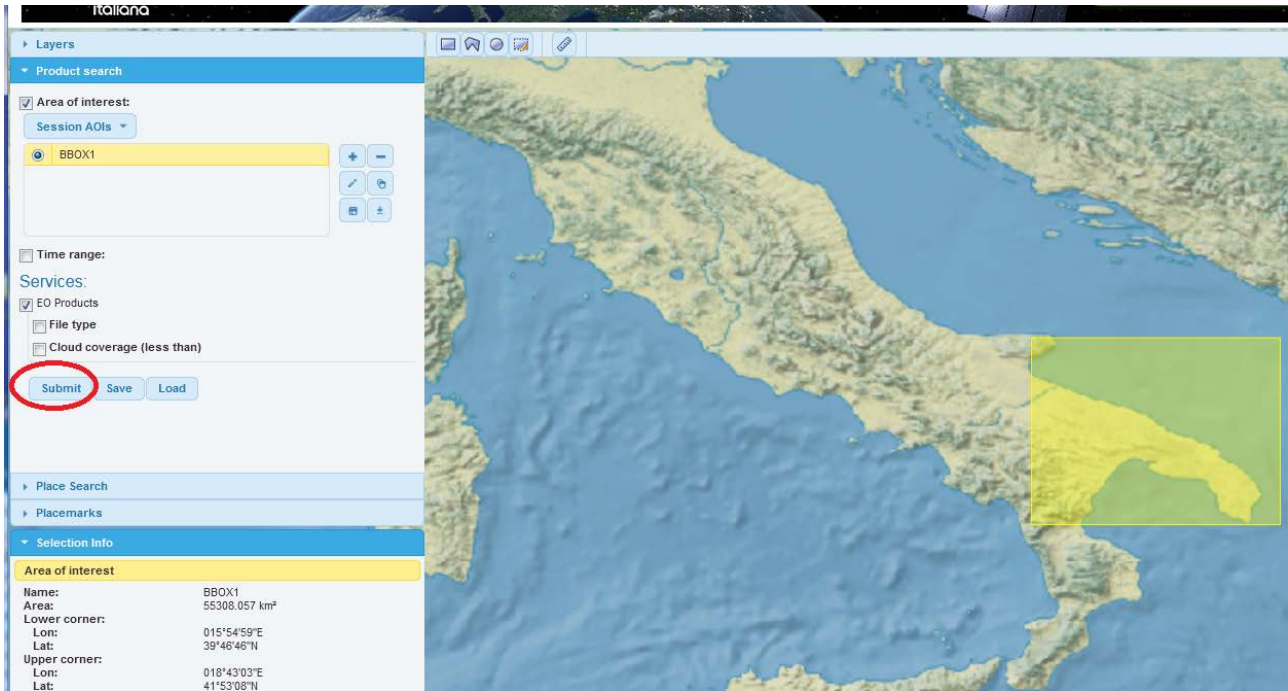


Figure 4-6: Submitting the query

The system shows all the products matching the query

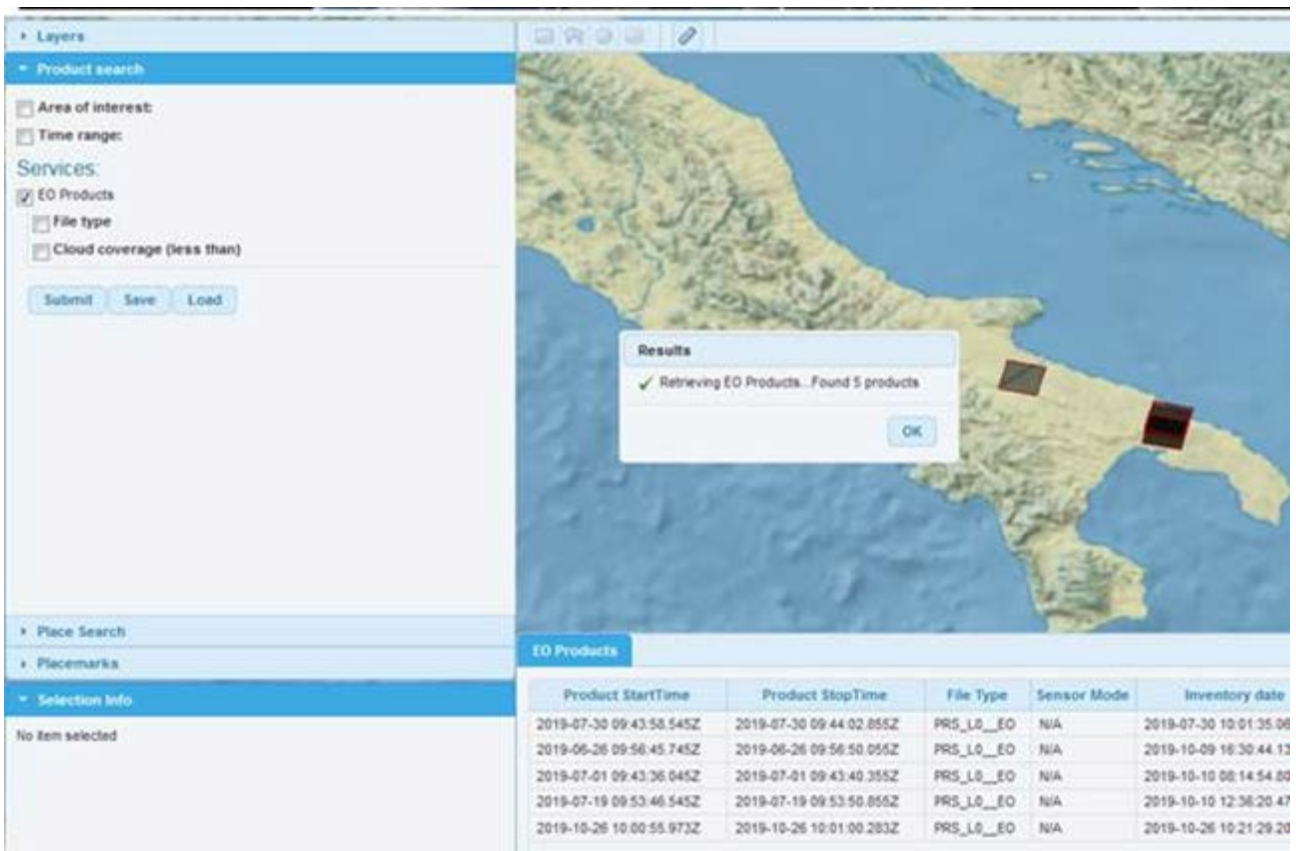
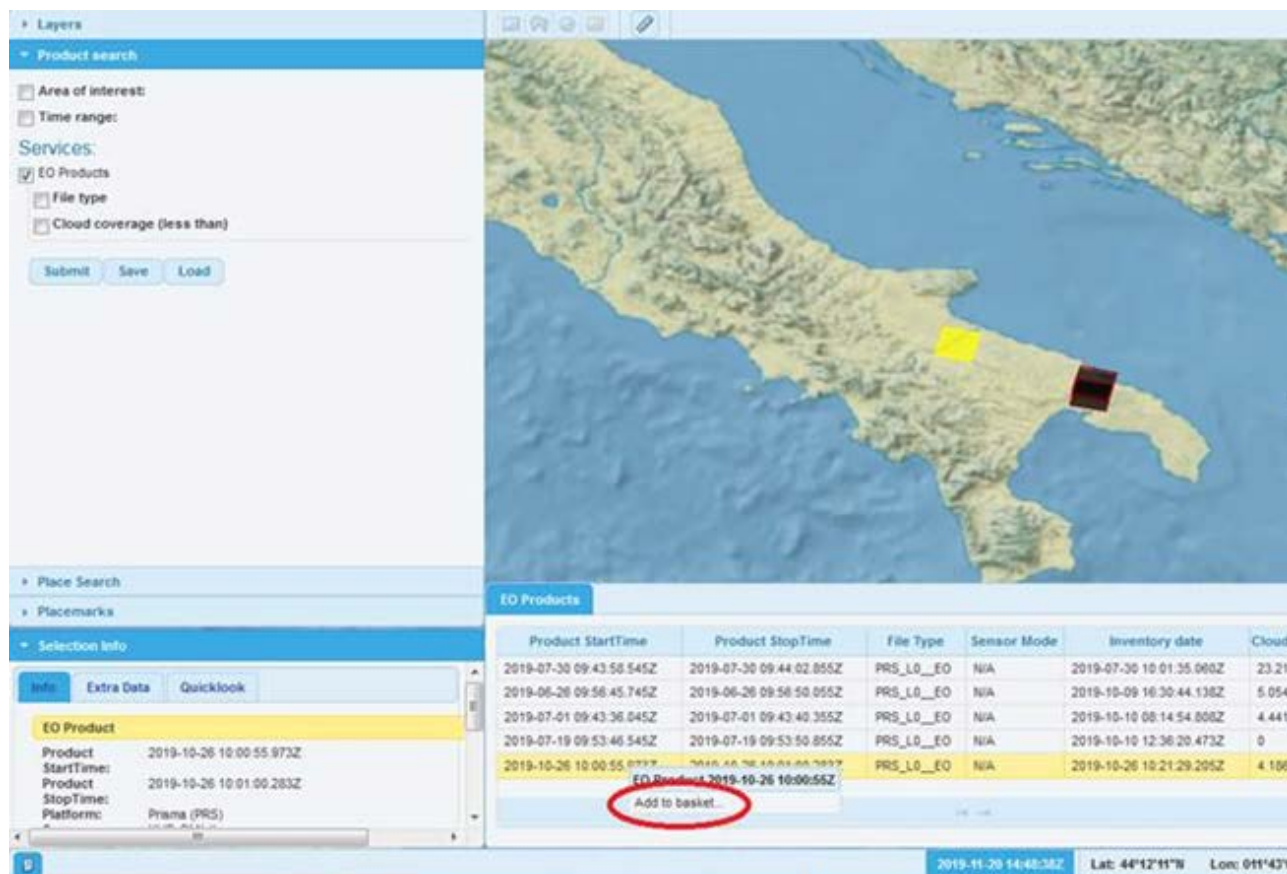


Figure 4-7: Query results

After highlighting the desired product by clicking on it with the mouse (left button) within the area of the product displayed on the map or on the corresponding line in the list, **click on the line of the product in the list with the right button** and when the menu appears, click (with the left button) on **Add to basket** icon which appears



Product StartTime	Product StopTime	File Type	Sensor Mode	Inventory date	Cloud
2019-07-30 09:43:58.545Z	2019-07-30 09:44:02.855Z	PRS_L0_EO	NIA	2019-07-30 10:01:55.060Z	23.211
2019-06-26 09:56:45.745Z	2019-06-26 09:56:50.055Z	PRS_L0_EO	NIA	2019-10-09 16:30:44.138Z	5.0541
2019-07-01 09:43:36.045Z	2019-07-01 09:43:40.355Z	PRS_L0_EO	NIA	2019-10-10 08:14:54.808Z	4.4411
2019-07-19 09:53:46.545Z	2019-07-19 09:53:50.855Z	PRS_L0_EO	NIA	2019-10-10 12:36:20.473Z	0
2019-10-26 10:00:55.055Z	2019-10-26 10:00:55.055Z	PRS_L0_EO	NIA	2019-10-26 10:21:29.205Z	4.1094

Figure 4-8: Selection of the images to be processed

It will appear the menu in which the User can choose the product type (L1, L2B, L2C, L2D) and other processing parameters (binning etc.).

Here it is a very brief description of the available products

- Level 1 (HYP/PAN) radiometrically corrected and calibrated radiance data in physical units. This product provides: Top-of-Atmosphere Spectral Radiance; Cloud mask; Sun-glint Mask; Calibration and characterization data used and Classification Mask;
- Level 2B - Geolocated at Ground Spectral Radiance Product (HYP/PAN);
- Level 2C - Geolocated At-surface Reflectance Product (HYP/PAN). This product includes Aerosol Characterization Product (VNIR), Water Vapour Map Product (HYP) and Cloud Characterization;
- Level 2D - Geocoded version of the level 2c products (HYP PAN).

The selection is finalized by pressing on **Continue**.

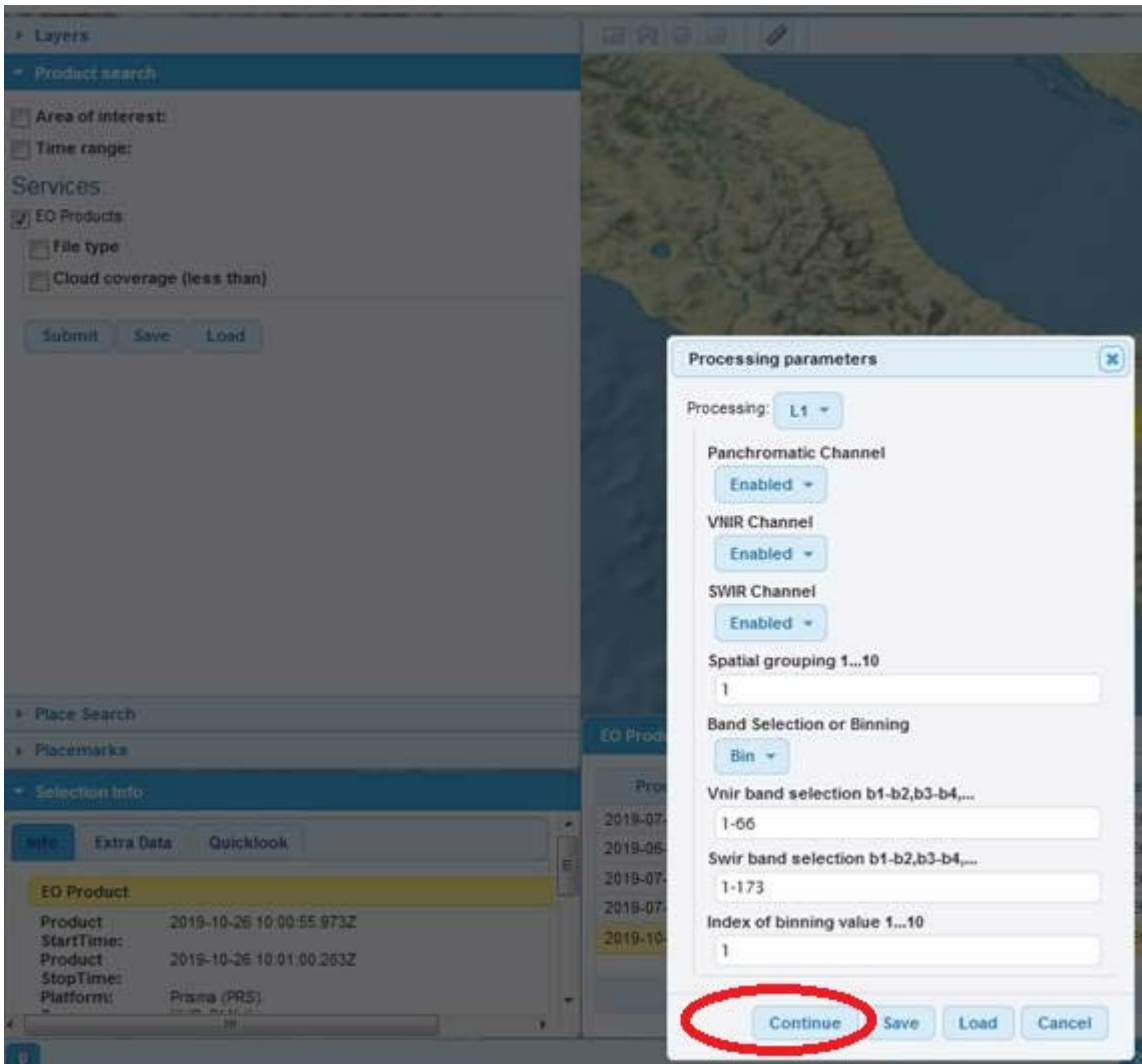
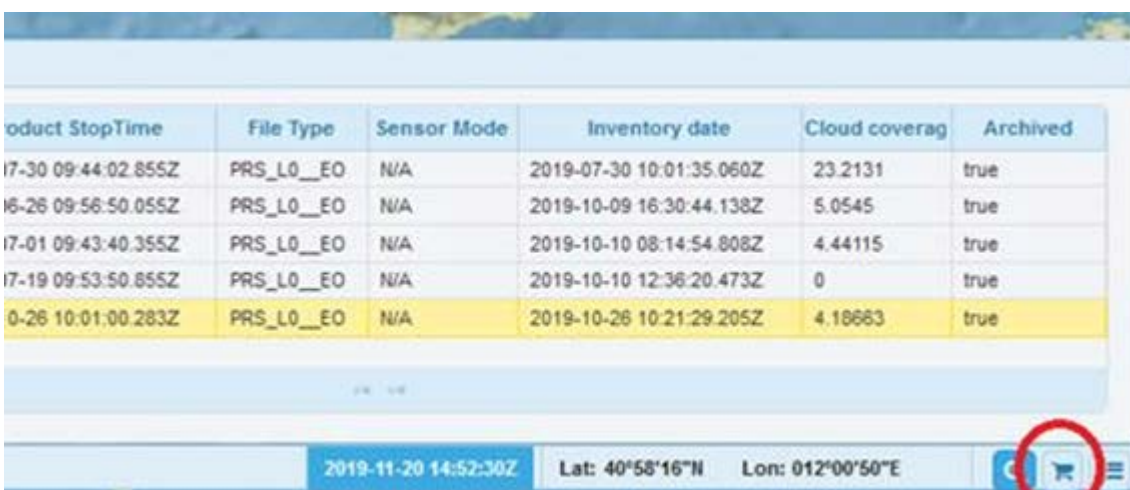


Figure 4-9: Selection of the type of product

To complete the ordering of the product, some further steps are needed. The User has to press the **Cart** icon at the bottom right



The screenshot shows a table of product query results. The table has the following columns: 'Product StopTime', 'File Type', 'Sensor Mode', 'Inventory date', 'Cloud coverag', and 'Archived'. The data rows are as follows:

Product StopTime	File Type	Sensor Mode	Inventory date	Cloud coverag	Archived
17-30 09:44:02.855Z	PRS_L0__EO	N/A	2019-07-30 10:01:35.060Z	23.2131	true
16-26 09:56:50.055Z	PRS_L0__EO	N/A	2019-10-09 16:30:44.138Z	5.0545	true
17-01 09:43:40.355Z	PRS_L0__EO	N/A	2019-10-10 08:14:54.808Z	4.44115	true
17-19 09:53:50.855Z	PRS_L0__EO	N/A	2019-10-10 12:36:20.473Z	0	true
10-26 10:01:00.283Z	PRS_L0__EO	N/A	2019-10-26 10:21:29.205Z	4.18663	true

At the bottom of the interface, the 'Cart' icon is circled in red.

Figure 4-10: From query results to ordering

The basket view is presented, in which the desired orders could be start processing by clicking the **Order**

Item icon on bottom left

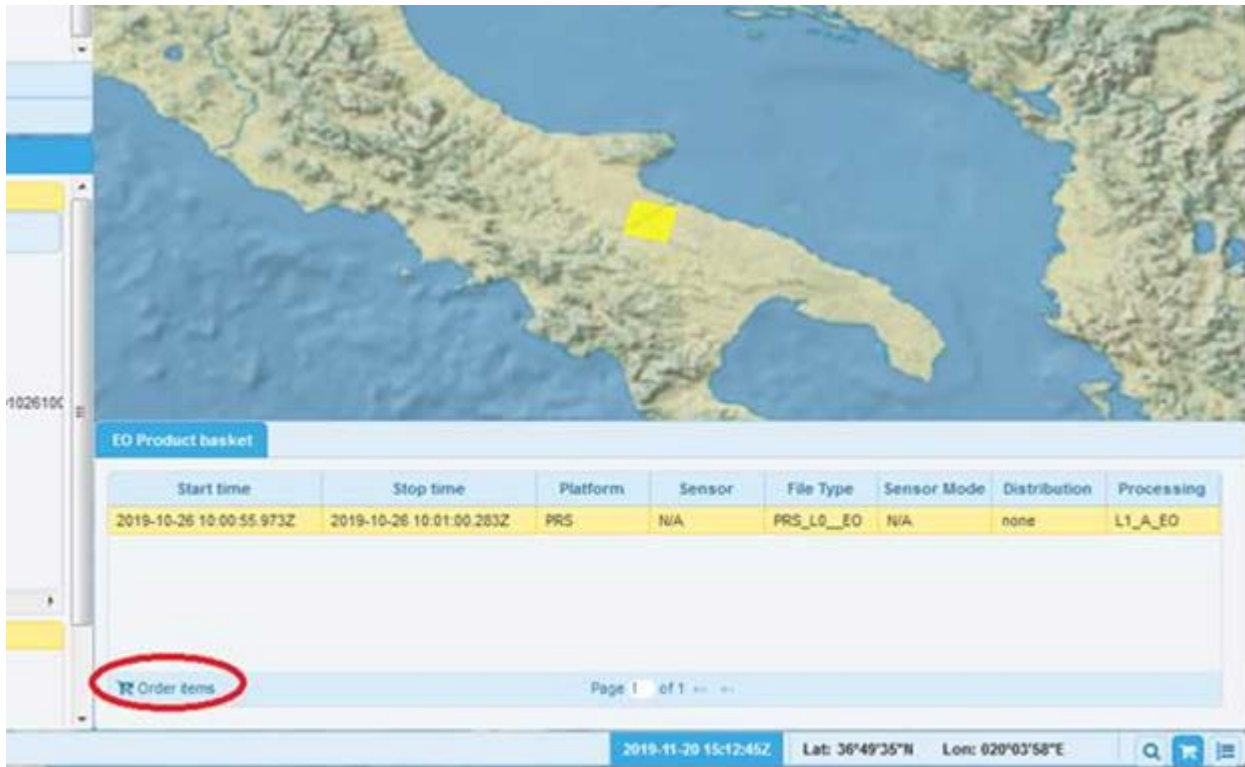


Figure 4-11: basket view

The order is finalized when the **Order successfully submitted** window appears

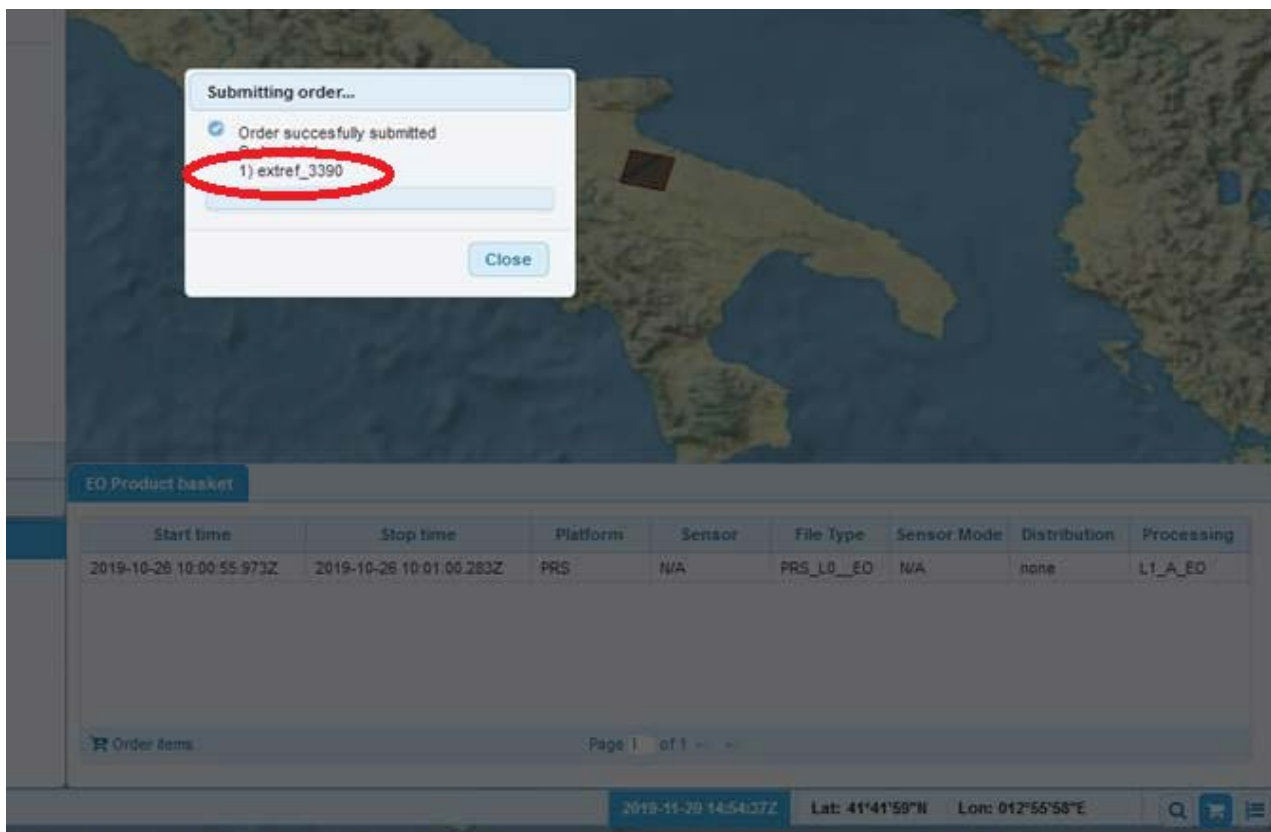


Figure 4-12: Order successfully submitted

The Order ID number (extref_NNNN) is the same that will appear in the Object field of the email sent by the system and containing the link to download the product

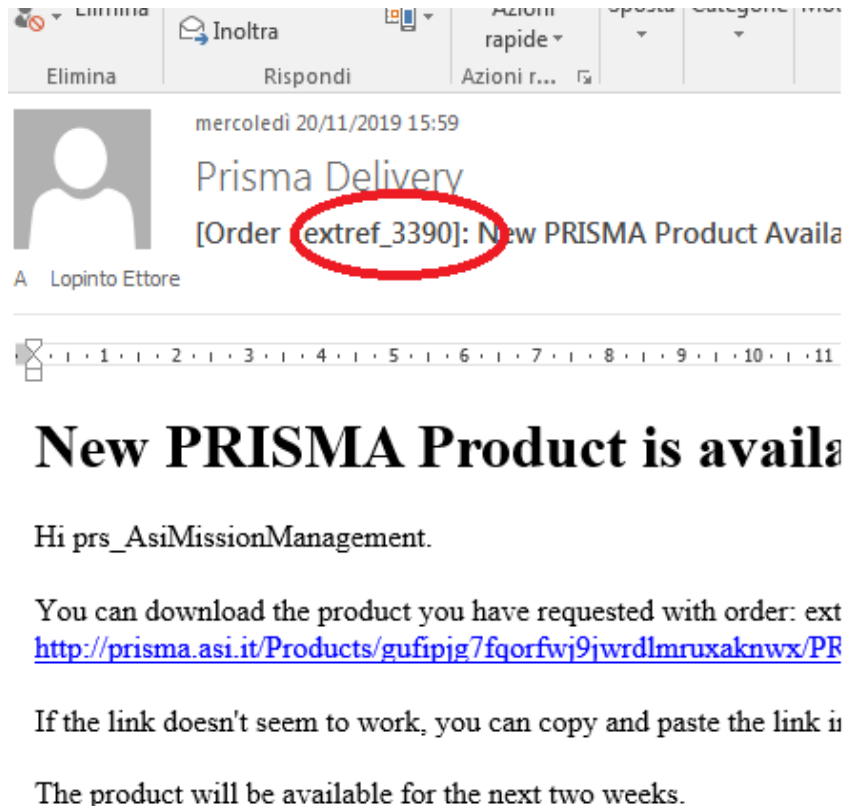


Figure 4-13: Email with the link for downloading the product

The history of the user orders is accessed by using the **List** icon in the bottom right

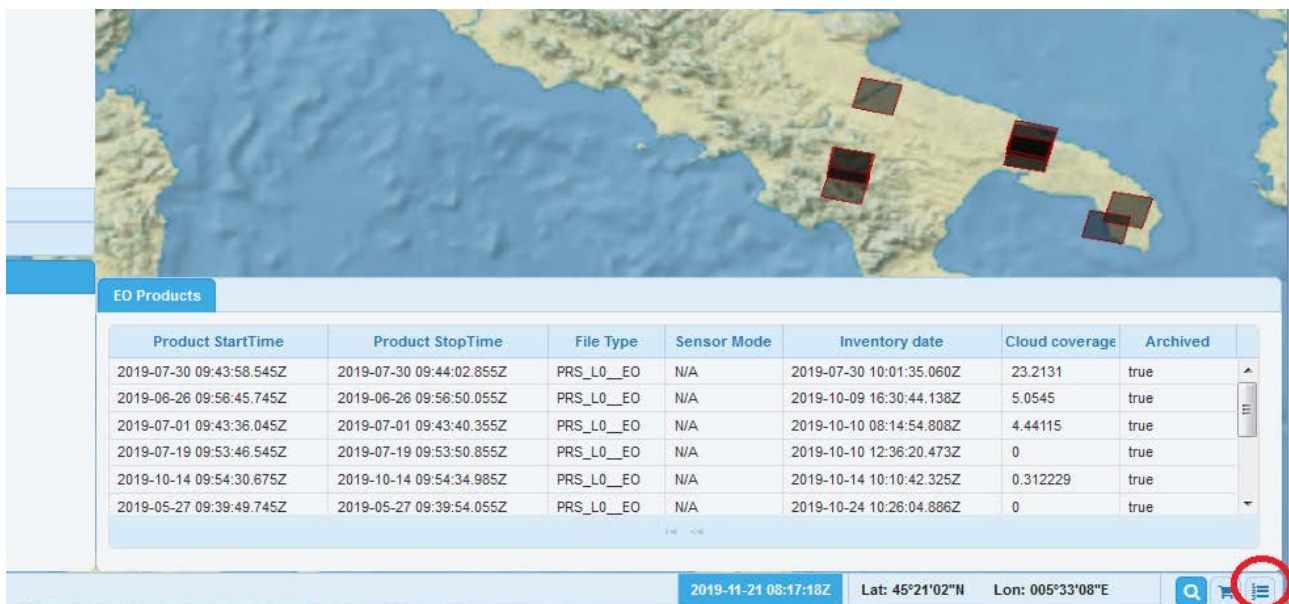


Figure 4-14: Order history

4.2 REQUEST OF ACQUISITION OF NEW IMAGES

For new image request, User shall select from the main page the **New Acquisition** feature and then **Open**

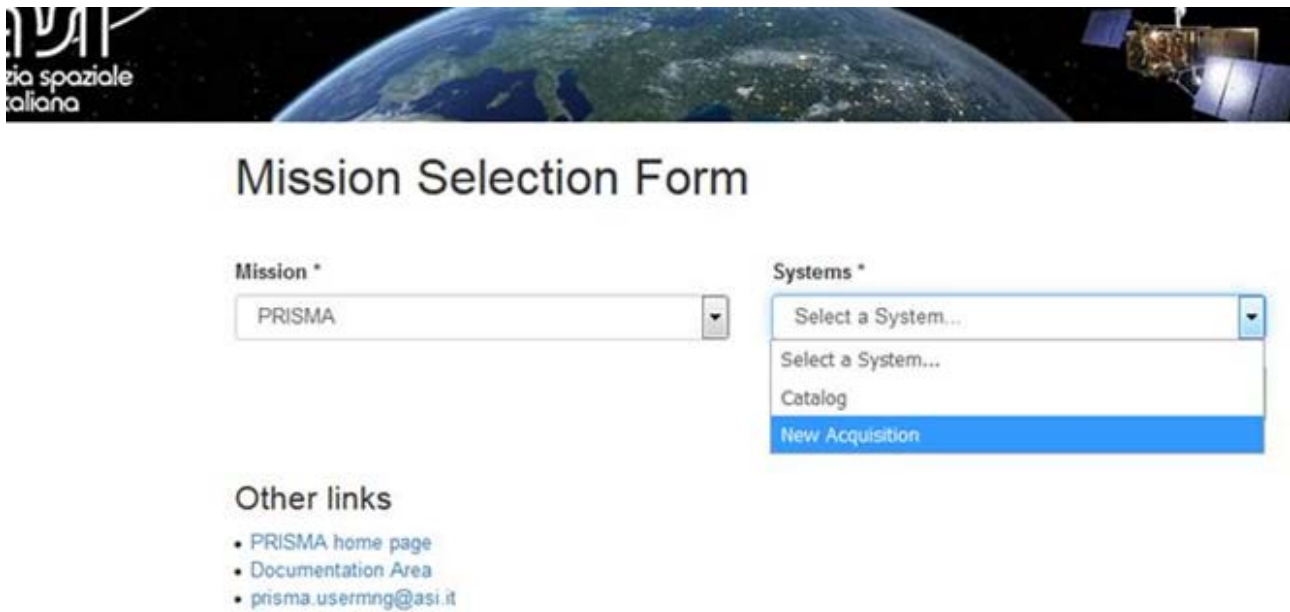
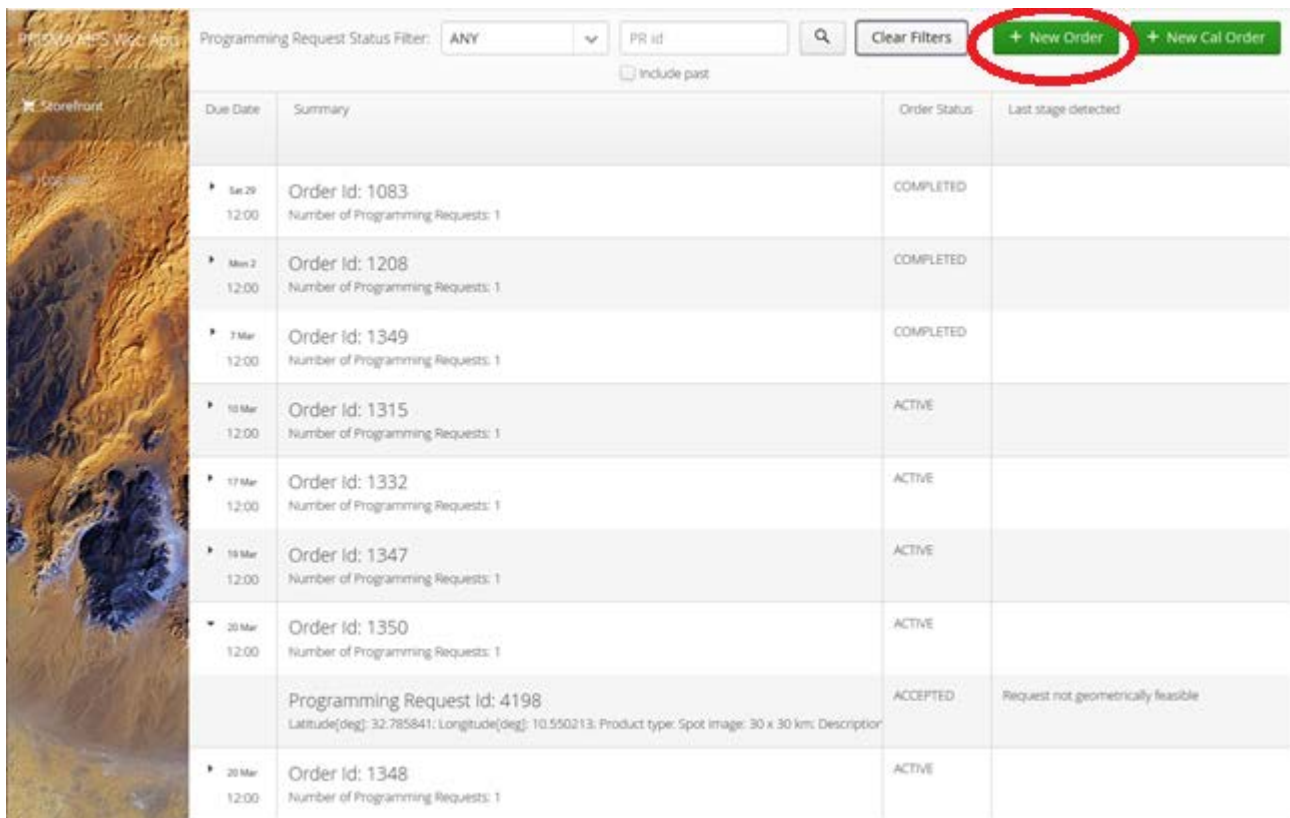


Figure 4-15: PRISMA Catalog and new Acquisition selection page

It will appear the list of the previous requested acquisitions (or none if it's the first time with PRISMA) and with **New order** can be requested new acquisitions



Due Date	Summary	Order Status	Last stage detected
16 Mar 12:00	Order Id: 1083 Number of Programming Requests: 1	COMPLETED	
16 Mar 12:00	Order Id: 1208 Number of Programming Requests: 1	COMPLETED	
7 Mar 12:00	Order Id: 1349 Number of Programming Requests: 1	COMPLETED	
10 Mar 12:00	Order Id: 1315 Number of Programming Requests: 1	ACTIVE	
17 Mar 12:00	Order Id: 1332 Number of Programming Requests: 1	ACTIVE	
18 Mar 12:00	Order Id: 1347 Number of Programming Requests: 1	ACTIVE	
20 Mar 12:00	Order Id: 1350 Number of Programming Requests: 1	ACTIVE	
	Programming Request Id: 4198 Latitude(deg): 32.785841; Longitude(deg): 10.550213; Product type: Spot image: 30 x 30 km; Description	ACCEPTED	Request not geometrically feasible
20 Mar 12:00	Order Id: 1348 Number of Programming Requests: 1	ACTIVE	

Figure 4-16: New Order main page (list)

The bare minimum to program a new acquisition is to specify the latitude and longitude of the image centre (decimal degrees, longitude first), the maximum permitted percentage of cloud coverage and the type of product which shall be generated at image acquisition completion. The order validity time (minimum one day, maximum 29 days, the satellite complete orbital period) can also be chosen (default period is two weeks by the ordering day). Press **Review Order** at the bottom right at the end.

PRISMA MPS Web App

Home

Log out

QUOTA: 13.0 OVERALL QUOTA: 1997.0

VALIDITY TIME RANGE

Start epoch: 29/01/20 13:00 Stop epoch: 30/01/20 13:00

AREA OF INTEREST

Spot image: 30 x 30 km Quota: 1

Longitude [deg] 12.4923730 Latitude [deg] 41.8902510 Cloud Coverage [%] 20.00

LookAngle Min -21.0000000 LookAngle Max 21.0000000 MinSunZenithAngle .0000000 MaxSunZenithAngle 70.0000000

Description

Rome, Italy


Contextual Processing Order

None

- None
- L1_A_EO
- L2B
- L2C
- L2D

MAP VIEWER

Map Satellite



Google Imagery ©2020 TerraMetrics 5 km Terms of Use Report a map error

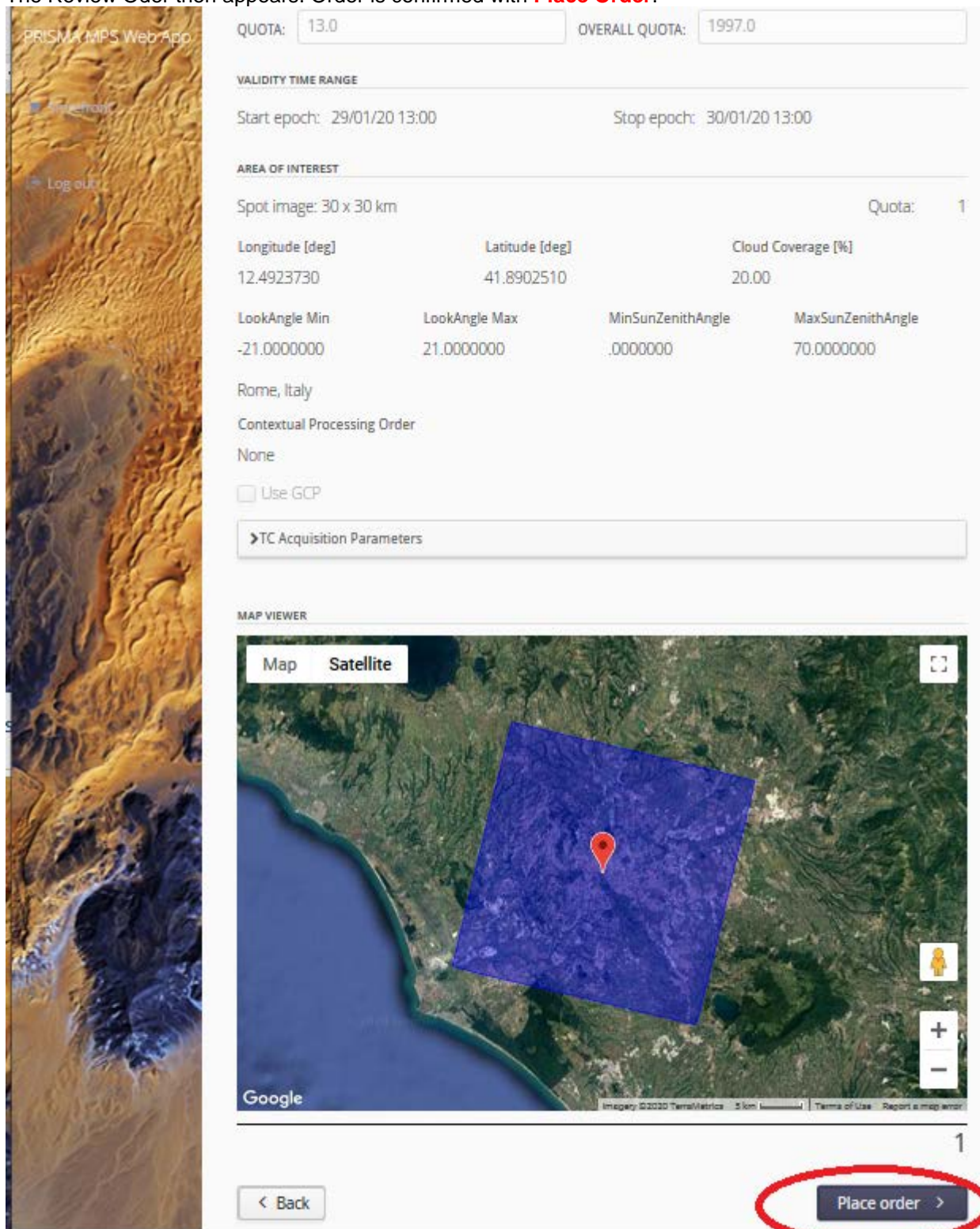
1

+ Add item

Cancel Review order >

Figure 4-17: New Order creation

The Review Order then appears. Order is confirmed with **Place Order**.



PRISMA MPS Web App

QUOTA: 13.0 OVERALL QUOTA: 1997.0

VALIDITY TIME RANGE

Start epoch: 29/01/20 13:00 Stop epoch: 30/01/20 13:00

AREA OF INTEREST

Spot image: 30 x 30 km Quota: 1

Longitude [deg]	Latitude [deg]	Cloud Coverage [%]
12.4923730	41.8902510	20.00

LookAngle Min	LookAngle Max	MinSunZenithAngle	MaxSunZenithAngle
-21.0000000	21.0000000	.0000000	70.0000000

Rome, Italy

Contextual Processing Order

None

Use GCP

> TC Acquisition Parameters

MAP VIEWER

Map Satellite

Google

Imagery ©2020 TerraMetrics 5 km Terms of Use Report a map error

1

< Back

Place order >

Figure 4-18: New Order review

After that the order is transferred to the system with the initial state (SUBMITTED)

PRISMA MPS Web App

Storefront
Log out

#1126 SUBMITTED

VALIDITY TIME RANGE

Start epoch: 29/01/20 13:00 Stop epoch: 30/01/20 13:00

AREA OF INTEREST

Spot image: 30 x 30 km Quota: 1

Longitude [deg]	Latitude [deg]	Cloud Coverage [%]
12.4923730	41.8902510	20.00

LookAngle Min	LookAngle Max	MinSunZenithAngle	MaxSunZenithAngle
-21.0000000	21.0000000	.0000000	70.0000000

Rome, Italy

Contextual Processing Order


None

Use GCP

TC Acquisition Parameters

MAP VIEWER

Map Satellite



Google Imagery ©2020 TerraMetrics 5 km Terms of Use Report a map error

1

History

1/28/20 12:08 PM by Ettore Lopinto
Order 1126 SUBMITTED.

Figure 4-19: New Order submission

The New Acquisition home page can be reached pressing on **Storefront**

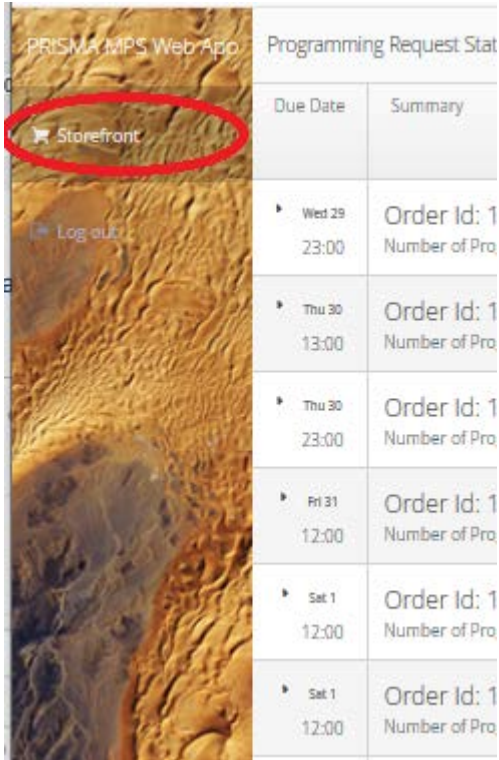


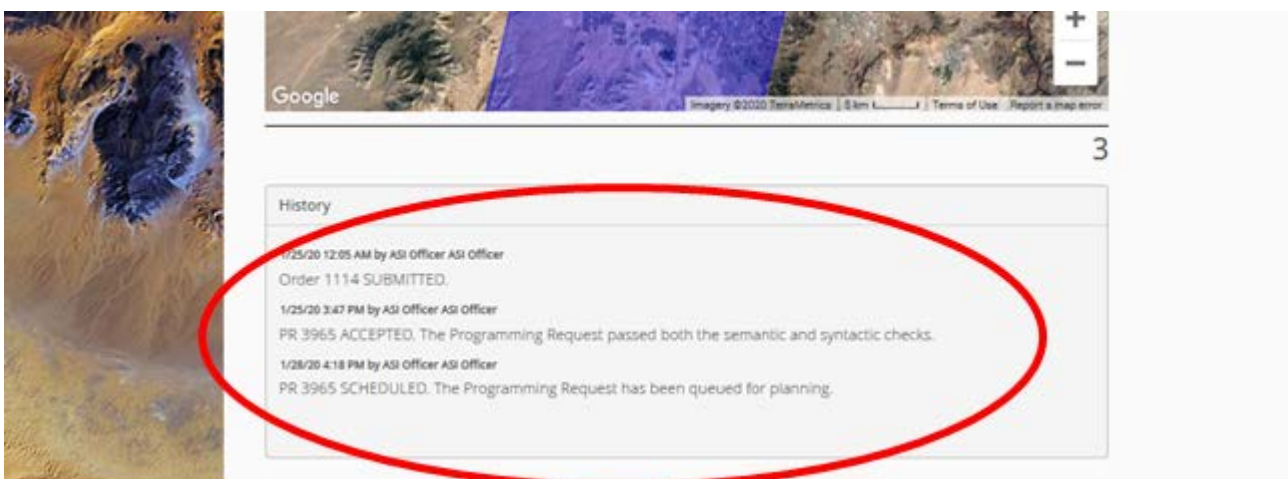
Figure 4-20: Returning to the new order main page

The evolution of the orders during the time can be followed from the New Acquisition main page.

Thu 30 13:00	Order Id: 1126 Number of Programming Requests: 1	SUBMITTED	
	Programming Request Id: 3975 Latitude(deg): 41.890251; Longitude(deg): 12.492373; Product type: Spot image: 30 x 30 km; Description: Rome, Italy; Quota: 1	SUBMITTED	null

Figure 4-21: New Order detail

The History of each order states can be followed clicking on the Order Id from the New Acquisition main page.



History

- 1/25/20 12:05 AM by ASI Officer ASI Officer
Order 1114 SUBMITTED.
- 1/25/20 3:47 PM by ASI Officer ASI Officer
PR 3965 ACCEPTED. The Programming Request passed both the semantic and syntactic checks.
- 1/28/20 4:18 PM by ASI Officer ASI Officer
PR 3965 SCHEDULED. The Programming Request has been queued for planning.

Figure 4-22: Order History

If you want search among your orders and Programming Requests, you can use the PR filter function

PRISMA MPS Web App

Programming Request Status Filter: ANY

Include past

Due Date	Summary	Order Status	Last stage detected
20 Mar 12:00	Order Id: 1350 Number of Programming Requests: 1	ACTIVE	
	Programming Request Id: 4198 Latitude[deg]: 32.785841; Longitude[deg]: 10.550213; Product type: Spot image: 30 x 30 km; Description	ACCEPTED	Request not geometrically feasible

Figure 4-23: Programming Requests filter

For clearing any filters use the Clear Filter button

PRISMA MPS Web App

Programming Request Status Filter: ANY

Include past

Due Date	Summary	Order Status	Last stage detected
Sat 29 12:00	Order Id: 1083 Number of Programming Requests: 1	COMPLETED	
Mon 2 12:00	Order Id: 1208 Number of Programming Requests: 1	COMPLETED	
7 Mar 12:00	Order Id: 1349 Number of Programming Requests: 1	COMPLETED	
10 Mar 12:00	Order Id: 1315 Number of Programming Requests: 1	ACTIVE	
17 Mar 12:00	Order Id: 1332 Number of Programming Requests: 1	ACTIVE	
19 Mar 12:00	Order Id: 1347 Number of Programming Requests: 1	ACTIVE	
20 Mar 12:00	Order Id: 1350 Number of Programming Requests: 1	ACTIVE	
	Programming Request Id: 4198 Latitude[deg]: 32.785841; Longitude[deg]: 10.550213; Product type: Spot image: 30 x 30 km; Description	ACCEPTED	Request not geometrically feasible
20 Mar 12:00	Order Id: 1348 Number of Programming Requests: 1	ACTIVE	

Figure 4-24: Clear filter

5. PRISMA SYSTEM OVERVIEW

The PRISMA system includes a satellite placed in a suitable LEO sun synchronous orbit optimized to comply the mission performances, like data acquisition, relook time and coverage.

The image acquisition will be performed by the hyperspectral/panchromatic instrument placed onboard the satellite.

The satellite will be in the small size class, with an operational lifetime of at 5 years, and will be composed of:

- a Platform
- a Payload, consisting in a hyperspectral / Panchromatic instrument
- a Payload Data Handling and Transmission subsystem (PDHT)

During routine operations, the satellite will communicate with a ground segment located in Italy, in particular:

- a Satellite and Mission Control, in charge of performing all the functions needed to plan and control the satellite operations, and monitor the satellite health status. It can be subdivided in:
 - Mission Control Centre (MCC)
 - Satellite Control Centre (SCC)
- An Image Data Handling System (IDHS), in charge of performing all the chain from the acquisition of images data from the satellite, their processing, cataloguing and archiving, as well as the delivery of PRISMA products to the end Users.

The system provides interface to the Users for acquisition requests, as well as for catalogue browsing and product ordering, which are managed as follows:

- the MCC handles the requests of acquisition of images
- the IDHS provides catalogue searching functions, manages the request of processing of archived products, delivering them, once available, through ftp.

During routine operations, all the telemetry and telecommand data related to the satellite management will be transmitted by a bi-directional S-band link to a ground station located in Fucino.

On the other side the payload data will be downloaded by an unidirectional X-band link to a ground station located in Matera.

The launch segment has been in charge to place the PRISMA satellite in orbit by a “small class” dedicated launcher which will inject the satellite directly in its final orbit. The selected launcher was VEGA.

The data acquisition procedure can be summarized as following. The nominal satellite attitude is sun-pointing for power production reason. Once the satellite is over the required area target its attitude will be modified to Earth pointing and the HYP/PAN payload will be activated. The acquired data are recorded into the PDHT memory and downloaded to the X-Band ground station as soon as it is possible.

In the following figure the mission architecture is presented:

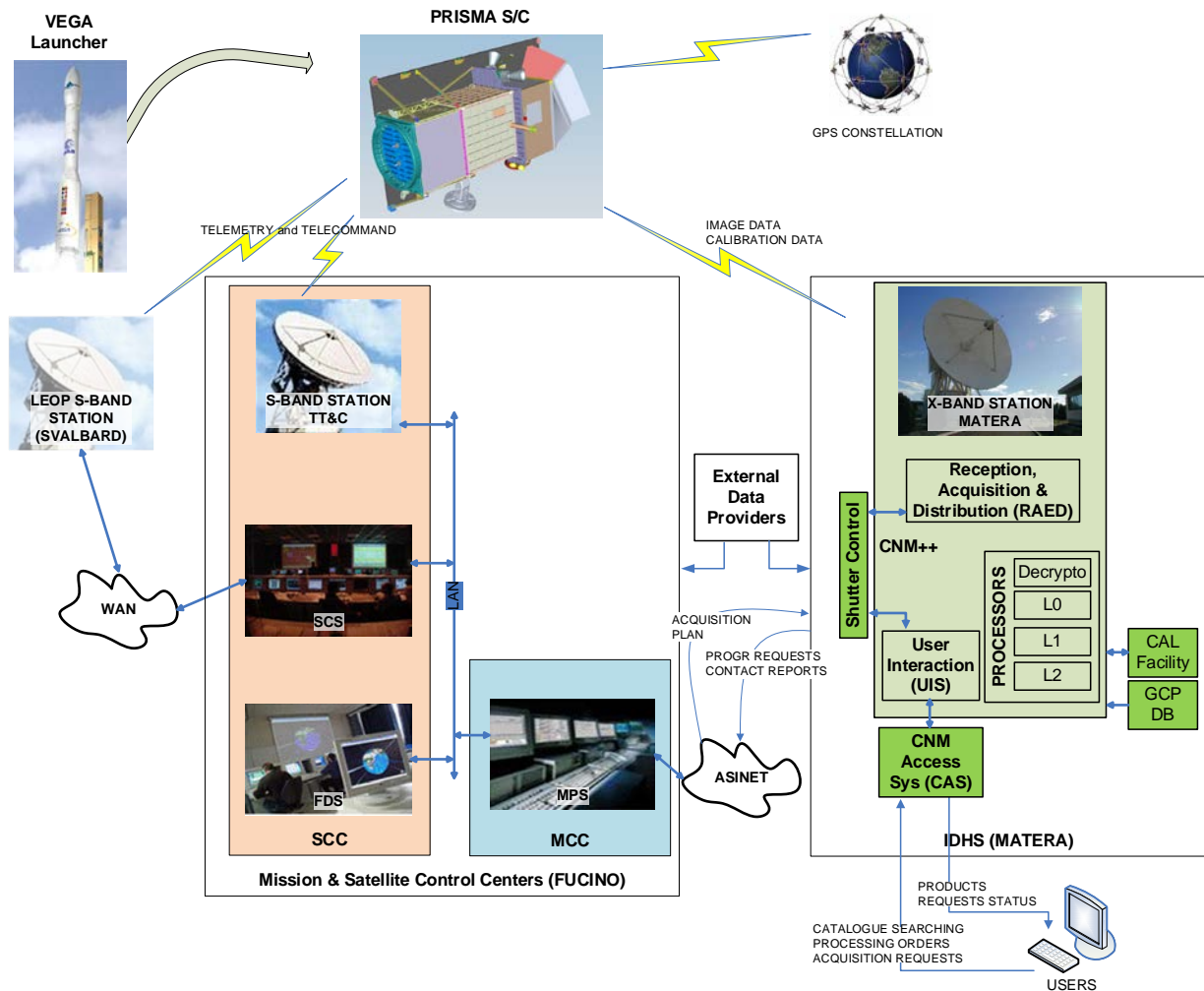


Figure 5-1: PRISMA mission architecture

The high level mission operational concept is summarized here for context:

- End-users represent the entity, outside the PRISMA system, which make the image order and obtain the system products. They will view the available contents of the mission archives, and place orders for system products.
- If the data required for the generation of the products does not exist in the archive, an acquisition request could be generated. The acquisition requests from the users will be integrated according to an agreed prioritization policy, and the resulting acquisition plan will be used to control the spacecraft in acquiring the desired data.
- Acquired data will be down-linked to reception station, where it will be archived and the local catalogue updated. The reception station will have its own reception, archiving, cataloguing, processing and delivery functionality for the standard products generated by the System.
- Those standard products will be provided to the requesting users.

PRISMA provides the following basic services to users community:

- HYP/PAN Images acquisition all over the World (performances guaranteed only over the Primary Area of Interest, between -70 degree and 70 degree latitudes)
- HYP/PAN archived products ordering and delivery
- HYP/PAN archived products customized processing

and the following auxiliary services:

- User registration
- Internet based access to mission resources and products
- Help desk with support via faq and e-mail

PRISMA products to be delivered to user community are:

- Level 1 products: TOA (Top Of Atmosphere) radiometrically and geometrically calibrated HYP and PAN radiance images
- Level 2 products: Geolocated (L2B, L2C) and Geocoded (L2D) Atmospherically corrected HYP and PAN images; atmospheric constituents maps (aerosols, water vapour, thin cloud optical thickness) (for L2C and L2D products)

In the following figure is reported the mission context.

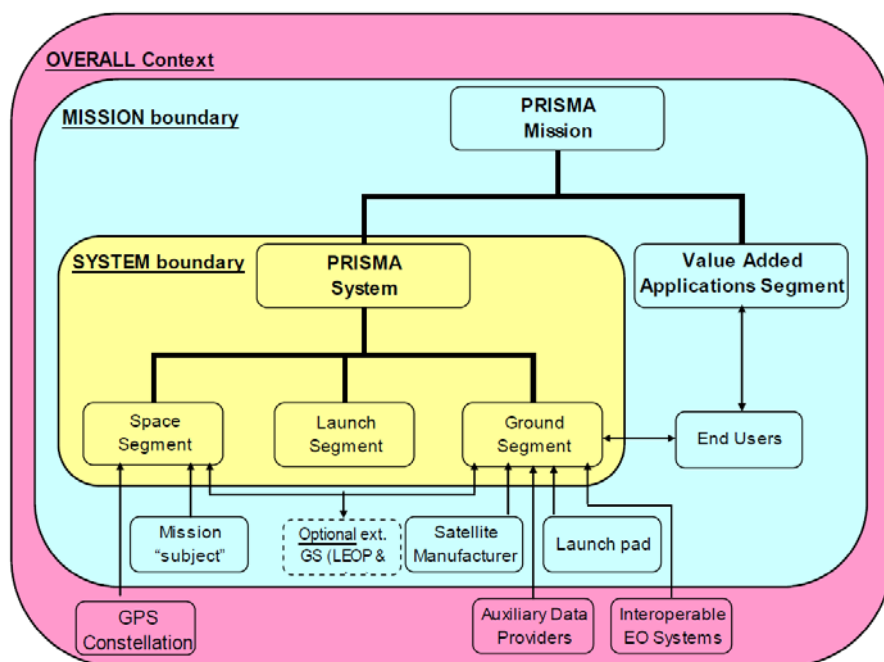


Figure 5-2: PRISMA mission block diagram

The PRISMA Mission is externally interfaced with:

- the GPS constellation, used by the space segment for position determination
- the "Auxiliary data provider" used by the ground segment to obtain the GCP data, the DEM/DTM, the atmospheric features/profile data, the ground truth measurements data

The mission is composed by several elements:

- the System, which comprises the space segment, the ground segment and the launch segment, described in the following paragraphs
- other elements, such as the mission "subject", which is the area observed by the satellite payload, the external assets, which represent the entities, outside the PRISMA system, which will have a part to realize the mission like the launch pad, the satellite manufactures, the End Users, etc.
- the optional external GS which can give support to the mission during the LEOP phase

5.1 THE PRISMA SATELLITE

The PRISMA Satellite is mainly composed by the Platform, the electro-optical Payload and the Payload Data Handling and Transmission subsystem (PDHT). The PRISMA Payload is composed by an Imaging Spectrometer (or Hyperspectral Imager), able to take images in a continuum of spectral bands ranging from 400 to 2500 nm, and a medium resolution Panchromatic Camera. The PRISMA Payload is in charge of the image data acquisition. All the data generated by the Payload are transmitted by a dedicated link to the PDHT. This unit will provides the memory for the temporary storage of the images and ancillary data, thanks to its internal memory. Besides the storage functionality the PDHT will be in charge of the data transmission, thanks to its X-band transmitter, to the dedicated ground station. The Payload does not include any pointing device, therefore any off-nadir (across-track or along track) acquisition has to be performed through platform rotation. Nadir is when the satellite is looking straight down. High off-nadir angles can mean lower quality in terms of geolocation accuracy and resolution, while tall objects can conceal targets. There is not any design limitation

for the instrument to acquire off-nadir images for Satellite roll maneuvers.

The PRISMA Hyperspectral sensor utilizes prisms to obtain the dispersion of incoming radiation on a 2-D matrix detector so to acquire several spectral bands of the same strip on ground. The “instantaneous” spectral and spatial dimensions (across track) of the spectral cube are given directly by the 2-D detector, while the “temporal” dimension (along track) is given by the satellite motion. This image scanning concept is defined as “Pushbroom”.

The function of the PRISMA Payload is to acquire images of the Earth simultaneously in contiguous spectral bands, spanning the wavelength range 400 to 2500 nm using a push broom mode of operation. The image data is to be collected, formatted to CCSDS standards and sent Satellite on-board mass memory and downlink units.

The key Payload technical features can be summarized as follows:

Orbit Altitude Reference	615 km
Swath / FOV	30 km / 2.77°
GSD	Hyperspectral: 30 m PAN: 5 m
Spatial Pixels	Hyperspectral: 1000 PAN: 6000
Pixel Size	Hyperspectral: 30x30 µm PAN: 6.5x6.5 µm
Spectral Range	VNIR: 400 – 1010 nm (66 bands) SWIR: 920 – 2500 nm (173 bands) PAN: 400 – 700 nm
Spectral Sampling Interval (SSI)	≤ 12 nm
Spectral Width	≤ 12 nm
Cross-Track Variation of Centre Wavelength (Smile)	< +/- 0.1 SSI
Spatial registration of spectral sampling (incl. Keystone)	≤ 0.1 pixel
Spectral Calibration Accuracy	+/-0.1 nm
Radiometric Quantization	12 bit
VNIR SNR (Nominal)	>200:1
SWIR SNR (Nominal)	>100:1
PAN SNR (Nominal)	> 240:1
Absolute Radiometric Accuracy (Nominal)	Better than 5%
Aperture Diameter	210 mm
MTF@ Nyquist Frequency (Nominal)	VNIR/SWIR along track >0.18 VNIR/SWIR across track > 0.34 PAN along track >0.1 PAN across track >0.2
Cooling System	Passive Radiator
Lifetime	5 years

Table 1 Key Payload technical features.

The PRISMA Hyperspectral sensor utilizes prisms to obtain the dispersion of incoming radiation on a 2-D matrix detector so to acquire several spectral bands of the same strip on ground. The “instantaneous” spectral and spatial (across track) dimensions of the spectral cube are given directly by the 2-D detector, while the “temporal” dimension (along track) is given by the satellite motion. This image scanning concept is defined as “Pushbroom”. The concept is shown in Figure 5-3.

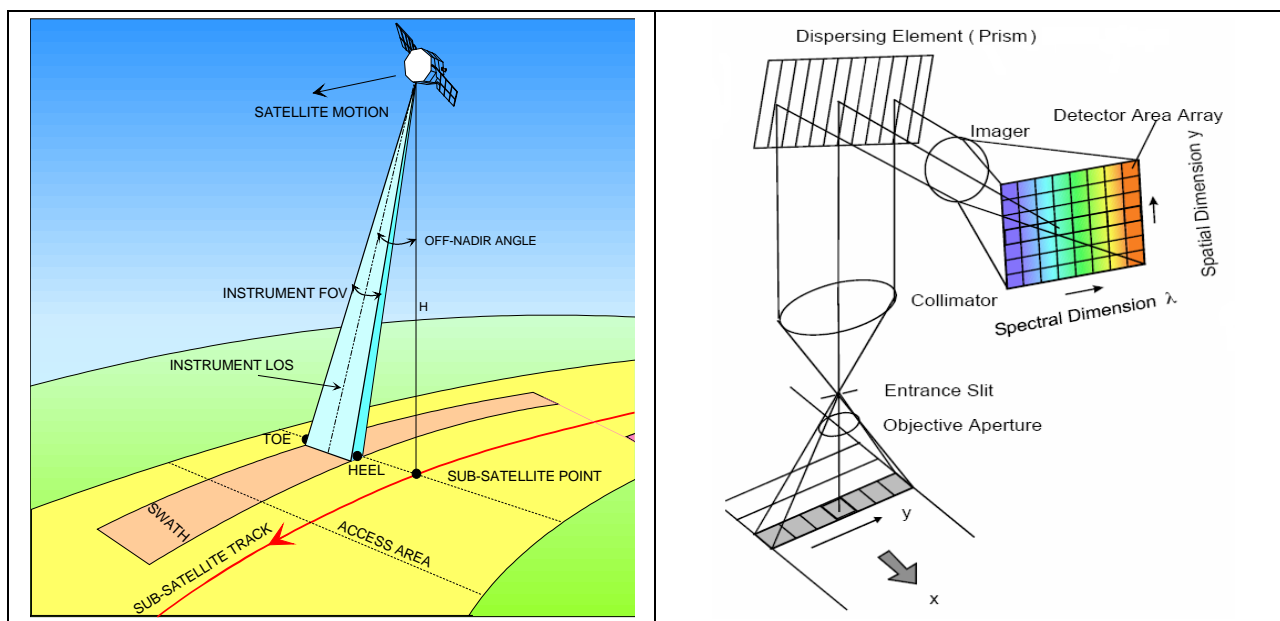


Figure 5-3: Pushbroom operating concept

Pushbroom imaging spectrometers offer the signal-to-noise ratio performance that is required for orbiting platforms, with respect to whiskbroom scanning. This means that the recovered spectrum of any ground feature from a pushbroom sensor potentially can contain substantial artefacts that compromise identification of the feature's composition. In fact, while whiskbroom sensors can achieve the highest spectral and spatial uniformity, they are more appropriate for airborne rather than orbiting platforms, as they cannot easily provide adequate signal-to-noise ratio performance from orbit owing to the limited integration time.

In a pushbroom sensor, the slit is dispersed and imaged onto the 2D detector array, so that each row is effectively an independent spectrometer. Thus, if a pushbroom sensor is to produce data of the same quality as a whiskbroom sensor, the SRF of every pixel must be calibrated to the same accuracy (concerning the error in the centre location of the response and the error in the half-width of the response¹).

Moreover, there are additional problems with pushbroom systems that relate to the spatial direction. These have mostly to do with spatial uniformity and cross contamination of the spectra between adjacent spatial pixels.

In order to avoid this problem, the instrument design requirements have been specified in order to greatly reduce the distortion in both the spectral and the spatial directions (i.e. co-registration requirements, smile, keystone)

5.2 THE PRISMA GROUND SEGMENT

The PRISMA Ground Segment Basic Functions, those define its basic processing, are:

- User Services Management Functions
- Mission Programming Functions
- Satellite Control & Monitoring Functions
- Mission Exploitation Functions (in terms of acquisition, archiving and processing data)

These Basic functions are used to supply services to the users, making the PRISMA GS a "Service Provider". The following figure shows the main building blocks of the Ground Segment.

¹ R. O. Green, "Spectral calibration requirement for Earthlooking imaging spectrometers in the solar-reflected spectrum," *Appl. Opt.* 37, 683–690 (1998).

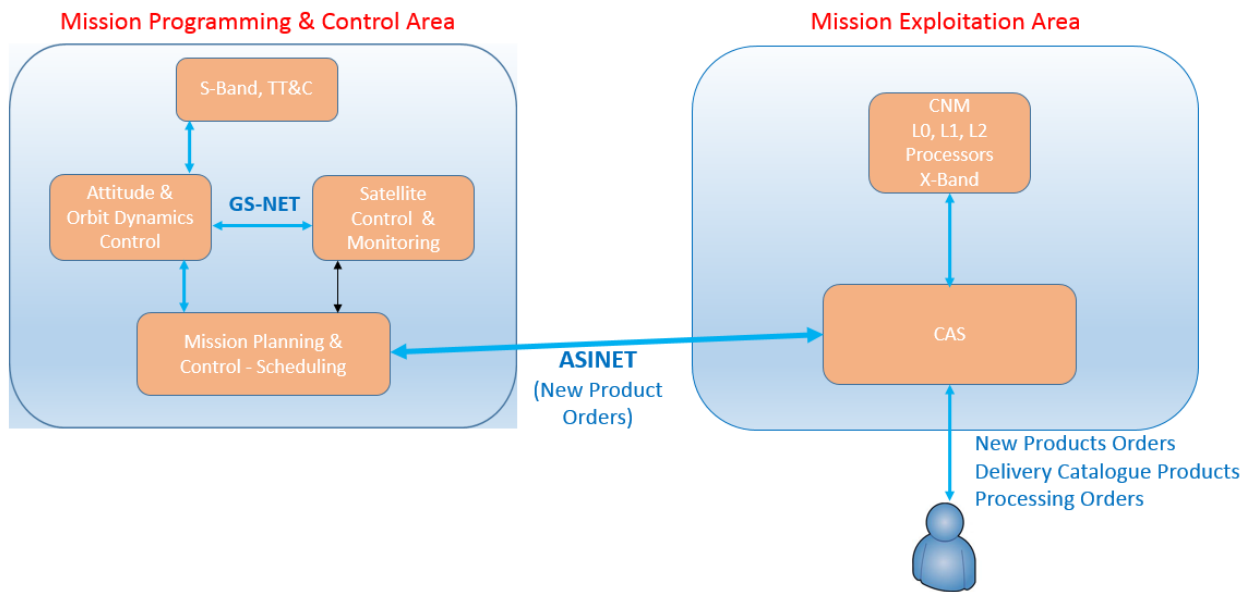


Figure 5-4: PRISMA top-level Ground Segment functional architecture

The section of the system functions available to the PRISMA users are contained in the Mission Programming & Control Area (in particular in the Mission Planning & Control – Scheduling) and in the Mission Exploitation Area, through which they are accessed, in particular by means of the CAS (Customer Access Subsystem) block.

User access to PRISMA mission is handled by a dedicated User Management System devoted to user management and access control. It is located at Matera site and it is internally connected to an identity provider, containing the unique mission User Database. It deals with a Web Service making available services of registration, logging and authentication.

The user accesses PRISMA through the web portal <https://prisma.asi.it> whose high-level architecture is depicted in the following figure.

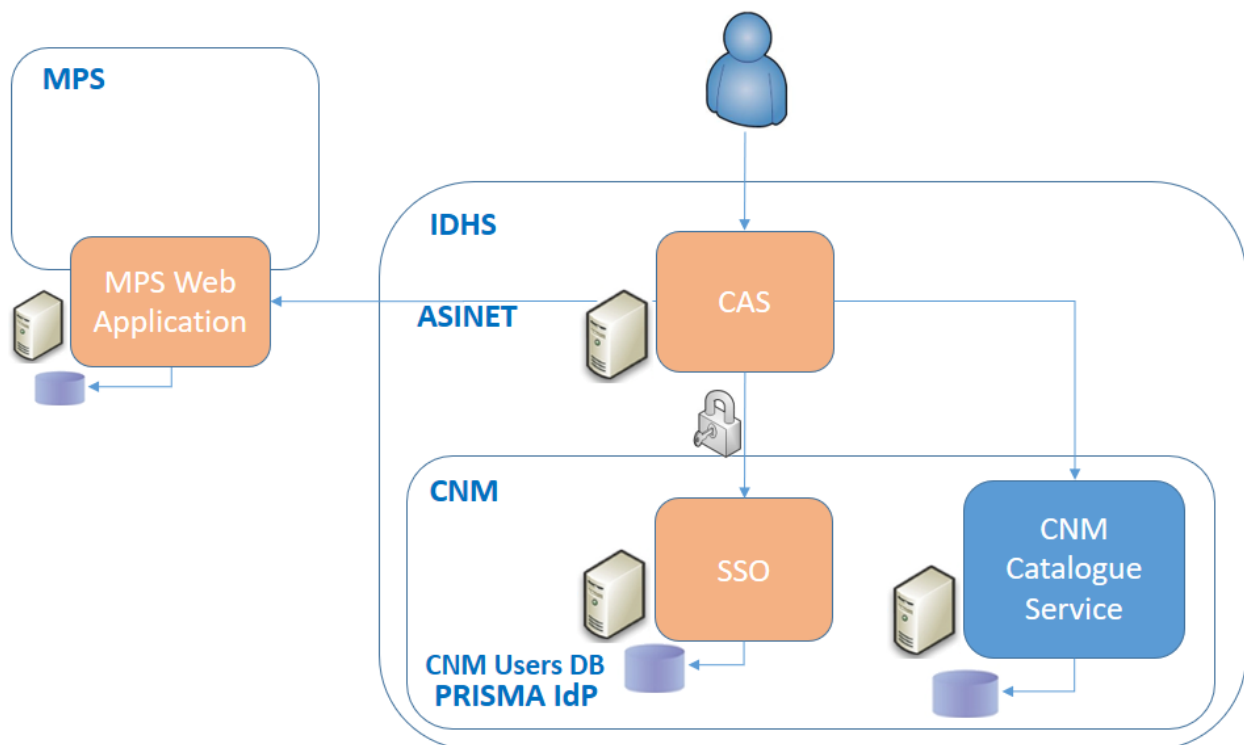


Figure 5-5: High level PRISMA's portal architecture

Portal architecture is composed by:

- CAS: it is the user front end of PRISMA. It allows the registration of new users and their login.
- SSO (implemented by CAS): it is in charge of the user authentication.
- CNM User DB/ PRISMA Identity Provider: it is the unified PRISMA user DB.
- CNM Catalogue Service: server exposing a web application (running on HTTPS protocol) allowing the catalogue consultation. It is visible to the end users only AFTER a login operation performed on CAS machine.
- MPS Web Application : server exposing a web application (running on HTTPS protocol) allowing the deposit of new requests. It is visible to the end users only AFTER a login operation performed on CAS machine.

6. REFERENCE MANUAL

6.1.1 LOG IN

Connect to the User sign-in page using the following URL:

<https://prisma.asi.it>

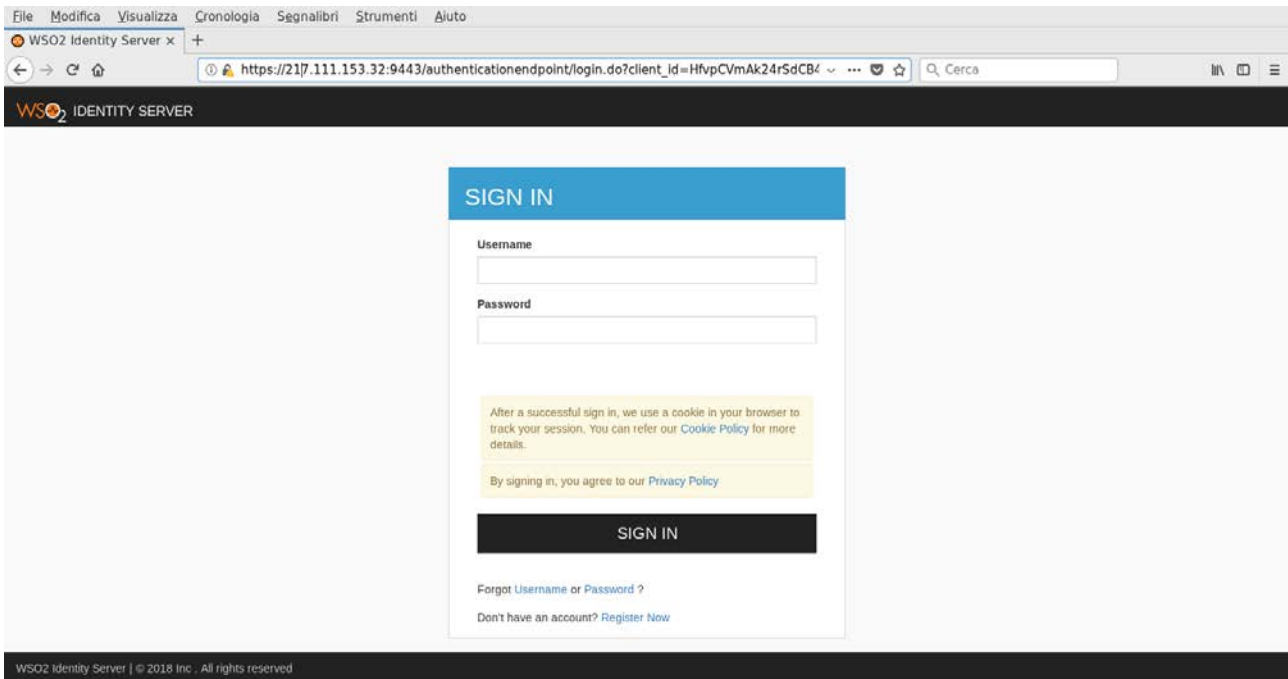


Figure 6-1: PRISMA portal login window

6.2 PRODUCTS FROM THE ARCHIVE/CATALOGUE

First step is to select the Catalogue in the Systems box

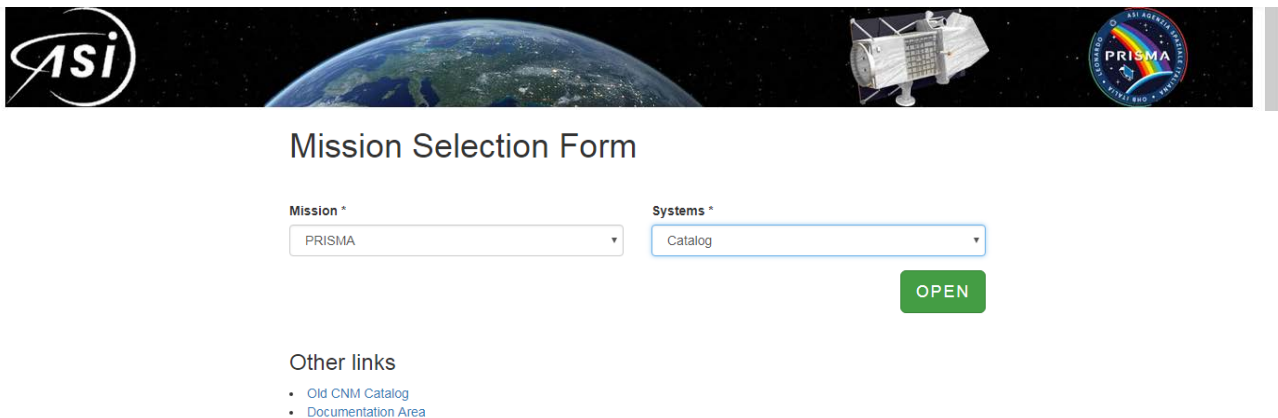


Figure 6-2: Catalogue access

Click on the OPEN button in the main page of the CAS window. The Catalogue page is open in a new tab or in a new window (depending on the browser configuration).

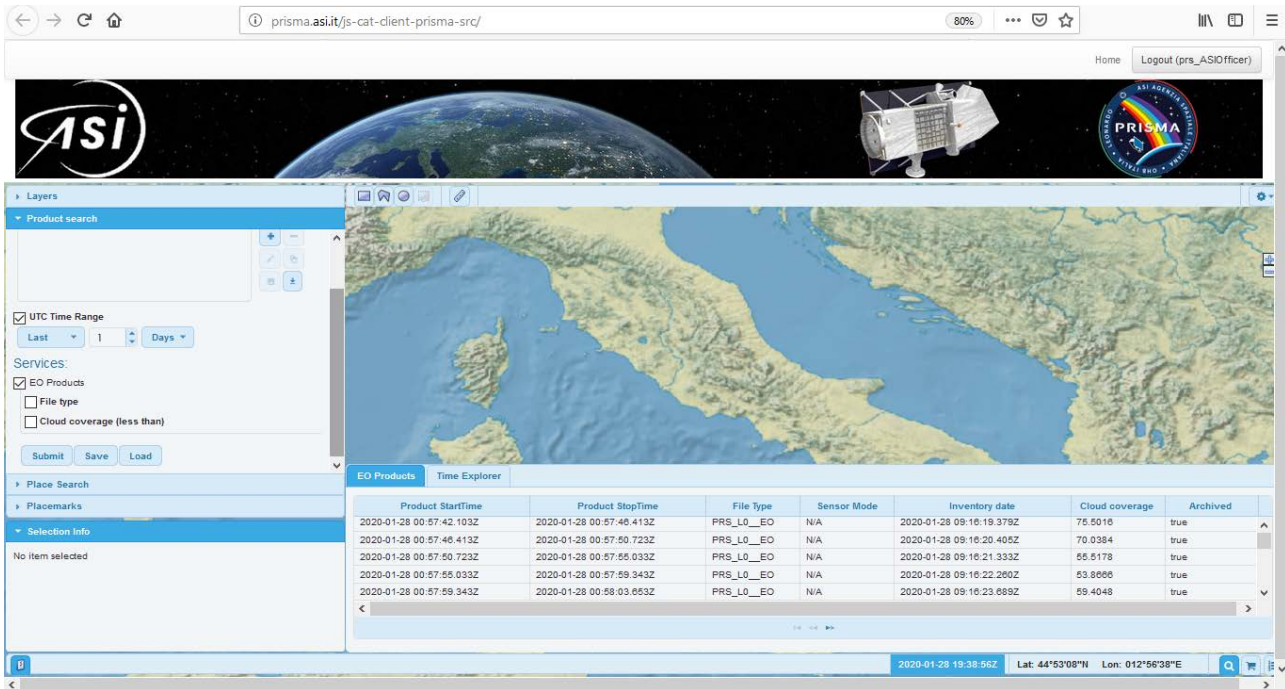


Figure 6-3: Catalogue main page

In following sections a list of the Catalogue functionalities is provided.

6.2.1 MAIN INTERFACE

The main interface of the Catalog application is divided in two main areas: the Map Viewer, on the right and the data navigation panel on the left, where all operations regarding data search and ordering are performed

6.2.2 MAP VIEWER

The user can pan on the map by moving the mouse while keeping the left button pressed. Zoom is obtained by click and drag with the right mouse button or using the mouse wheel. Clicking on an item on the map (a product, a placemark etc.) will select the item (information will be shown in the selection info pane). Multiple items can be selected by keeping the ctrl button pressed. Right click on the map will display a context menu with all the operations available for the selected item(s).

6.2.3 DATA NAVIGATION PANEL

It is composed mainly of 3 panes.

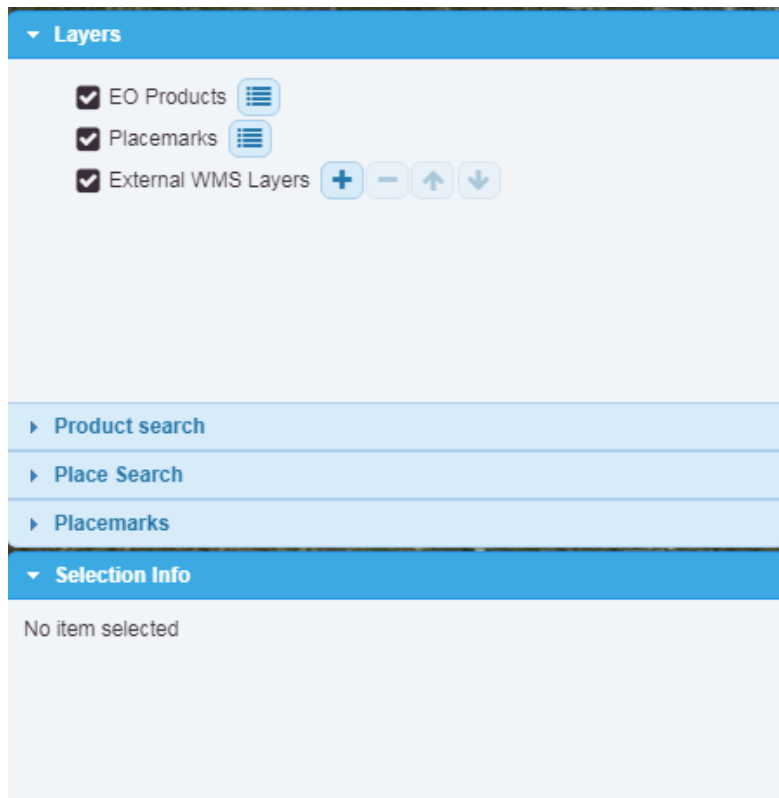


Figure 6-4: Data navigation panel

6.2.3.1 LAYERS

The layers pane provides a tree representation of all available map layers. The map visibility of each layer can be turned on/off by clicking on the corresponding checkbox in the tree. By selecting an item it is possible to modify additional properties of the layer from the selection info pane, such as opacity or z-ordering (the first item in the tree is the topmost layer on the map, and so on)

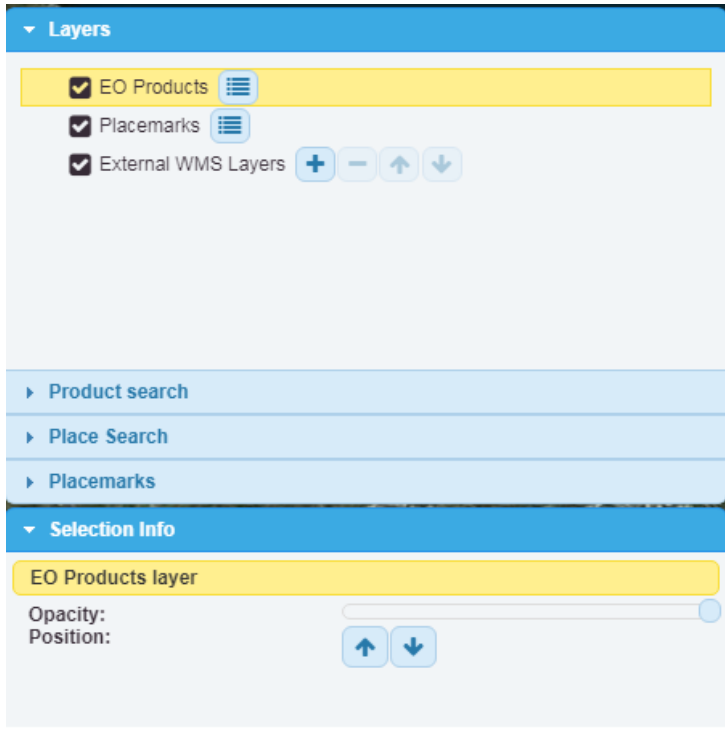
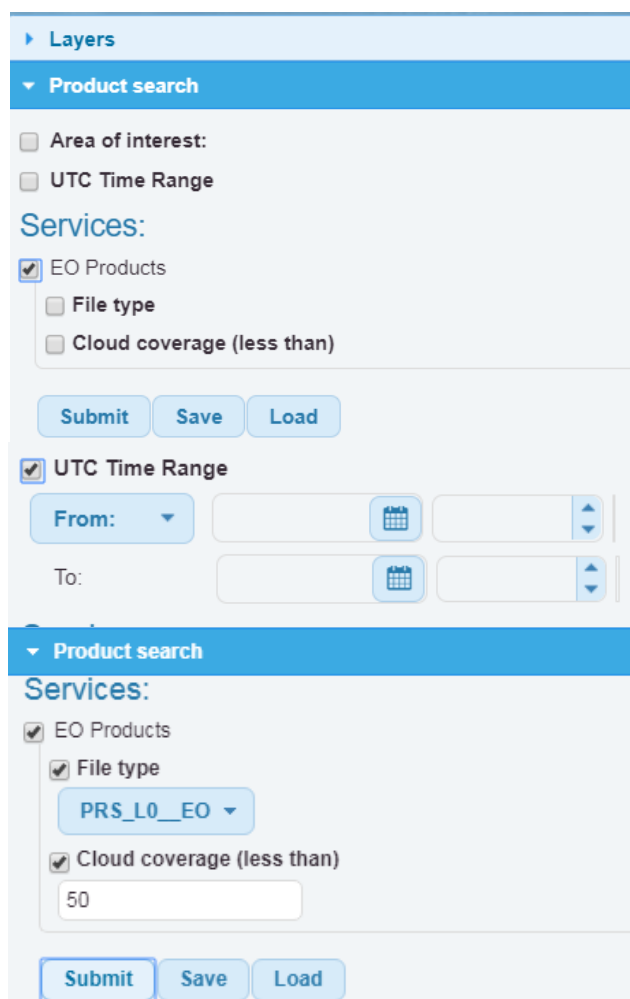


Figure 6-5: Layer pane

6.2.3.2 SEARCH PANE

Search pane offers different fields to help User in finding product he needs. The fields that can be used as a filter include:



The image shows two screenshots of the 'Product search' panel. The top screenshot shows the initial state with 'Area of interest' and 'UTC Time Range' unchecked. The 'Services' section has 'EO Products' checked, with 'File type' and 'Cloud coverage (less than)' unchecked. The bottom screenshot shows the state after selection: 'UTC Time Range' is checked with 'From' and 'To' date pickers. In the 'Services' section, 'EO Products', 'File type' (set to 'PRS_L0_EO'), and 'Cloud coverage (less than)' (set to '50') are all checked.

Figure 6-6: Product search

FIELD	TYPE	MEANING	EXAMPLE
Area of interest	List	Filter products by area coverage	
Time range	Date/Time	Start time and Stop time of products	2020-01-24 00:00:00
File type	Text	Products present in the database	All product or a specific file type.
Cloud coverage	Text	Filter products by cloud coverage percentage.	50

Table 2 Product search parameters

Area of interest can be drawn by selecting one of the area tools available in the top toolbar (bbox, polygon or circle) and then by clicking on the map to define the desired area. Alternatively area coordinates can be manually specified from the add area dialog that appears when clicking on the plus icon on the right side of the area table. Each area can be saved for later use in subsequent sessions.

Polygon selection is accomplished specifying vertex points by left clicks of the mouse, and signalling the polygon closure event with right click of the mouse.

The following buttons are located at the bottom of the search panel:

- **Submit:** to start searches

- **Save:** To save the search criteria
- **Load:** To load the search criteria saved

6.2.3.3 PLACEMARKS

The placemark pane allows to manage user defined points of interest. A placemark can be added by right clicking on the desired map point, selecting the “Add placemark...” item from the context menu and filling the dialog with the required information. Placemarks are stored in the user preferences and shown in the placemark table. When the user double-click on a row of the placemark table, the map viewpoint is moved to the corresponding location. A placemark can be used to define an area of interest through the context operation “Use as query area”.



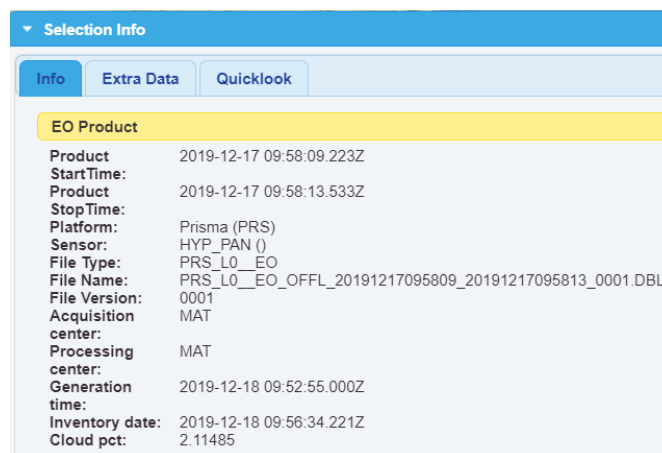
Visible	Name
<input checked="" type="checkbox"/>	test

Page 1 of 1 View 1 - 1 of 1

Figure 6-7: Placemarks

6.2.3.4 SELECTION INFO

The Info pane allows to view some details on selected image as Sensing times , Generation Time and computed Cloud coverage percentage.



EO Product	
Product	2019-12-17 09:58:09.223Z
StartTime:	
Product	2019-12-17 09:58:13.533Z
StopTime:	
Platform:	Prisma (PRS)
Sensor:	HYP_PAN ()
File Type:	PRS_LO_EO
File Name:	PRS_LO_EO_OFFL_20191217095809_20191217095813_0001.DBL
File Version:	0001
Acquisition center:	MAT
Processing center:	MAT
Generation time:	2019-12-18 09:52:55.000Z
Inventory date:	2019-12-18 09:56:34.221Z
Cloud pct:	2.11485

Figure 6-8: Product info

The Extra Data tab allows to view some details on compressed Bands into the products.

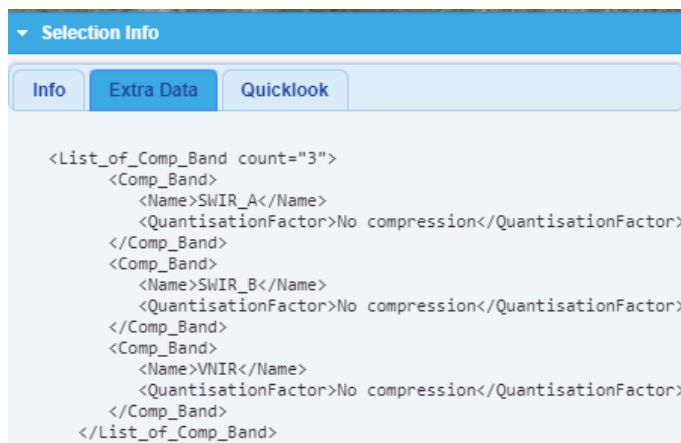


Figure 6-9: Product detailed info

The Quicklook tab allows to view the Quicklook of selected product.

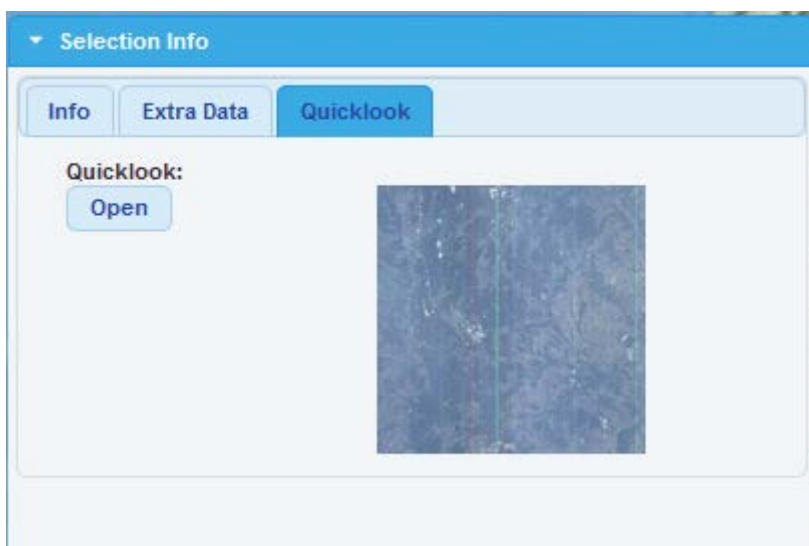
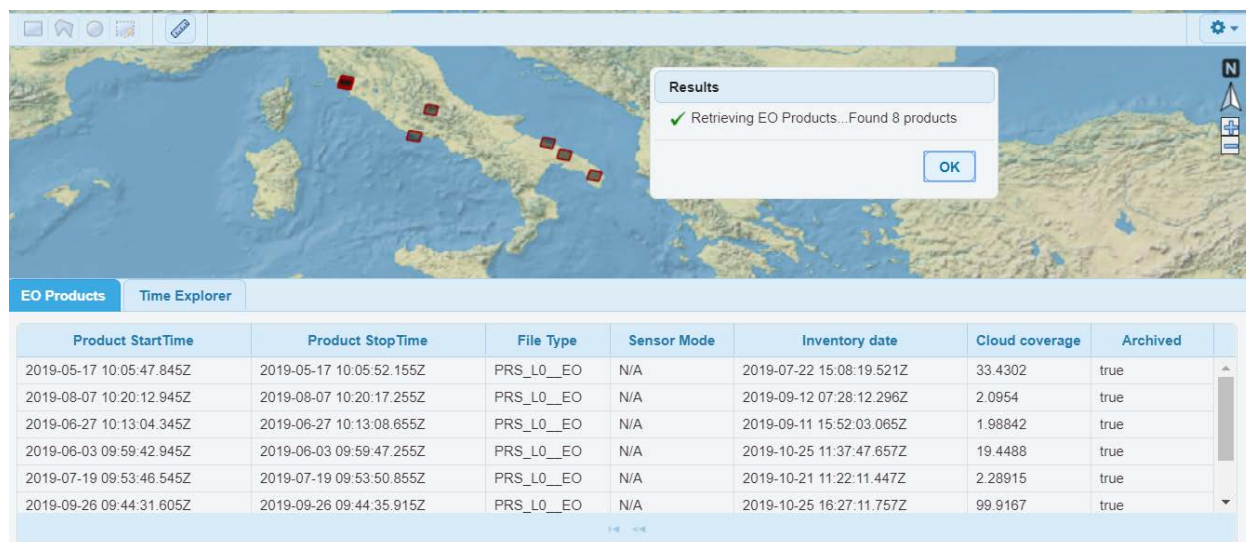


Figure 6-10: Quicklook

Clicking the Open button, the browser will open a new tab with the Quicklook image.

6.2.4 RESULTS PANE

It is the pane User that will be displayed after a search showing the results in the graphic interface.



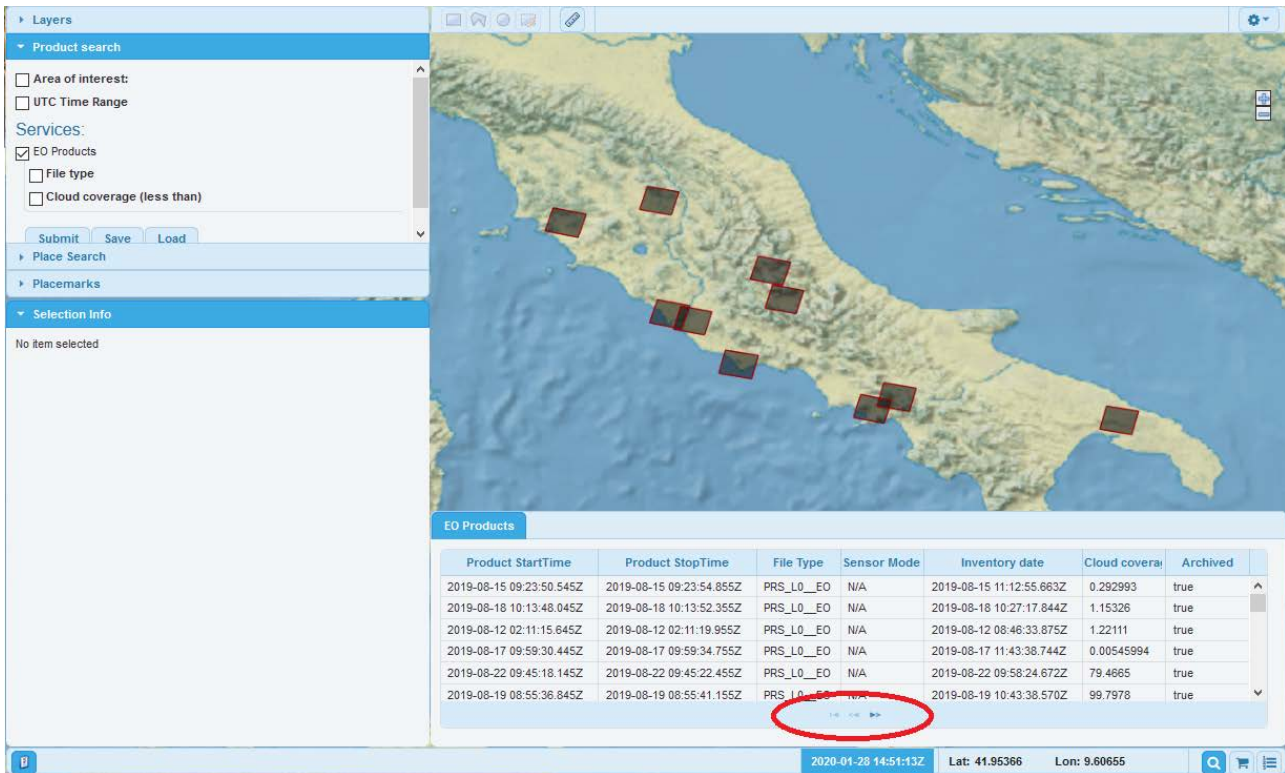
Results
 ✓ Retrieving EO Products... Found 8 products
 OK

Product StartTime	Product StopTime	File Type	Sensor Mode	Inventory date	Cloud coverage	Archived
2019-05-17 10:05:47.845Z	2019-05-17 10:05:52.155Z	PRS_L0_EO	N/A	2019-07-22 15:08:19.521Z	33.4302	true
2019-08-07 10:20:12.945Z	2019-08-07 10:20:17.255Z	PRS_L0_EO	N/A	2019-09-12 07:28:12.296Z	2.0954	true
2019-06-27 10:13:04.345Z	2019-06-27 10:13:08.655Z	PRS_L0_EO	N/A	2019-09-11 15:52:03.065Z	1.98842	true
2019-06-03 09:59:42.945Z	2019-06-03 09:59:47.255Z	PRS_L0_EO	N/A	2019-10-25 11:37:47.657Z	19.4488	true
2019-07-19 09:53:46.545Z	2019-07-19 09:53:50.855Z	PRS_L0_EO	N/A	2019-10-21 11:22:11.447Z	2.28915	true
2019-09-26 09:44:31.605Z	2019-09-26 09:44:35.915Z	PRS_L0_EO	N/A	2019-10-25 16:27:11.757Z	99.9167	true

Figure 6-11: results of the query on catalogue

Results are displayed on a grid with several columns used to facilitate the browsing through the result set.

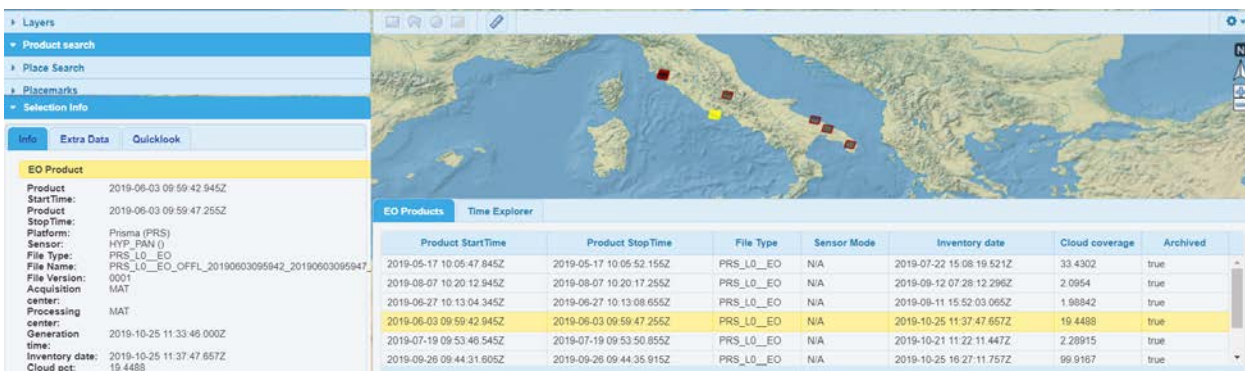
The results are paginated at 100 rows per page. Pages can be changed with the small icon on center bottom.



Product StartTime	Product StopTime	File Type	Sensor Mode	Inventory date	Cloud cover	Archived
2019-08-15 09:23:50.545Z	2019-08-15 09:23:54.855Z	PRS_LO_EO	N/A	2019-08-15 11:12:55.663Z	0.292993	true
2019-08-18 10:13:48.045Z	2019-08-18 10:13:52.355Z	PRS_LO_EO	N/A	2019-08-18 10:27:17.844Z	1.15326	true
2019-08-12 02:11:15.845Z	2019-08-12 02:11:19.955Z	PRS_LO_EO	N/A	2019-08-12 08:46:33.875Z	1.22111	true
2019-08-17 09:59:30.445Z	2019-08-17 09:59:34.755Z	PRS_LO_EO	N/A	2019-08-17 11:43:38.744Z	0.00545994	true
2019-08-22 09:45:18.145Z	2019-08-22 09:45:22.455Z	PRS_LO_EO	N/A	2019-08-22 09:58:24.672Z	79.4665	true
2019-08-19 08:55:36.845Z	2019-08-19 08:55:41.155Z	PRS_LO_EO	N/A	2019-08-19 10:43:38.570Z	99.7978	true

Figure 6-12: Query results pagination

When the User selects a product, the details will be displayed in the left part of the window:



Product StartTime	Product StopTime	File Type	Sensor Mode	Inventory date	Cloud coverage	Archived
2019-05-17 10:05:47.845Z	2019-05-17 10:05:52.155Z	PRS_LO_EO	N/A	2019-07-22 15:08:19.5212	33.4302	true
2019-08-07 10:20:12.945Z	2019-08-07 10:20:17.255Z	PRS_LO_EO	N/A	2019-09-12 07:28:12.2962Z	2.0954	true
2019-06-27 10:13:04.345Z	2019-06-27 10:13:08.655Z	PRS_LO_EO	N/A	2019-09-11 15:52:03.0652Z	1.98842	true
2019-06-03 09:59:42.945Z	2019-06-03 09:59:47.255Z	PRS_LO_EO	N/A	2019-10-25 11:37:47.657Z	19.4488	true
2019-07-19 09:53:46.545Z	2019-07-19 09:53:50.855Z	PRS_LO_EO	N/A	2019-10-21 11:22:11.447Z	2.28915	true
2019-09-26 09:44:31.605Z	2019-09-26 09:44:35.915Z	PRS_LO_EO	N/A	2019-10-25 16:27:11.757Z	99.9167	true

Figure 6-13: Product details

Results can be ordered according to a given column by clicking on its title: Ascending or descending order can be toggled by clicking on the title. Columns can be sorted by dragging the corresponding header. The visible columns can be selected through the context menu shown by clicking with the right mouse button on the table header.

The time explorer visualizes the query results on an interactive timeline, based on their acquisition time. Select a product on the map to center the timeline on the acquisition time of the product. When dragging the timeline, the map visualization is updated to highlight the products near the cursor timestamp. Timeline can be zoomed using the mouse wheel

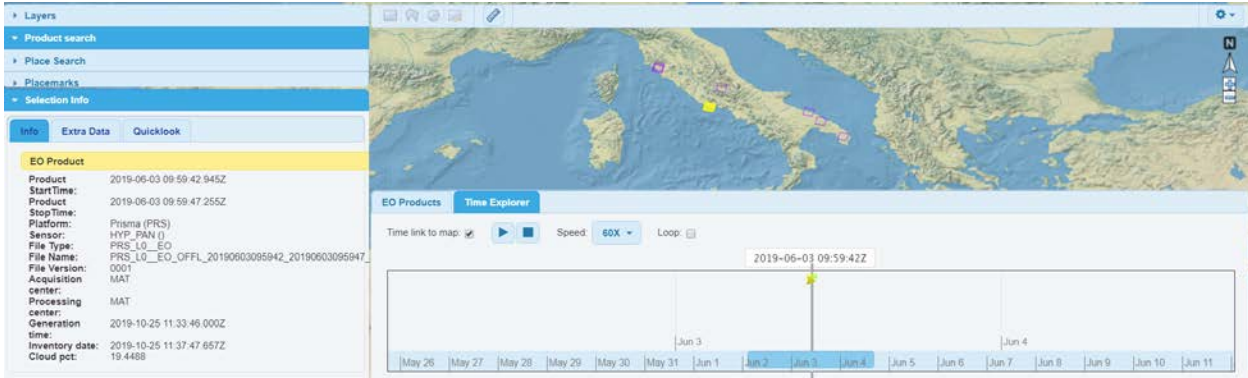


Figure 6-14: Time explore

Add basket

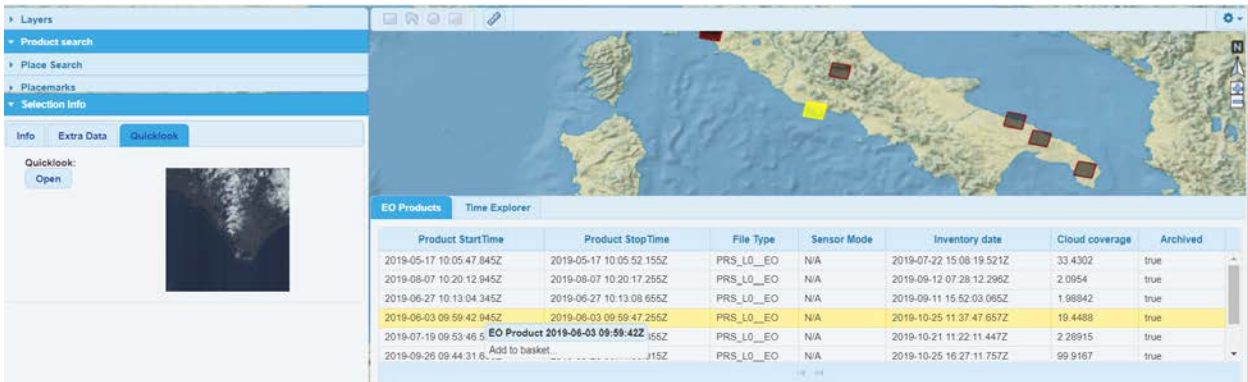


Figure 6-15: Add basket operation

6.2.5 ADD BASKET

On this type of product, user will create a processing. The action the user can do is to set the parameters. It is possible to load a predefined query.

Figure 6-16: Processing parameters

Fields for processing parameters are:

Processing	Processing Level: L1,L2B,L2C,L2D
Panchromatic Channel	Enabled/Disabled : Flag for Panchromatic channel computing.
VNIR Channel	Enabled/Disabled : Flag for VNIR channel computing.
SWIR Channel	Enabled/Disabled : Flag for SWIR channel computing.
Spatial grouping	Spatial Under-sampling factor: 1-10
GCP Use	Enabled/Disabled : Flag for use of GCP, only for L2B,L2C,L2D processing.
Band Selection or Binning	Bin/Bsel : Flag for computing a subset of Bands or binning computing.
VNIR Band selection	Range of VNIR bands selected between [4-66] : b ₁ -b ₂ ,b ₃ -b ₄ ,... if Bsel has been selected.
SWIR Band selection	Range of SWIR bands selected between [1-170] : b ₁ - b ₂ ,b ₃ -b ₄ ,... if Bsel has been selected.
Index of binning value	Spectral moving average factor: 1-10 , if Bin has been selected.

Table 3 Processing parameters

The following table shows the mapping between Band Index and the related WaveLength for VNIR and SWIR Channels.

Band Index	WL_VNIR [nm]	FWHM_VNIR [nm]	WL_SWIR [nm]	FWHM_SWIR [nm]
------------	--------------	----------------	--------------	----------------

1	1004,965454	12,62831306	2497,115479	9,728999138
2	994,9711914	12,93788719	2490,219238	9,218007088
3	984,3811646	12,97115517	2483,792969	9,122716904
4	973,9871216	12,91279602	2477,054932	9,811144829
5	963,6483765	12,94441032	2469,627197	9,328546524
6	952,8931885	13,46378422	2463,030273	9,059476852
7	941,2490234	13,27760506	2456,585693	9,568544388
8	930,7337646	12,75405407	2449,142334	9,607460022
9	920,5718994	12,88076591	2442,403076	8,924209595
10	910,0667725	13,06629372	2435,544189	9,609920502
11	899,4233398	13,11040783	2428,667725	9,633436203
12	888,7026367	13,1060648	2421,237305	9,907518387
13	878,0777588	13,0431881	2414,356689	9,114235878
14	867,3642578	13,17148495	2407,604492	9,83366394
15	856,5948486	13,14589977	2400,035889	9,842931747
16	845,8317261	13,08838367	2393,038818	9,4485569
17	835,1489258	13,00885773	2386,061768	9,870838165
18	824,5411987	12,98768139	2378,770996	9,828164101
19	813,9327393	12,95625687	2371,552246	9,707830429
20	803,3327637	12,94817162	2364,594482	9,642411232
21	792,7487183	12,85449696	2357,293701	10,13381481
22	782,28125	12,7641325	2349,791504	9,74174881
23	771,8952026	12,74426174	2342,822754	9,733902931
24	761,4781494	12,80502892	2335,526367	10,23498631
25	751,0913086	12,62770176	2327,824219	9,873425484
26	740,7712402	12,56452942	2320,895508	9,861345291
27	730,5769043	12,41900063	2313,200684	10,38665962
28	720,5016479	12,3491993	2305,722656	9,817890167
29	710,3485718	12,48248196	2298,609375	10,14062691
30	700,3587036	11,98217583	2290,82666	10,22005653
31	690,750061	12,03603745	2283,493408	9,950322151
32	680,7589722	11,97917271	2276,053711	10,39184952
33	671,0860596	11,83851051	2268,28833	10,10565662
34	661,5158081	11,71825027	2260,866455	10,39723682
35	652,0404663	11,63319969	2253,110352	10,35341549
36	642,5855103	11,54829311	2245,448486	10,24898434
37	633,2979736	11,14274788	2237,904053	10,47025681
38	624,4001465	11,21997261	2230,007568	10,48997116
39	615,3416748	11,07150745	2222,42627	10,31995964
40	606,579895	10,92410946	2214,625	10,56896687
41	597,6361084	10,82665634	2206,843018	10,25385094
42	588,9606934	10,55413246	2199,135254	10,70757294
43	580,4658203	10,39586353	2191,100342	10,53475571
44	572,1085205	10,31268024	2183,420166	10,42951012
45	563,8278198	10,17391586	2175,344238	10,81814098
46	555,6419678	10,05979729	2167,484863	10,4052906
47	547,5363159	10,01752567	2159,563965	10,97972584
48	539,5068359	9,795125961	2151,38623	10,72788334
49	531,6742554	9,669556618	2143,465576	10,71089363
50	523,927002	9,641452789	2135,510254	10,90403748
51	516,1654663	9,507074356	2127,337158	10,83949375
52	508,6680603	9,366909027	2119,231445	10,96091175
53	501,1333923	9,292699814	2111,039063	10,97451687
54	493,6803589	9,206349373	2102,821289	11,00893593
55	486,4165039	9,007447243	2094,625244	11,01621532
56	479,1698303	8,908111572	2086,382324	11,20486259
57	471,9405212	8,914631844	2077,991455	11,09249592
58	464,7201233	8,920166969	2069,795654	11,2635088

59	457,3534241	9,059168816	2061,378662	11,09842205
60	450,0111389	9,123975754	2053,007813	11,17084217
61	442,6363831	9,195631027	2044,680908	11,12836361
62	435,2785645	9,226050377	2036,260742	11,42365456
63	427,9563599	9,332583427	2027,726685	11,25815964
64	420,4064331	9,750845909	2019,321411	11,43357944
65	412,4606628	10,37718678	2010,661377	11,38755894
66	403,6150818	11,35224819	2002,110596	11,53911209
67			1993,548218	11,40911007
68			1984,853027	11,81587887
69			1976,012939	11,57380199
70			1967,341797	11,73533535
71			1958,62439	11,54941559
72			1949,900757	11,72707653
73			1941,110718	11,95355701
74			1932,26001	11,81017399
75			1923,385742	12,18462849
76			1914,301392	11,8970871
77			1904,934692	12,72552586
78			1896,091309	11,63577652
79			1887,080933	11,77403545
80			1878,742554	12,56736851
81			1868,17334	11,46572495
82			1859,558716	12,36181641
83			1850,554321	12,62172794
84			1841,325562	12,58400536
85			1832,027222	12,48864269
86			1822,441284	13,07937717
87			1813,05127	12,37173557
88			1803,59021	12,54814148
89			1793,953125	12,72824287
90			1784,717285	12,59507179
91			1775,117798	12,47487736
92			1765,512573	12,71340752
93			1755,833008	13,0777874
94			1746,219238	12,97546673
95			1736,488403	12,83528137
96			1726,651611	12,81098557
97			1716,858887	13,02038288
98			1707,094482	13,2541399
99			1697,294312	13,22678375
100			1687,42688	13,04662704
101			1677,319336	12,99486542
102			1667,185181	13,46423435
103			1656,932983	12,85817623
104			1647,231567	13,39513588
105			1637,091919	13,57167625
106			1627,020996	13,66740322
107			1616,833618	14,02093983
108			1606,491333	13,76013184
109			1596,245361	13,90128708
110			1585,859863	13,92940044
111			1575,627319	13,81271458
112			1565,368774	13,99826717
113			1554,816772	14,14927197
114			1544,226196	13,93795967
115			1533,776367	14,10292816
116			1523,22229	14,08894348

117			1512,633301	14,15331078
118			1502,023438	14,32816219
119			1491,429199	14,19109821
120			1480,842163	14,35108376
121			1469,930786	14,44627094
122			1459,315674	13,88232517
123			1449,188843	13,9790535
124			1438,465942	14,87912655
125			1427,374634	14,24291229
126			1416,537354	14,51218128
127			1405,626953	14,59148216
128			1394,754028	14,52481651
129			1383,279785	15,15550327
130			1372,911743	14,68958855
131			1361,053101	15,28233051
132			1349,78772	14,76456547
133			1339,129395	14,64970589
134			1328,299316	14,81002998
135			1317,256592	14,73632336
136			1306,218018	14,65475368
137			1295,421875	14,6244278
138			1284,487793	14,7072401
139			1273,496338	14,74774456
140			1262,532227	15,11242199
141			1250,979858	14,98299408
142			1240,214478	14,52533334
143			1229,185181	14,88925838
144			1217,863525	14,60076618
145			1207,273682	14,74438667
146			1196,339355	14,46939373
147			1185,588379	14,56452274
148			1174,714233	14,45989418
149			1163,676147	14,86172199
150			1152,650146	14,47423077
151			1142,070313	14,33642483
152			1131,30481	14,54416561
153			1120,675903	14,18616867
154			1109,889404	14,60808372
155			1099,277588	14,23894405
156			1088,760986	14,28531265
157			1078,216064	14,16227055
158			1067,7948	14,0451746
159			1057,57373	13,82085896
160			1047,675049	13,63140965
161			1037,987793	13,56242466
162			1029,343994	12,9564867
163			1018,535706	12,97453213
164			1008,644287	12,45164967
165			998,9082031	12,67055607
166			988,9179077	12,28469372
167			979,223999	12,13259125
168			969,8449097	12,15050888
169			959,973938	12,20068169
170			951,4014282	11,01296139
171			943,3579102	10,94130802
172			934,6009521	11,1797266
173			925,6868286	11,056283

Table 4 band indices and related wavelengths

Once the User has completed his choice, it is possible to save the parameters

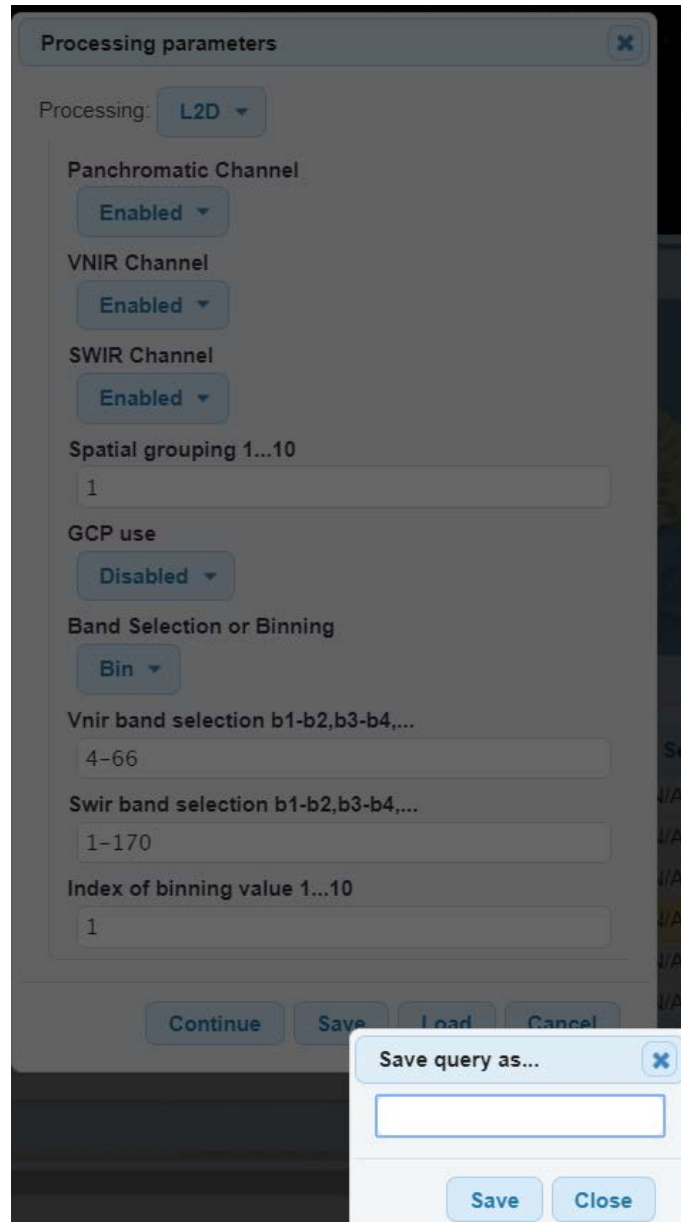


Figure 6-17: Query saving

Continue button can be pressed in order to add order in the cart

6.2.6 CART PANE

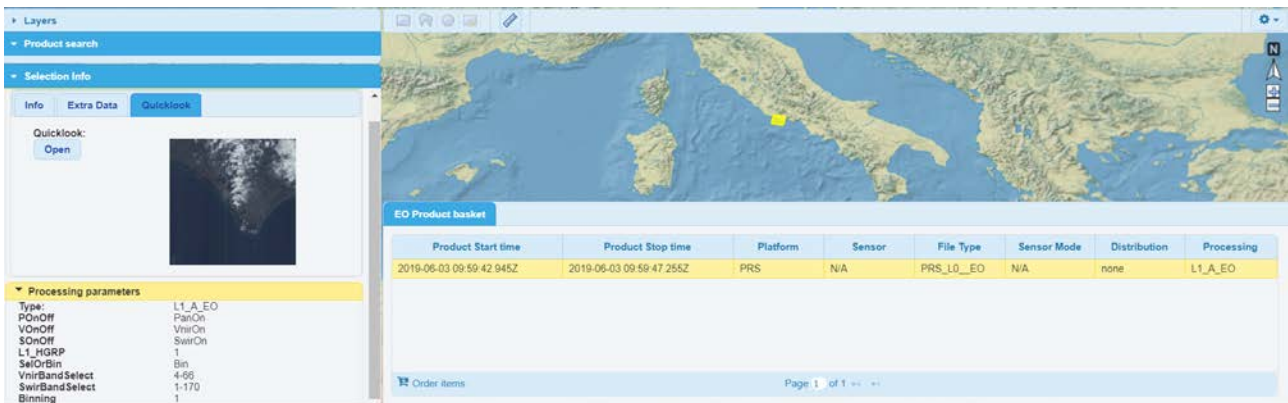


Figure 6-18: Cart list

Before the execution, it is possible to change the parameters or delete the order by right button of the mouse

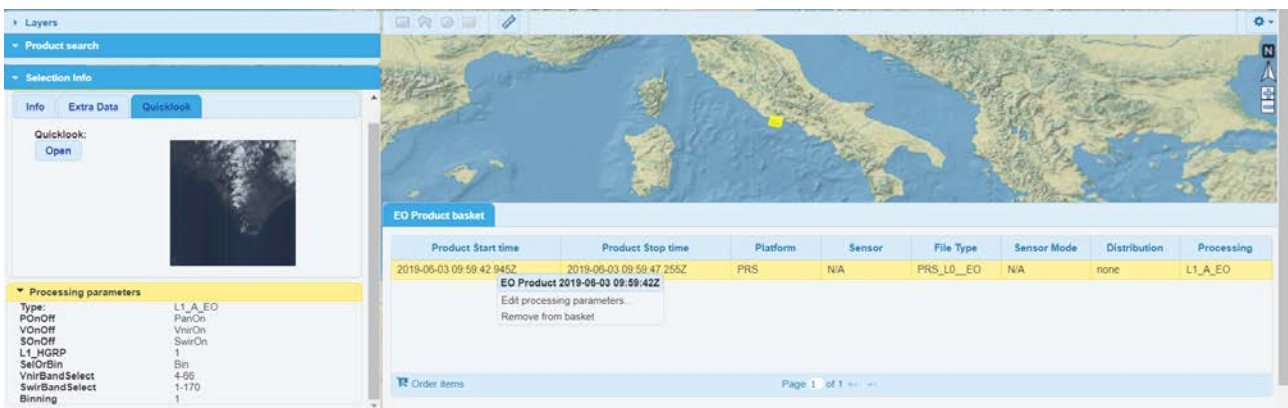


Figure 6-19: Order editing

The order can be launch by Orders item icon in the bottom of the EO Products basket panel

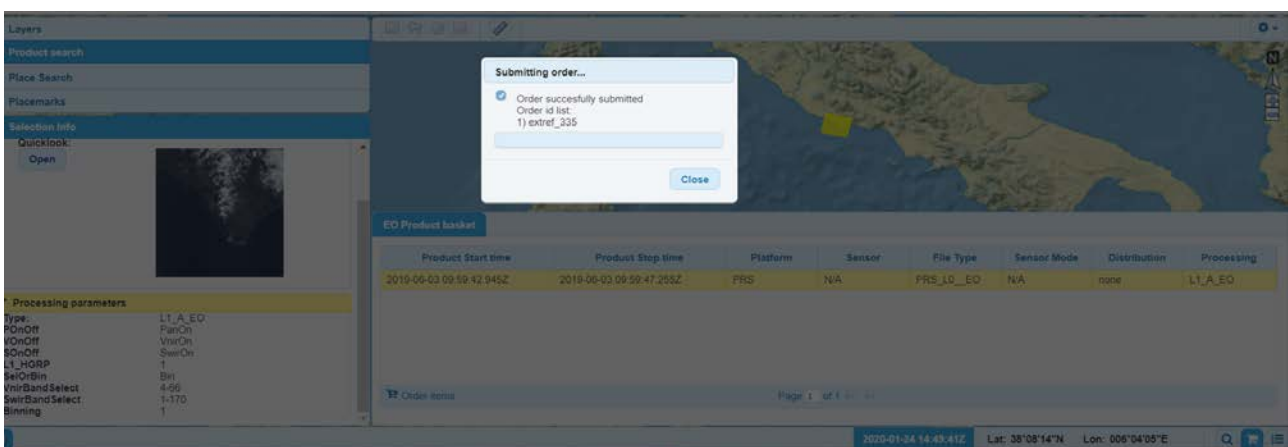
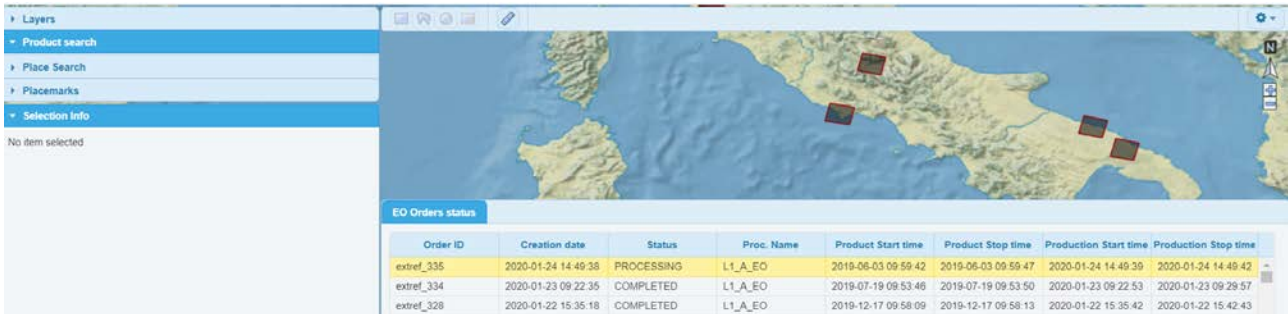


Figure 6-20: Processing order launch

It is possible to check the status of each orders by EO Orders status tab clicking on "EO Orders status" icon in the bottom of the EO Products basket panel.

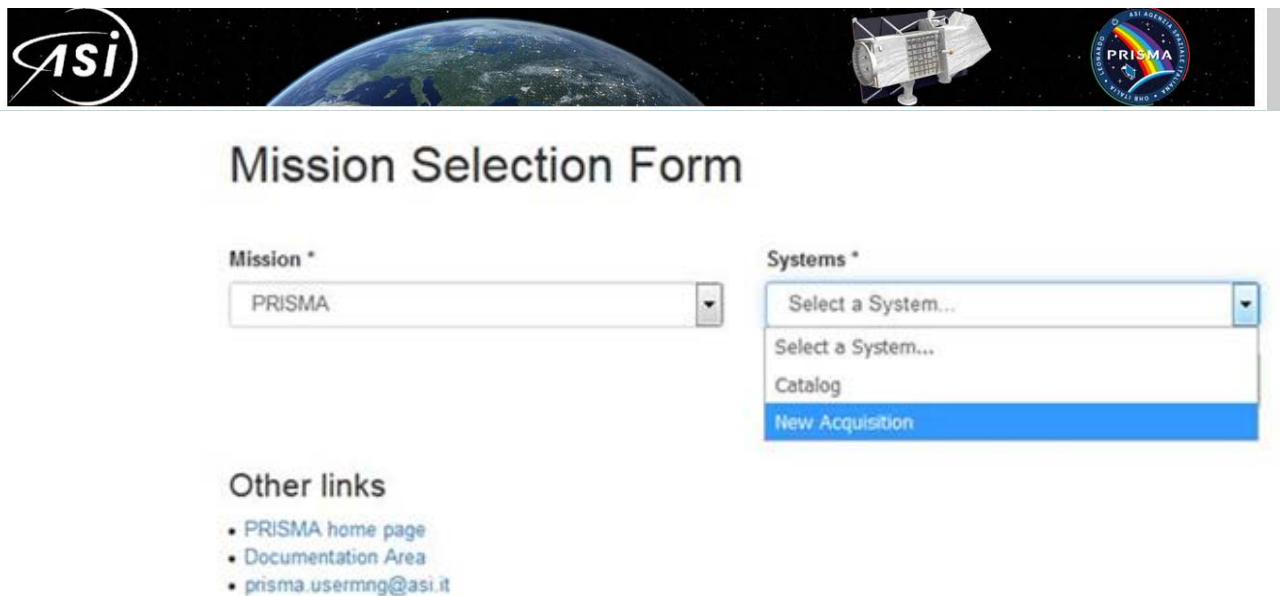


Order ID	Creation date	Status	Proc. Name	Product Start time	Product Stop time	Production Start time	Production Stop time
extref_335	2020-01-24 14:49:38	PROCESSING	L1_A_EO	2019-06-03 09:59:42	2019-06-03 09:59:47	2020-01-24 14:49:39	2020-01-24 14:49:42
extref_334	2020-01-23 09:22:35	COMPLETED	L1_A_EO	2019-07-19 09:53:46	2019-07-19 09:53:50	2020-01-23 09:22:53	2020-01-23 09:29:57
extref_328	2020-01-22 15:35:18	COMPLETED	L1_A_EO	2019-12-17 09:58:09	2019-12-17 09:58:13	2020-01-22 15:35:42	2020-01-22 15:42:43

Figure 6-21: Order status list

6.3 NEW ACQUISITIONS

First step is to select the New Acquisition in the Systems box



Mission Selection Form

Mission *
PRISMA

Systems *
Select a System...
Select a System...
Catalog
New Acquisition

Other links

- [PRISMA home page](#)
- [Documentation Area](#)
- prisma.usermng@asi.it

Figure 6-22: New Acquisition access

6.3.1 ORDER LIST

Please notice that the Programming Request filter and the Clear Filters functions are described only in para #4.2 REQUEST OF ACQUISITION OF NEW IMAGES and not here.

After successful login, the main page of the application is shown. Click on “StoreFront” link on left menu and the list of already submitted orders is shown:



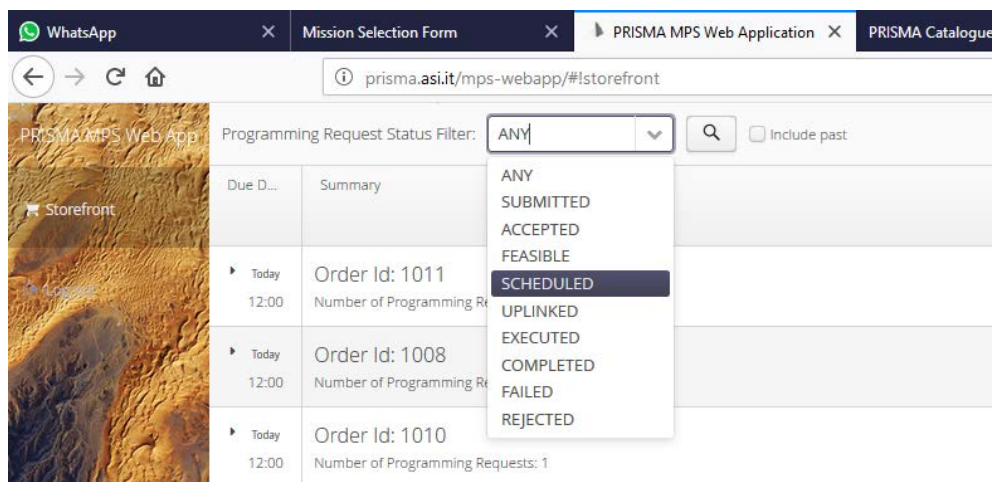
Due Date	Summary	Status	Last stage detected
11 Sep 01:00	Order Id: 376 1x Spot image: 30 x 30 km	COMPLETED	
12 Sep 13:20	Order Id: 361 1x Spot image: 30 x 30 km	SUBMITTED	
11 Sep 13:20	Order Id: 356 1x Spot image: 30 x 30 km	SUBMITTED	
11 Sep 13:20	Order Id: 345 1x Spot image: 30 x 30 km	SUBMITTED	
12 Sep 13:20	Order Id: 342 1x Spot image: 30 x 30 km	SUBMITTED	
13 Sep 13:20	Order Id: 337 1x Spot image: 30 x 30 km	SUBMITTED	
10 Sep 13:20	Order Id: 312 1x Spot image: 30 x 30 km	SUBMITTED	
28 Apr	Charlier Id: 294	SUBMITTED	

Figure 6-23: Primary User Page with Order List

The table reports:

- Due Date, corresponding to the stop validity time of submission
- Summary of the Order IDs, as an incremental integer defining the submitted Order Id requested, each of one including one or more PR (Programming Request) set
- Order Status, indicating a view of the Order status (Submitted, Active or Completed);
- PRs Status, corresponding to the last detected stage of the PR in the planning chain
- Last Stage Detected, as a description of the PRs Status

It is possible to filter the order's PR by PR Status from a Multiple Choice Box, where default status is "ANY", optionally including also the past ones (by enabling the Include past checkbox):



WhatsApp Mission Selection Form PRISMA MPS Web Application PRISMA Catalogue

prisma.asi.it/mps-webapp/#Istorefront

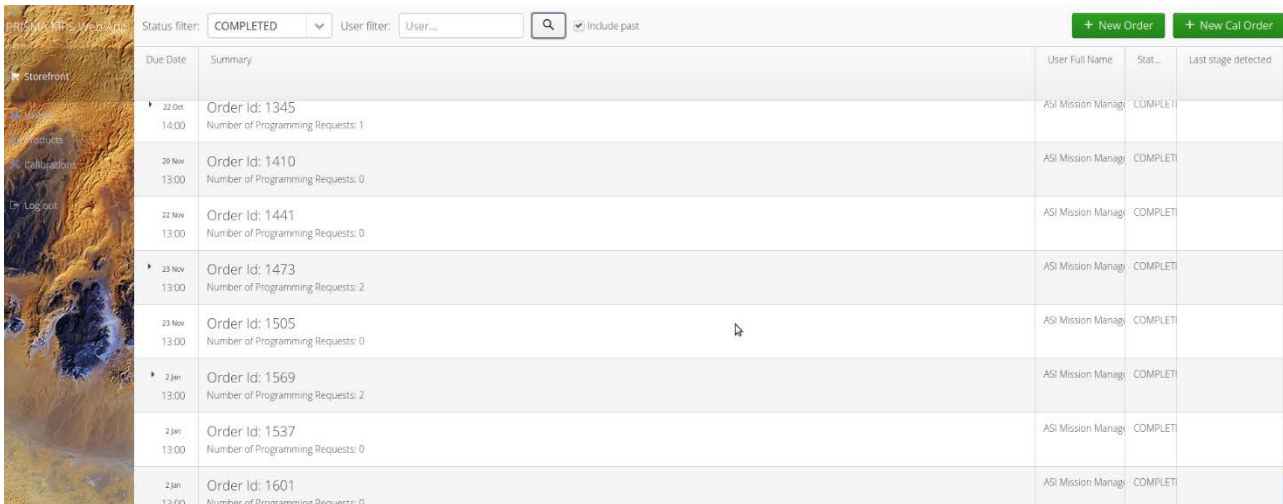
PRISMA MPS Web App Storefront

Programming Request Status Filter: ANY [v] [q] [Include past]

Due D...	Summary
▶ Today 12:00	Order Id: 1011 Number of Programming R...
▶ Today 12:00	Order Id: 1008 Number of Programming R...
▶ Today 12:00	Order Id: 1010 Number of Programming Requests: 1

Figure 6-24: Order status selection.

The filter is applied at the Programming Request level, where the number of PRs for each Order at the selected status is reported. This way, all the Orders are listed but only the PRs at the given status are visible, as shown in Figure 6-25, for the case of COMPLETED status.

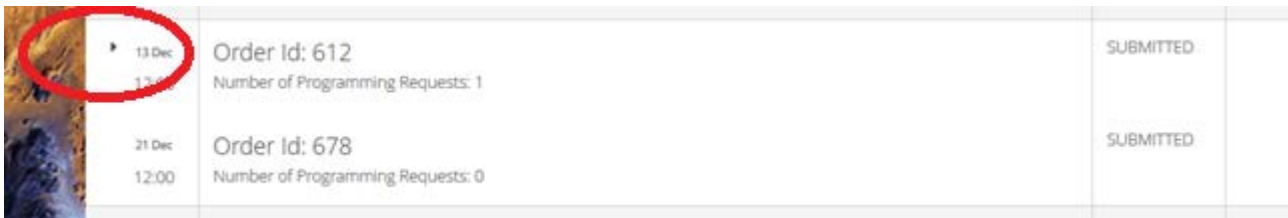


PRISMA MFS Web page. Status filter: COMPLETED. User filter: User... Include past. + New Order + New Cal Order

Due Date	Summary	User Full Name	Stat...	Last stage detected
22 Oct 14:00	Order Id: 1345 Number of Programming Requests: 1	ASI Mission Managi	COMPLETI	
20 Nov 13:00	Order Id: 1410 Number of Programming Requests: 0	ASI Mission Managi	COMPLETI	
22 Nov 13:00	Order Id: 1441 Number of Programming Requests: 0	ASI Mission Managi	COMPLETI	
23 Nov 13:00	Order Id: 1473 Number of Programming Requests: 2	ASI Mission Managi	COMPLETI	
23 Nov 13:00	Order Id: 1505 Number of Programming Requests: 0	ASI Mission Managi	COMPLETI	
2 Jan 13:00	Order Id: 1569 Number of Programming Requests: 2	ASI Mission Managi	COMPLETI	
2 Jan 13:00	Order Id: 1537 Number of Programming Requests: 0	ASI Mission Managi	COMPLETI	
2 Jan 13:00	Order Id: 1601 Number of Programming Requests: 0	ASI Mission Managi	COMPLETI	

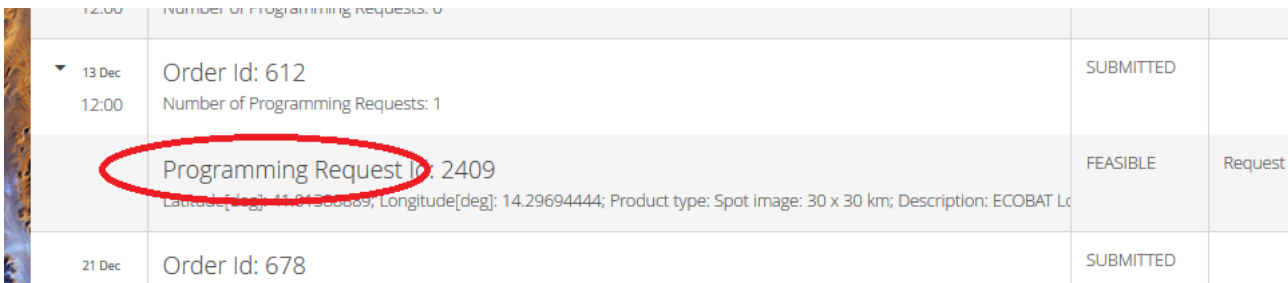
Figure 6-25: Order filtering

The order containing PRs with a status corresponding to the selected filter are differentiated by the presence of a small black triangle icon on the left. The PR appears by clicking on the triangle icon.



13 Dec 13:00	Order Id: 612 Number of Programming Requests: 1	SUBMITTED	
21 Dec 12:00	Order Id: 678 Number of Programming Requests: 0	SUBMITTED	

Figure 6-26: Filtered order

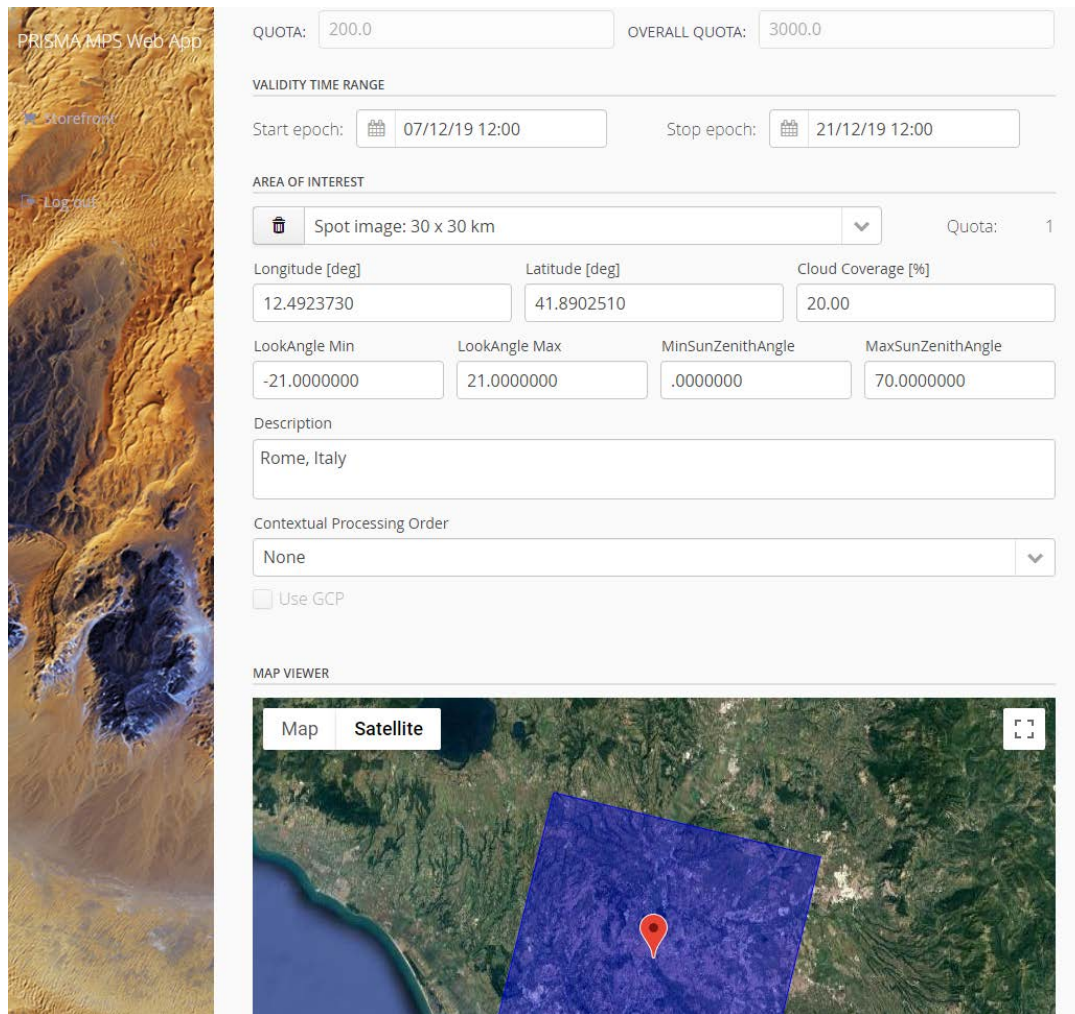


13 Dec 12:00	Order Id: 612 Number of Programming Requests: 1	SUBMITTED	
	Programming Request Id: 2409 Latitude[deg]: 44.01950889, Longitude[deg]: 14.29694444; Product type: Spot image: 30 x 30 km; Description: ECOBAT L...	FEASIBLE	Request
21 Dec	Order Id: 678	SUBMITTED	

Figure 6-27: PR corresponding to a filtered order

6.3.2 CREATE ORDER

From Order List page shown in the previous section, click on the button "New Order" (top right of the page), and the order creation form is shown.



PRISMA MPS Web App

Storefront

Log out

QUOTA: 200.0 OVERALL QUOTA: 3000.0

VALIDITY TIME RANGE

Start epoch: 07/12/19 12:00 Stop epoch: 21/12/19 12:00

AREA OF INTEREST

Spot image: 30 x 30 km Quota: 1

Longitude [deg] Latitude [deg] Cloud Coverage [%]

12.4923730 41.8902510 20.00

LookAngle Min LookAngle Max MinSunZenithAngle MaxSunZenithAngle

-21.0000000 21.0000000 .0000000 70.0000000

Description

Rome, Italy

Contextual Processing Order

None

Use GCP

MAP VIEWER

Map Satellite

Figure 6-28: Order creation page

One or more request item, the so called Programming Request, can be placed in an order from the Order creation page.

The following information are shown:

- Quota information:
 - Quota: it is the so called “dynamic quota”. It reports the available dynamic quota (quota is the number of square images 30km x 30km) that can be exploited from the submission to the completion of a set of acquisition orders. In particular, when an order is completed, all the quota relevant to the rejected PRs is paid back to the User. It limits the total number of orders contemporarily pending (active) in the system from a given User;
 - Overall Quota: it is the so called “static quota”. It reports the available static quota, corresponding to the the lifetime quota preserved to the user for the submission of new acquisition orders.

These fields are only shown, they cannot be modified.

- Validity Time Range Selection:
 - Start & Stop epoch defining the Time Window in which the acquisition must be acquired (it is actually limited to 1 day minimum and 29 days i.e. the PRISMA orbital cycle duration as the maximum).
- Area Of interest Selection, which allows the definition of:

Image Size: from a combo box allowing to select the kind of requested product: 30 x 30 km, 30 x 60 km, 30 x 1800 km, where on the right of the selected product the corresponding quota cost is reported.

- Latitude, Longitude: they allow the manual definition of coordinates of the AOI (point). These fields are in sync with the map;
- Look Angle Min/Max: they allow the manual definition of the ranges of the satellite Field Of View over the AOI target. It must be noted that constraints on maximum PRISMA acquisition roll angles are dependent on latitudes as specified in Table 5. So the look angle limits indicated by users in the webApp will be matched (and eventually limited) with constraints in Table 5.

Latitude degrees	Maximum roll angle (absolute value)
[0, 25]	20.7
[30;40]	18.0
[45, 55]	14.9
[60, 65]	10.7
[70, 85]	7.3

Table 5: Constraint on Field of Fiew

- Min/Max SunZenithAngle: they allow the manual definition of the ranges of sun zenith angle;
- Description: free text describing the order going to be submitted;
- Contextual Processing Order: the required product level (with possible GCP selection flag and TC Acquisition Parameters).
- Map Viewer:
 - The graphical view and/or selection of the geographical point where the acquisition must be placed from a Map or Satellite point of view.
- Add Item: the button that allows the insertion of an additional request item in the same Order.
- “Cancel” and “Review order” buttons: on the bottom of the page for the submission or deletion of the prepared order. In case the submssion is done, a “Place order” button appears. After clicking on it, the available quota (both dynamic & static) is checked:
 - if the check is successful then the Order is sent to the MPS Core;
 - otherwise a quota violation message is shown and the order submission is blocked.

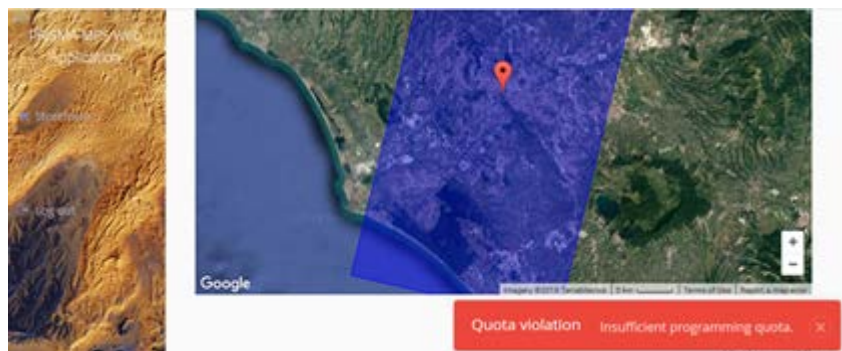


Figure 6-29: Order Submission with quota violation message

For the Calibration User only a further section for changing the default TeleCommand Acquisition Parameters is provided:

- VNIR SDAB Editing Info: One bit flag for each row to be stored in PDHT. If the flag is 0 the row shall be skipped, if 1 the row shall be elaborated and transmitted to the PDHT;
- SWIR PE Editing Info: 255 bits one each band. If flag is 0 the row shall not be read, if 1 the row shall be read and shall be transmitted to the SDAB;
- SWIR SDAB Editing Info: One bit flag for each row to be stored in PDHT. If the flag is 0 the row shall be skipped, if 1 the row shall be elaborated and transmitted to the PDHT.

6.3.3 CREATE CALIBRATION ORDER

In case of user with Calibration role (i.e. special user), then the product type combo box shows also the calibration requests “New Cal Order”, which can be selected as for new orders.



Figure 6-31: Calibration User page

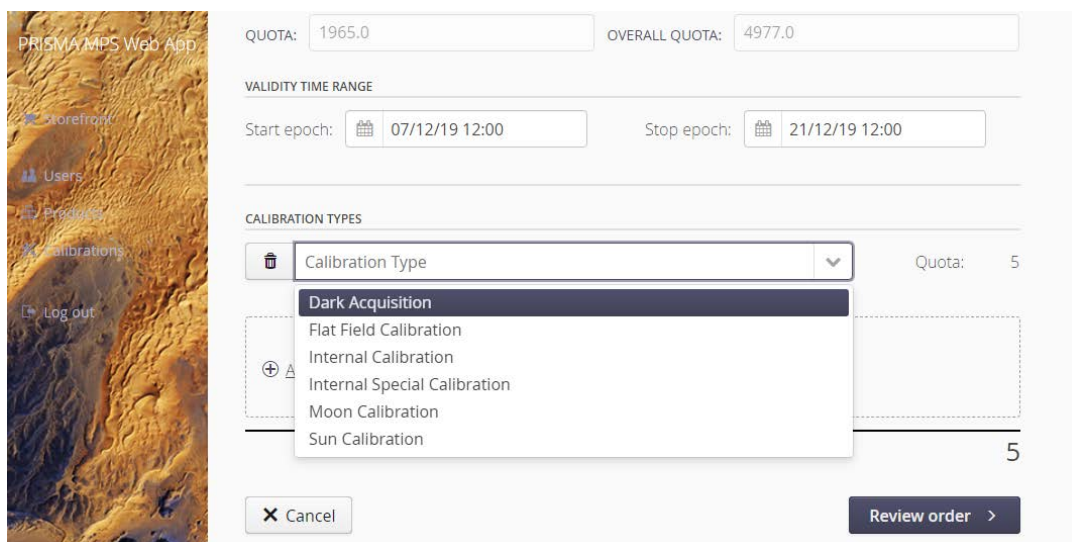


Figure 6-32: Calibration Request preparation

The following information are shown:

- Quota information:
 - Quota: it is the so called “dynamic quota”. It reports the available dynamic quota.
 - Overall Quota: it is the so called “static quota”. It reports the available static quota. These fields are only shown, they cannot be modified.
- Validity Time Range Selection:
 - Start & Stop epoch define the Time Window in which the acquisition must be acquired.
- Calibration Type Selection:
 - Definition of the Calibration Type to be requested, between:
 - Dark Acquisition;
 - Flat Field Calibration
 - Internal Calibration
 - Moon Calibration
 - Sun Calibration
- Add Item: the button that allows the insertion of an additional request item in the same Order.

- “Cancel” and “Review order” buttons: on the bottom of the page for the submission or deletion of the prepared order. In case the submission is done, a “Place order” button appears. After clicking on it, the available quota (both dynamic & static) is checked:
 - if the check is successful then the Order is sent to the MPS Core;
 - otherwise a quota violation message is shown and the order submission is blocked.

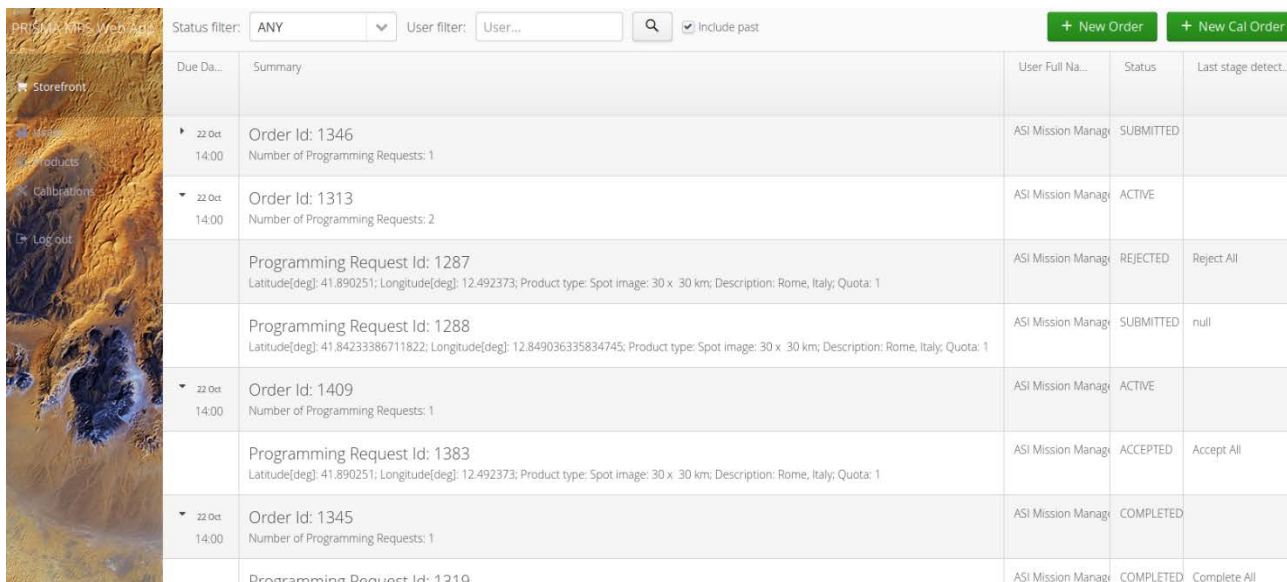
6.3.4 ORDER STATUS

Once an order has been submitted it is found in the Order List page shown in Figure 6-23. The order details reports all information entered during the submission plus:

- The quota value;
- The history: showing the submission date and the status changes of both the order and the relevant PRs

Within the columns of Status and Last Stage Detected, detailed in Figure 6-23, the data relevant to the updated statuses and applicable descriptions regarding are reported, where the following Statuses can be applied to the Orders: SUBMITTED, ACTIVE, COMPLETED.

In particular the SUBMITTED order status results during the first generation step of the relevant requests, the ACTIVE order status outcomes when at least one PRStatus of the relevant PRs is updated, while the COMPLETED order status results when all the PRs are in a final status.



Due Da...	Summary	User Full Na...	Status	Last stage detect...
22 Oct 14:00	Order Id: 1346 Number of Programming Requests: 1	ASI Mission Manag...	SUBMITTED	
22 Oct 14:00	Order Id: 1313 Number of Programming Requests: 2	ASI Mission Manag...	ACTIVE	
	Programming Request Id: 1287 Latitude[deg]: 41.890251; Longitude[deg]: 12.492373; Product type: Spot image: 30 x 30 km; Description: Rome, Italy; Quota: 1	ASI Mission Manag...	REJECTED	Reject All
	Programming Request Id: 1288 Latitude[deg]: 41.8423386711822; Longitude[deg]: 12.849036335834745; Product type: Spot image: 30 x 30 km; Description: Rome, Italy; Quota: 1	ASI Mission Manag...	SUBMITTED	null
22 Oct 14:00	Order Id: 1409 Number of Programming Requests: 1	ASI Mission Manag...	ACTIVE	
	Programming Request Id: 1383 Latitude[deg]: 41.890251; Longitude[deg]: 12.492373; Product type: Spot image: 30 x 30 km; Description: Rome, Italy; Quota: 1	ASI Mission Manag...	ACCEPTED	Accept All
22 Oct 14:00	Order Id: 1345 Number of Programming Requests: 1	ASI Mission Manag...	COMPLETED	
	Programmine Request Id: 1319	ASI Mission Manag...	COMPLETED	Complete All

Figure 6-33: Status updates

Additionally, by clicking on the Order entry, the order is open in reading mode to show the content and the history of the updated status relevant to both the Order and the PRs, as shown in Figure 6-34, for the example of Order 1569 consisting of PRs 1543 and 1544.

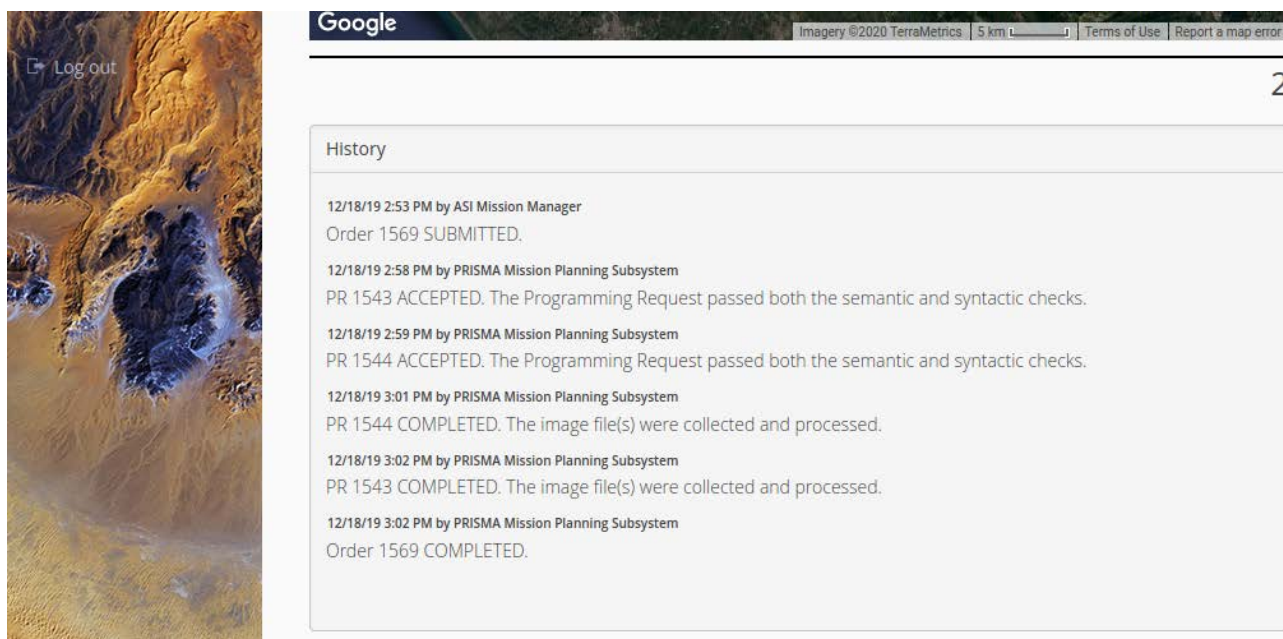


Figure 6-34: Order details

In the following the list of possible Programming Request Status

Status	Last stage detected (*)	Description/Meaning
SUBMITTED	-	Request created and submitted but not yet took charge by the system
ACCEPTED	<ul style="list-style-type: none"> Request not geometrically feasible Request not plannable for bad weather forecast 	The Programming Request (PR) has been managed during the next horizon planning phase, but its planning was not possible because no geometric opportunities for acquisitions were found in that horizon or because the PR had a forecast cloud coverage overcoming the chosen threshold. In any case, further planning attempts can be set in place in the next horizons until the end of validity time range of the PR.
FEASIBLE	<ul style="list-style-type: none"> Request not plannable for a conflict in the operational plan : DTO ID 1 : Maximum guidance duration per orbit exceeded or conflict between adjacent observations 	The Programming Request has been managed during the next horizon planning phase but its planning was not possible because of conflict. Further planning attempt can be set in place in the next horizon.
SCHEDULED	<ul style="list-style-type: none"> Programming Request planned into the mission plan 	The Programming Request has been planned into the mission plan
UPLINKED	<ul style="list-style-type: none"> The request has been correctly loaded on board 	The Programming Request has been correctly loaded on board
EXECUTED	<ul style="list-style-type: none"> Programming request is correctly executed on board 	The Programming Request is correctly executed on board
COMPLETED	<ul style="list-style-type: none"> The image screening has shown good quality 	The LO File relevant to the Programming Request has been produced
FAILED	<ul style="list-style-type: none"> The request has not been correctly executed on board 	The Programming Request has not been correctly executed on board. Programming Request validity time

Status	Last stage detected (*)	Description/Meaning
		expired: no more planning attempts possible in future horizons. (Note: If Programming Request validity time is not yet expired the Programming Request is moved to ACCEPTED)
REJECTED	<ul style="list-style-type: none"> Request not geometrically feasible Request not plannable for bad weather forecast 	The Programming Request (PR) has been managed during the next horizon planning phase, but its planning was not possible because no geometric opportunities for acquisitions were found in that horizon or because the PR had a forecast cloud coverage overcoming the chosen threshold. Programming Request validity time expired: no more planning attempts possible in future horizons

Table 6-6 – Definition of terms general

(*) The most of possibile “Last stage detected” have been reported but some further “phrases” could be possibile. In any case the description/meaning remains applicable.

Note: the Status of the Order and PR is updated twice a day, before and after that the elaboration and planning of the user requests take place (within 16:30 UTC during winter time and 17:30 UTC during Italian light saving time).