



SAOCOM over ASI Zone of Exclusivity (ZoE)

Membership and ordering guide
Issue 1.4 Date 19/05/2022

TABLE OF CONTENTS

1. SCOPE AND PURPOSE	3
1.1 SCOPE.....	3
1.2 PURPOSE.....	3
2. APPLICABLE AND REFERENCE DOCUMENTS.....	4
2.1 APPLICABLE DOCUMENTS.....	4
2.2 REFERENCE DOCUMENTS.....	4
3. ACRONYMS AND DEFINITIONS.....	5
3.1 ACRONYMS.....	5
3.2 DEFINITIONS.....	5
4. SAOCOM, SIASGE AND THE ASI ZONE OF EXCLUSIVITY.....	7
5. ACCESS TO SAOCOM DATA OVER ASI ZOE	9
5.1 USER MEMBERSHIP REQUEST AND REGISTRATION PROCEDURE.....	9
5.1.1 ELECTRONIC QUALIFIED SIGNATURE OF SAOCOM RELEASE OF LIABILITY DECLARATIONS.....	9
5.2 SAOCOM PRODUCT SPECIFICATIONS	9
5.3 ACCESS TO DATA ARCHIVED ON ASI DISSEMINATION SYSTEM	10
5.4 ACCESS TO DATA ARCHIVED ON CONAE DISSEMINATION SYSTEM	10
5.4.1 RETRIEVING THE PRODUCT ID BY THE EXCEL FILE	11
5.4.2 RETRIEVING THE PRODUCT ID BY THE KMZ FILE	11
5.4.3 RETRIEVING THE PRODUCT ID BY THE CONAE CATALOGUE SITE.....	12
5.5 ORDERING NEW PRODUCTS AND NEW ACQUISITIONS	13
5.5.1 ORDERING NEW PRODUCTS	13
5.5.2 ORDERING NEW ACQUISITIONS.....	14
6. HOW TO COMPILE THE MEMBERSHIP REQUEST	17
7. IMPORTANT – HOW TO SEND THE REQUESTS	20
7.1 MEMBERSHIP REQUEST	20
7.2 PRODUCT OR NEW ACQUISITION REQUEST	20
8. IMPORTANT – SUMMARY OF DO AND DON'T WITH SAOCOM IMAGES.....	21

LIST OF TABLES

Table 3-1 Definitions.....	6
Table 6-1 User categories	19

LIST OF FIGURES

Figure 1 – ASI Zone of Exclusivity.....	7
Figure 2 –SAOCOM Product Specs	10
Figure 3 –ZoE contents, columns A-K.....	11
Figure 4 –ZoE contents, columns L-X	11
Figure 5 –ZoE contents, columns Y-AA	11
Figure 6 –ZoE contents, kml loaded in Google Earth.....	12
Figure 7 – CONAE dissemination system	13
Figure 8 – CONAE dissemination system catalogue query	13
Figure 9 – Product processing orders	14
Figure 10 – Periodic acquisitions.....	15
Figure 11 –Acquisition orders, columns A-Y	15
Figure 12 –Acquisition orders, columns Z-AH.....	15
Figure 12 –Minimum area which can be acquired.....	16
Figure 13 – Registration form: user info	17
Figure 14 – Registration form: project info	18

1. SCOPE AND PURPOSE

1.1 SCOPE

This guide has the objective to give all the information needed for users in order to request membership, submitting orders and obtaining the data acquired by the CONAE SAOCOM 1 satellite constellation, over the geographical zone in which ASI has an exclusive right to use and hence to disseminate the data.

1.2 PURPOSE

Access to SAOCOM mission data acquired over the ASI' Zone of Exclusivity (ZoE) requires that the user requests membership to this service:

- a) having read and accepted the ASI-CONAE SAOCOM License to Usage Agreement and
- b) having compiled the related documentation (Liability declarations, Membership registration form)

At the current stage, the membership will be requested by the user through an email sent to a specific mailbox, as explained in the next sections.

2. APPLICABLE AND REFERENCE DOCUMENTS

2.1 APPLICABLE DOCUMENTS

The request of membership to the access service to the SAOCOM product presented here is based on the following documents at their latest revision and date of issue.

- [AD1] MoU between ASI and CONAE for the cooperation on the italo-argentine satellite system for emergency management, economic development and social benefit (SIASGE)
- [AD2] SAOCOM Licence to USE, signed between CONAE and ASI on 28 feb 2020
- [AD3] SAOCOM Release of Liability Declaration Form
- [AD4] SAOCOM PRIVACY POLICY
- [AD5] Membership Registration and Ordering forms

2.2 REFERENCE DOCUMENTS

- [RD-1] NA

3. ACRONYMS AND DEFINITIONS

3.1 ACRONYMS

Acronym	Meaning
ASI	Italian Space Agency
CONAE	Comisión Nacional de Actividades Espaciales of Argentina
DHuS	Data Hub Software
MoU	Memorandum of Understanding
QES	Qualified Electronic Signature
SAOCOM	Satélite Argentino de Observación COn Microondas
SIASGE	Sistema Italo-Argentino per la Gestione delle Emergenze (Italian-Argentinean Sy-stem for Emergencies Management)
ZoE	Zone of Exclusivity

3.2 DEFINITIONS

Affiliated User	Natural or legal person who shares the use of the ORIGINAL SAOCOM PRODUCT or the PROTECTED PRODUCT with the End User within a Joint Project, based on the clauses and conditions established in this License, which must be accepted accordingly.
Ancillary Data	Subset of technical data related to the SAOCOM system that are added to the SAOCOM Product.
Derived product	It is the Product generated by the user from an ORIGINAL SAOCOM PRODUCT or from a PROTECTED PRODUCT, after applying different processing and/or addition methods and techniques, which produce significant and irreversible modifications to the ORIGINAL or the PROTECTED PRODUCT so that the initial characteristics of the SAOCOM PRODUCT are no longer identifiable either in whole or in part
Final User	One of the Main User, Affiliated or Contractor/Consultant who use the SAOCOM products for the needs to execute a Joint Project
Joint Project	Specific project which entails the joint use of the SAOCOM PRODUCT by the End User and one or more Affiliated Users, under the clauses of this License in the framework of the SIASGE MOU.
Original product	Indistinctly means any Product generated from Raw Data from the SAOCOM satellites, generated by CONAE with its metadata. They can be classified as Level 1 (Standard Product 1 A, 1 B, 1 C, 1 D), Level 2 or Higher-Level. Level 2 or Higher-Level products shall be considered Original SAOCOM Products, regardless of whether it still contains identifiable initial characteristics of the Level 0 or 1 products used by CONAE to process and generate them. In this sense, the Products under this category (Level 2 or Higher Level) such as the "Soil Moisture Map", the "Ships Map", the "Fusariosis Forecast Map" generated by CONAE, or those that it may be defined by CONAE in the future, shall be considered as "Original SAOCOM Product".
Protected product	It is a product generated by the user from an ORIGINAL SAOCOM PRODUCT, where the initial characteristics of the ORIGINAL PRODUCT are still identifiable either in whole or in part after applying to them different methods and processing or merging techniques. Copies of the PROTECTED PRODUCT and/or parts thereof on any media are also PROTECTED PRODUCTS
Purposes of Use	It refers to the Use of the SAOCOM Products by the End User for the activities under the terms of the MOU. This does not include any right to sell, assign, lease, distribute or transfer the ORIGINAL SAOCOM PRODUCTS or the PROTECTED PRODUCTS, or any part thereof, or to use them in any manner not expressly authorized by this License or in writing ad hoc by CONAE.
Use	The term "Use" includes but it is not limited to: installation, visualization, copying, processing, printing, via web transmitting/receiving, the storage of ORIGINAL or PROTECTED SAOCOM PRODUCTS on the User's computers or other devices for the purposes of Internal Use for which they are acquired. This License does not include commercial, online or web uses.

User	<p>In the SAOCOM Licence to Use, the User is the Italian Space Agency (ASI Agenzia Spaziale Italiana) who has the right to use the Products for the Purposes of the MOU but also the right to have Affiliated Users with whom share the SAOCOM products.</p> <p>In the registration form, the User is one of the Main User, Affiliated or Contractor/Consultant. In relation to the SAOCOM License to Use Agreement, such users (i.e. the final users) are formally “Affiliated users” of ASI.</p>
-------------	--

Table 3-1 Definitions

4. SAOCOM, SIASGE AND THE ASI ZONE OF EXCLUSIVITY

ASI and CONAE decided to collaborate for the development of the SIASGE project (COOPERATION ON THE ITALO-ARGENTINE SATELLITE SYSTEM FOR EMERGENCY MANAGEMENT, ECONOMIC DEVELOPMENT AND SOCIAL ADVANTAGE) as defined in the MoU [AD-01]. In such collaboration, a certain amount of SAOCOM data acquisition and processing resources has been reserved to ASI for exclusive use in the so-called Zone of Exclusivity (ZoE) shown in next figure in YELLOW, placed in the 10W-50E longitude range and 30-80N latitude range. Such ZoE has a southern latitude limit, in the longitude range from Gibraltar to Suez channel, constituted by the territorial waters of the North African Countries (12nm form the coastline) and hence not by a constant latitude arc. On such area, ASI has the right to use the SAOCOM system freely, fully and up to the saturation of the granted resources (around 150s of sensing time per orbit).

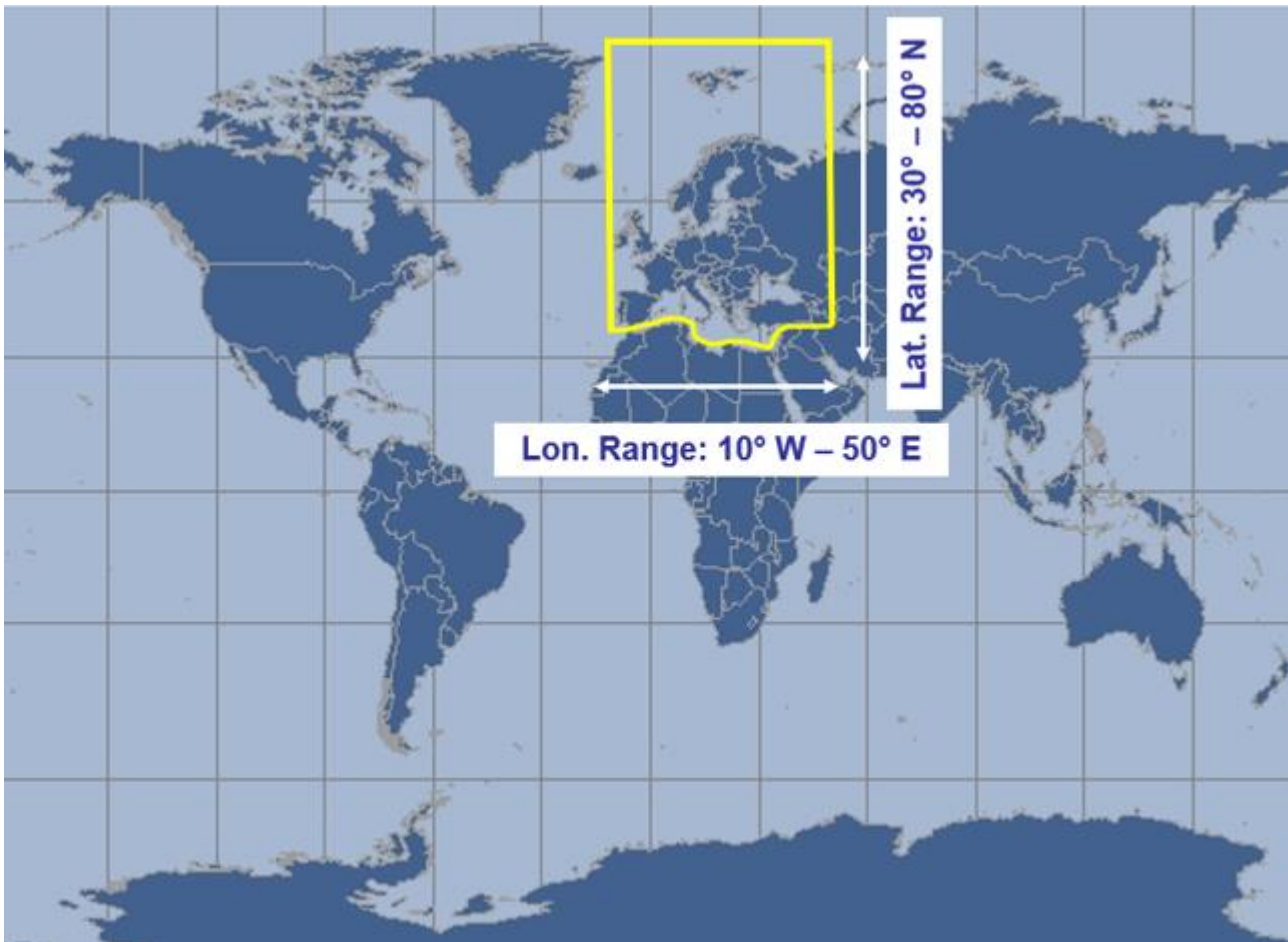


Figure 1 – ASI Zone of Exclusivity

The MoU [AD-01] underlines the importance of the SIASGE system as mainly dedicated to Risk Management and Agriculture, with the following priority applications:

Priority 1:

- Floods
- Landslides
- Seismic and volcano
- Oil spill
- Earthquake
- Natural or anthropic disaster

Priority 2:

- Soil moisture for agriculture production
- Soil and vegetation moisture for crop disease
- Soil moisture for Floods

Priority 3:

- Other applications considering emergencies not included in the previous Applications



Further information about the CONAE SAOCOM mission can be obtained (in Spanish) from here:

<https://catalogos.conae.gov.ar/catalogo/catalogoSatSaocomInfo.html>

and here:

<https://catalogos.conae.gov.ar/catalogo/catalogoSatSaocomDocs.html>

5. ACCESS TO SAOCOM DATA OVER ASI ZOE

5.1 USER MEMBERSHIP REQUEST AND REGISTRATION PROCEDURE

The delivery of the PRODUCTS is subject to the User Membership Request and Registration activity. The registration procedure requires the User (technically the Main User, see below):

- to define the composition of the group who will have access to the SAOCOM data
 - group shall mandatory include a single Main User
 - group could include zero or more final users which are Affiliated Users of the Main User
 - group could include zero or more final users which are Contractors/Consultants of the Main User
 - group size shall not exceed 50 members
- to fill the Membership registration form with information about
 - the group members (e.g. Name, Surname, email, etc)
 - the data exploitation project (e.g. duration, description, area of interest etc)
 - the foreseen use of the data, chosen from one up to five categories
- to self assign himself/herself to one of the allowed User categories (e.g. ASI User, National Science, International institutional, etc)
- to compile -for each organization involved in the final users group- the SAOCOM Release of Liability Declaration containing
 - list of the final users belonging to that organization
 - full identification (e.g. Name, Address, Country etc) of the Organization
 - full identification (e.g. Name, Surname and Function) of the Legal Representative of such organization
 - place and date of signature
 - the electronic qualified signature of Declarant's Legal Representative
- to explicitly declare (inside the membership request email): to have read, understood and fully accepted the ASI-CONAE SAOCOM License to Use Agreement
- to explicitly declare (inside the membership request email) to take all the penal and administrative consequences deriving from the falsification in documents and from incomplete and / or mendacious declarations relating to the information entered in the membership request
- to submit the membership request

In the case of approval of the Request of Membership by ASI, the user will receive the access credentials. Following the registration procedures, a specific account will be assigned to the User group. All personal data provided by the User group shall be electronically stored by ASI and by the ASI contractors that implement the operational activities of the SAOCOM system, in the name and on behalf of ASI (including the user support).

5.1.1 ELECTRONIC QUALIFIED SIGNATURE OF SAOCOM RELEASE OF LIABILITY DECLARATIONS

The signature of the release of Liability declarations, one declaration per each organization involved in the final users group, shall be executed electronically by the legal representative of the organization by mean of a Qualified Electronic Signature (QES). No other signature methods/types will be accepted. The presence of one/many incomplete, inconsistent or unsigned declarations will cause the rejection of the membership request.

5.2 SAOCOM PRODUCT SPECIFICATIONS

SAOCOM Product Specs can be retrieved downloading them from <https://catalogos.conae.gov.ar/catalogo/catalogoSatSaocomDocs.html>

SAOCOM – 1

LEVEL 1 PRODUCTS FORMAT



Figure 2 –SAOCOM Product Specs

Such page also contains many tutorials showing how to ingest the SAOCOM products in SNAP (<https://step.esa.int/main/download/snap-download/>) or QGIS (<https://www.qgis.org/en/site/about/index.html>).

5.3 ACCESS TO DATA ARCHIVED ON ASI DISSEMINATION SYSTEM

Data archived and catalogued in the ASI dissemination system, based on a customized version of the DHuS, can be accessed by log-in on <http://saocom.asi.it:8081> with the credential received after a successful membership request. The SAOCOM Data Hub is based on a version of the DHuS system (originally developed by ESA for EC Copernicus constellation) customized for the SAOCOM mission specificities. The DHuS features description and user guide can be found in <https://scihub.copernicus.eu/>

5.4 ACCESS TO DATA ARCHIVED ON CONAE DISSEMINATION SYSTEM

Data acquired on the ASI ZoE, which at the date is still archived and catalogued only in the CONAE dissemination system, can be requested to be transferred in the ASI dissemination system, searching the PRODUCT IDs of interest (a long string like EOL1CSARSAO1A1867930 or EOL1ASARSAO1A1867932 or EOL1CSARSAO1A1867959 etc) in either the following ways:

1. in an excel file, regularly updated and disseminated by ASI
2. in a kml file, regularly updated and disseminated by ASI
3. using the CONAE dissemination system <https://catalog.saocom.conae.gov.ar/catalog/>

5.4.1 RETRIEVING THE PRODUCT ID BY THE EXCEL FILE

ASI provides (and update periodically) an excel file containing the main metadata of all the products generated in the ZoE. Among the various fields, such file contains the following info:

- Product ID: is the long string (e.g. EOL1BSARSAO1A645992) identifying a product processed at some (non zero) level
- Parents ID: is a long string (e.g. EOL0ASARSAO1A640607) identifying the source Level 0 product which originated the product processed at some (non zero) level
- Processing level: the processing level of the product, chosen between L1A (single look complex, slat range), L1B (detected, ground range), L1C (geocoded on ellipsoid), L1D (geocoded on DEM)
- Platform; SAO1A (in future SAO1B too)
- Production Start / End time: the generation date of the product
- Sensor mode: STRIPMAP for data acquired at fixed azimuth steering or TOPSAR for data acquired in ScanSAR like mode
- Sensor submode: indication of the beam for STRIPMAP (S1 up to S10) or TOPSAR mode A or B or TOPSAR WIDE
- Polarization: Double polarization HHHV or VHV, Quad Polarization, Single polarization HH or VV
- Looking mode: RIGHT or LEFT
- Orbit type: ASCENDING or DESCENDING
- Acquisition Start / End time: time of the acquisition
- GeoJSON: a JSON formatted string containing a closed (5 vertices) polygon representing the product contour in latitude/longitude coordinates

A	B	C	D	E	F	G	H	I	J	K
Product ID	Parents ID	Title	Abstract	Processing level	Main	Platform	Sensor	Frame Start time	Frame End time	Production Start
EOL1BSARSAO1A645992	EOL0ASARSAO1A640607	SAOCOM SAR L1B Product	XML Annotated SAR Groun L1B	EO	SAO1A	SAR	2020-04-20T17:20:56Z	2020-04-20T17:21:11Z	2020-04-23T12	
EOL1BSARSAO1A1309475	EOL0ASARSAO1A794513	SAOCOM SAR L1B Product	XML Annotated SAR Groun L1B	EO	SAO1A	SAR	2020-01-31T05:36:08Z	2020-01-31T05:36:23Z	2020-12-30T17	
EOL1BSARSAO1A967559	EOL0ASARSAO1A940357	SAOCOM SAR L1B Product	XML Annotated SAR Groun L1B	EO	SAO1A	SAR	2020-08-18T04:55:56Z	2020-08-18T04:56:19Z	2020-08-26T15	
EOL1BSARSAO1A967553	EOL0ASARSAO1A939193	SAOCOM SAR L1B Product	XML Annotated SAR Groun L1B	EO	SAO1A	SAR	2020-08-17T20:54:45Z	2020-08-17T20:55:08Z	2020-08-26T15	
EOL1BSARSAO1A967583	EOL0ASARSAO1A935488	SAOCOM SAR L1B Product	XML Annotated SAR Groun L1B	EO	SAO1A	SAR	2020-08-16T20:36:34Z	2020-08-16T20:37:10Z	2020-08-26T15	
EOL1BSARSAO1A916411	EOL0ASARSAO1A908359	SAOCOM SAR L1B Product	XML Annotated SAR Groun L1B	EO	SAO1A	SAR	2020-08-08T19:48:24Z	2020-08-08T19:48:55Z	2020-08-11T10	
EOL1BSARSAO1A913988	EOL0ASARSAO1A908359	SAOCOM SAR L1B Product	XML Annotated SAR Groun L1B	EO	SAO1A	SAR	2020-08-08T19:48:24Z	2020-08-08T19:48:55Z	2020-08-10T10	

Figure 3 – ZoE contents, columns A-K

L	M	N	O	P	Q	R	S	T	U	V	W	X
Production End time	Country	Agency	Facility	Service	Sensor mode	Sensor submode	Polarization	Looking mode	Orbit type	Acquisition Start time	Acquisition End time	Acquisition
2020-04-23T12:26:52Z	Argentina	CONAE	CETT	USS	STRIPMAP	S5	QP	RIGHT	DESCENDING	2020-04-20T17:20:56Z	2020-04-20T17:21:11Z	154038
2020-12-30T18:17:58Z	Argentina	CONAE	CETT	USS	STRIPMAP	S4	DPVHV	RIGHT	ASCENDING	2020-01-31T05:33:36Z	2020-01-31T05:36:23Z	113185
2020-08-26T16:06:03Z	Argentina	CONAE	CETT	USS	TOPSAR	TW	QP	RIGHT	ASCENDING	2020-08-18T04:55:58Z	2020-08-18T04:56:21Z	206245
2020-08-26T16:01:49Z	Argentina	CONAE	CETT	USS	TOPSAR	TW	QP	RIGHT	DESCENDING	2020-08-17T20:54:47Z	2020-08-17T20:55:10Z	206260
2020-08-26T16:18:29Z	Argentina	CONAE	CETT	USS	TOPSAR	TW	QP	RIGHT	DESCENDING	2020-08-16T20:36:36Z	2020-08-16T20:37:13Z	206254
2020-08-11T11:29:17Z	Argentina	CONAE	CETT	USS	TOPSAR	TW	QP	RIGHT	DESCENDING	2020-08-08T19:48:26Z	2020-08-08T19:48:58Z	203838
2020-08-10T11:23:00Z	Argentina	CONAE	CETT	USS	TOPSAR	TW	QP	RIGHT	DESCENDING	2020-08-08T19:48:26Z	2020-08-08T19:48:58Z	203838

Figure 4 – ZoE contents, columns L-X

Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	AQ	AR	AS
Grid Path	Grid Row	GeoJSON																		
110	81	["type": "Polygon", "coordinates": [[[12.5478208015031, 41.4692438657005], [12.791461835127, 42.3830856404416], [13.0883008737404, 42.3395750405415], [12.8401123726373, 41.4259399046412], [12.5478208015031, 41.4692438657005]]]]																		
119	532	["type": "Polygon", "coordinates": [[[1.60645702915796, 48.3029158059822], [1.33035746557265, 49.2602383443857], [2.23943794846015, 49.3683446575434], [2.49787037604099, 48.4105380261496], [1.60645702915796, 48.3029158059822]]]]																		
121	583	["type": "Polygon", "coordinates": [[[13.9831364413268, 77.6252998650619], [17.662745519534, 78.7907373436063], [18.49124104769329, 79.7740529986711], [15.50113347558535, 78.516014219189], [13.9831364413268, 77.6252998650619]]]]																		
147	13	["type": "Polygon", "coordinates": [[[18.6612096824756, 80.4510276890622], [14.33280966128, 81.6559846819603], [4.10299718607442, 80.4903478085086], [9.11127474170882, 79.4108129248957], [18.6612096824756, 80.4510276890622]]]]																		
144	13	["type": "Polygon", "coordinates": [[[16.6337513659603, 79.5469590745687], [10.3609418346203, 81.5083126125715], [0.205256949638743, 80.3580847183424], [7.59493805124707, 78.5824756592], [16.6337513659603, 79.5469590745687]]]]																		
136	13	["type": "Polygon", "coordinates": [[[7.26637205063756, 78.3210050220833], [3.00428889560869, 80.0860744324678], [6.34174521452641, 79.0762455650997], [1.11103839600598, 77.442803726043], [7.26637205063756, 78.3210050220833]]]]																		
136	13	["type": "Polygon", "coordinates": [[[7.26637205063756, 78.3210050220833], [3.00428889560869, 80.0860744324678], [6.34174521452641, 79.0762455650997], [1.11103839600598, 77.442803726043], [7.26637205063756, 78.3210050220833]]]]																		

Figure 5 – ZoE contents, columns Y-AA

5.4.2 RETRIEVING THE PRODUCT ID BY THE KMZ FILE

ASI provides (and update periodically) a kml file containing for each product, the Product ID and the contour. The file can be easily loaded in Google Earth.

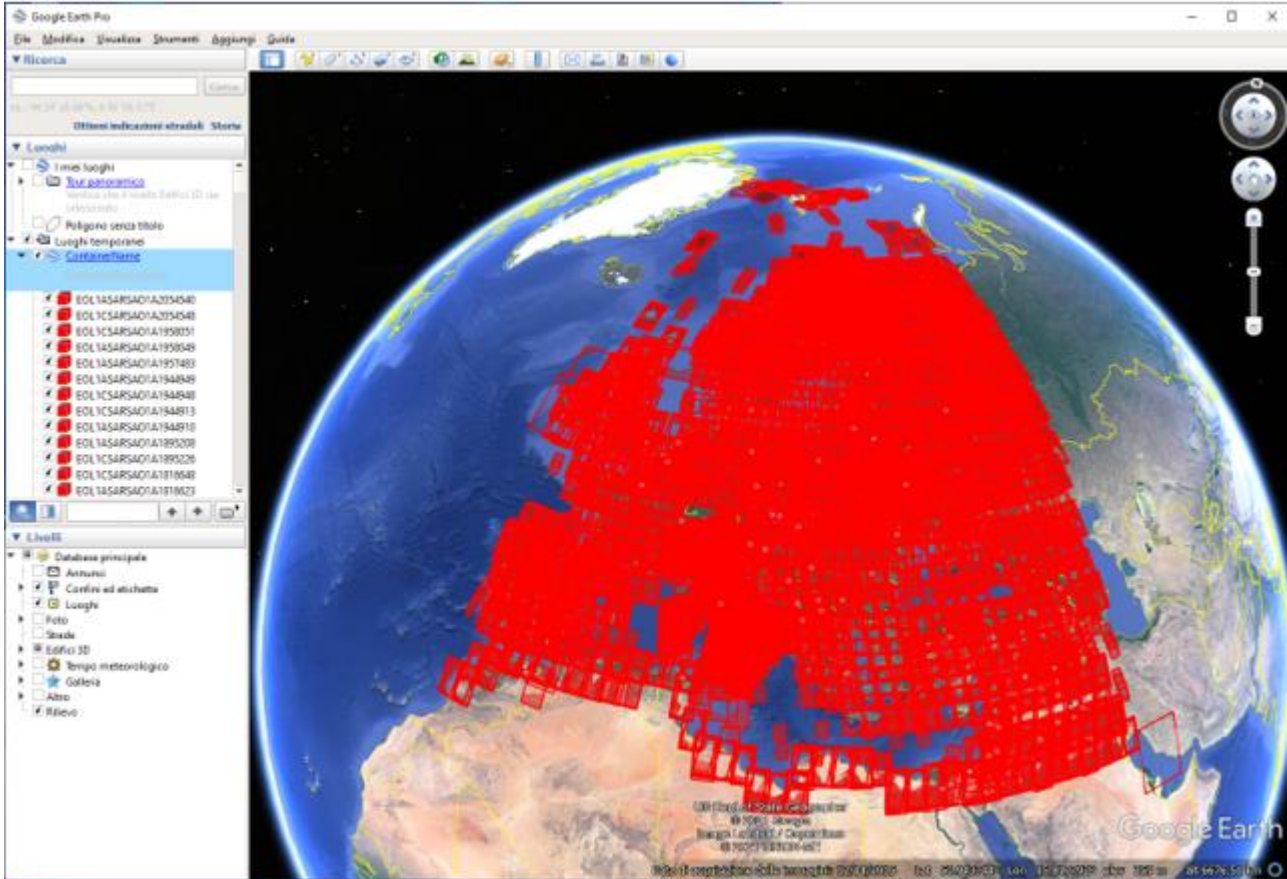


Figure 6 –ZoE contents, kml loaded in Google Earth

5.4.3 RETRIEVING THE PRODUCT ID BY THE CONAE CATALOGUE SITE

The CONAE dissemination system <https://catalog.saocom.conae.gov.ar/catalog/> allows to be searched with geo-spatial queries even **without any registration**.

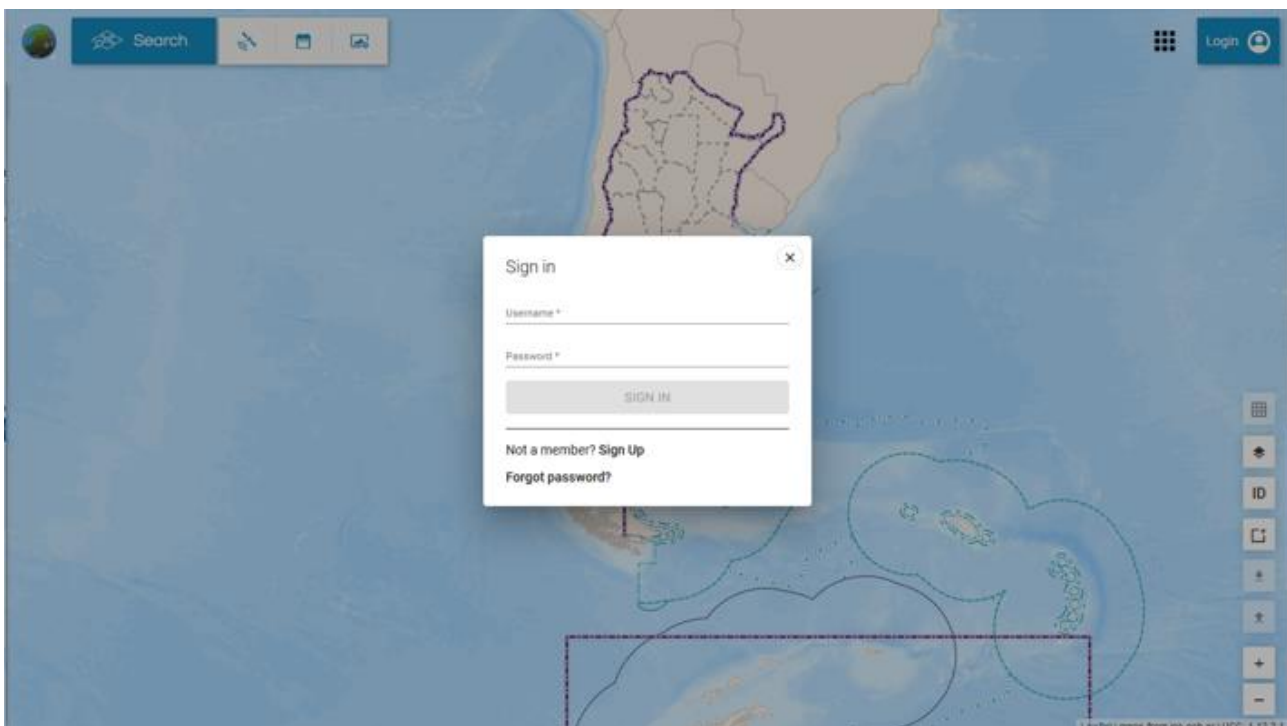


Figure 7 – CONAE dissemination system

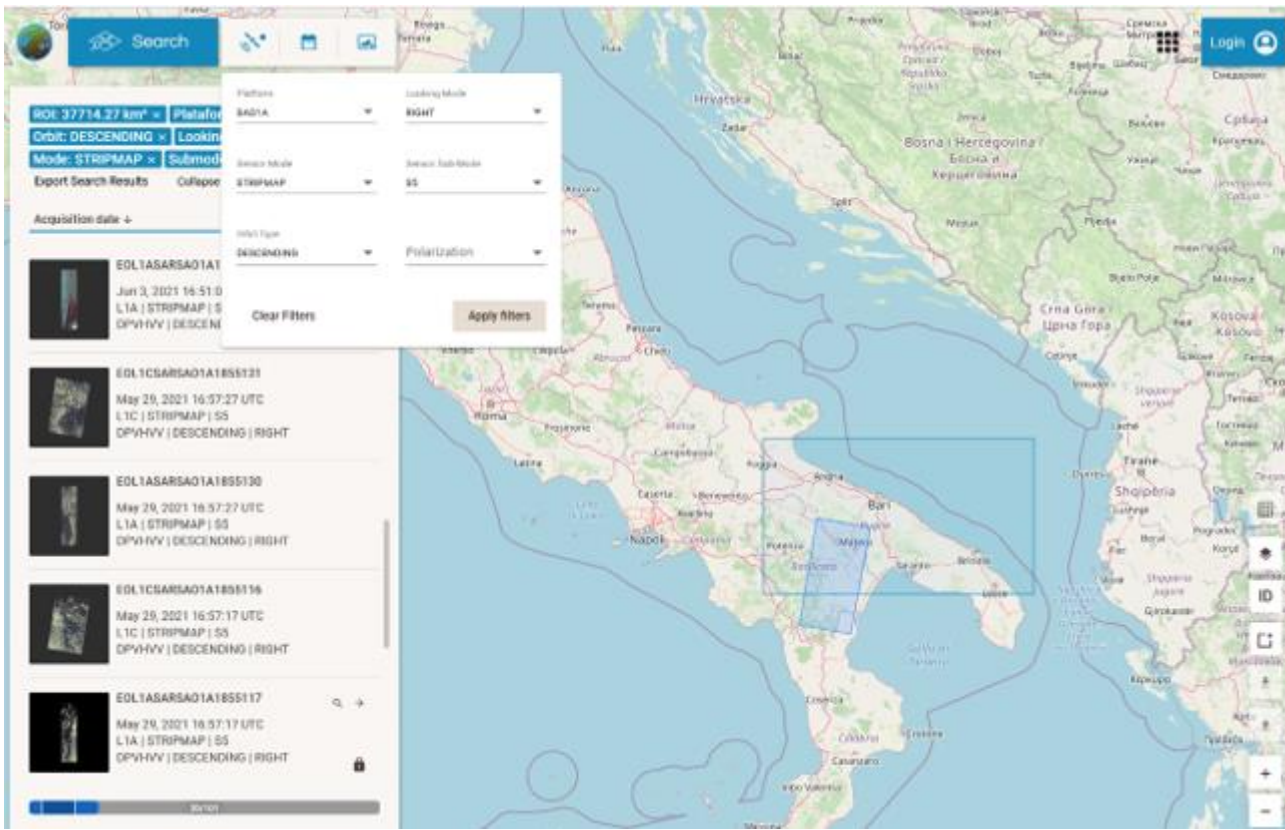


Figure 8 – CONAE dissemination system catalogue query

You can hence retrieve and annotate the IDs of the product/s of your interest, create a list (plain text, one product per row) and send it to the ASI SAOCOM Orders email which is SAOCOM_ORDERS@asi.it with mandatory subject “Existing SAOCOM Product Order”.

The products will then be ordered by ASI to CONAE and made available on the ASI DISSEMINATION SYSTEM <http://saocom.asi.it:8081> after a latency related to the order’s processing-time by CONAE and the product transfer-time from CONAE SAOCOM Archive.

5.5 ORDERING NEW PRODUCTS AND NEW ACQUISITIONS

This capability is actually implemented in a experimental way using EXCEL files sent via email. It will be available soon by mean of a full web interface.

5.5.1 ORDERING NEW PRODUCTS

When there is the need to obtain products having a level not actually present in the CONAE catalogue or in the ASI repository but for which at least a product level exists, it’s possible to order the processing at the wanted level. For requesting the generation of a product at some level Y it’s enough to find the ID of the product having a different level X (obiously the two products shall share the same RAW data) either from the CONAE catalogue or the ASI repository and then build a list of the products ID along with the desired level and the type of orbit to be used during the processing, a choice which mainly affect the quality of geolocation and the latency in the product generation. Shall be selected between:

- ONLINE VERY FAST: uses the GPS data acquired together with the SAR data, 90m accuracy
- OFFLINE FAST: postprocessed orbital data with 70m accuracy and a latency of 2 days

A	B	C	D	E	F	G	H	I	J
Username MUST be a registered username	Product ID e.g. EOL1CSARSAO1A1575872	Desired Product Level L1A, L1B, L1C, L1D	Geolocation type ONLINE VERY FAST, OFFLINE FAST	RESERVED TO ASI Production Title	RESERVED TO ASI User Ranking	RESERVED TO ASI Completion Status	RESERVED TO ASI Reason	RESERVED TO ASI StatusDateTime	RESERVED TO ASI EmailID
ITA_ScN1_0001_1-	EOL1CSARSAO1A2581067	L1B	OFFLINE FAST						

Figure 9 – Product processing orders

Note: the username inserted in the first column shall be from a valid registered user.

5.5.2 ORDERING NEW ACQUISITIONS

When a new acquisition is needed, shall be specified a larger number of parameters respect the product processing case, in order to define the acquisition conditions. The are:

- Platform Name: SAO1A or SAO1B
- Looking Mode: RIGHT (nominal) or LEFT (only available for few mminutes during one orbit)
- Orbit Direction: ASCENDING or DESCENDING
- Sensor Mode: STRIPMAP (fixed steering of the SAR beam) or TOPSAR (SCANSAR like)
- Sensor SubMode, i.e. the subswath chosen between
 - S1,...,S10 for Stripmap (multiple selections are allowed)
 - TNA, TNB or TW for TOPSAR (multiple selections are allowed)
- Polarization, chosen between
 - SPHH (transmits and receives in H) or SPVV (transmits and receives in V) for a Single polarization
 - DPHHHV (transmits in H and receives in H and V) or DPVHV (transmits in V and receives in H and V) for a Double polarization
 - QP (transmits in H and V and receives in H and V) for a full Quadruple polarization
- Acquisition validy START date & time, in DD-MM-YYYY HH:MM:SS format, refers to the 1st acquisition period only, not to entire duration of the periodic acquisitions time span; Acquisition start shall be at least 3 days in the future respect the date of submission of the order by ASI to CONAE GS so a sufficient time margin shall be used taking into account possible delays (non working days, etc)
- Acquisition validity STOP date & time, in DD-MM-YYYY HH:MM:SS format, refers to the 1st acquisition period only, not to entire duration of the periodic acquisitions time span; a time span in days shorter than the acquisition period implies non-zero “no acquisition days” at the end of such time span
- Acquisition time period, related to a single shot or many periodic acquisitions. It is formed by summing the time interval defined by the acquisition validity start and stop date/time and a days interval in which no acquisition shall take place (see next figure)
- Number of periodic acquisitions, as an integer number of acquisitions; for a one shot acquisition shall be left empty; **NOTE: the maximum time span resulting from the acquisition validy window, acquisition time period and number of periodic acquisitions shall be less than 395 days otherwise the order is refused by the SAOCOM system**
- Processing Level of the product to be generated after a successful acquisition, chosen between L1A, L1B, L1C, L1D
- Geolocation type related to the type of orbit to be used during the product generation, a choice which mainly affect the quality of geolocation and the latency in the product generation. Shall be selected between:
 - ONLINE VERY FAST: uses the GPS data acquired together with the SAR data, 90m accuracy
 - OFFLINE FAST: postprocessed orbital data with 70m accuracy and a latency of 2 days
- All access flag
 - YES, implies requesting an acquisition each time the satellite accesses the region of interest within the time windows chosen to acquire images. The procedure maximizes the number of images collected from the area. As this option is highly demanding on the system, as it is evaluated according to priorities and other user requests, it could be less likely to be planned
 - NO, implies requesting acquisitions in such a way that each point of the region of interest is covered at least once (if this were possible). The procedure maximizes the coverage of the area; leave empty for NO
- Partial cover flag
 - YES, mplies the option of accepting an acquisition as valid even when it partially covers the region of interest considered. This option, being less demanding on the system, will have a greater probability of being planned

- NO, implies the option to accept as valid those acquisitions that cover the region of interest in a value equal to or greater than 98%; leave empty for NO
- Rectangular Area of Interest. **Shall be inside ASI ZoE** and is defined by Top-Left corner and Bottom-Right geographic coordinates, expressed in lat,lon decimal degrees; **NOTE: acquisitions which are shorter than 6s cannot be programmed. This roughly corresponds to an Aol which has the Nord-South side of 50km i.e. 0,45 deg in latitude difference, at Italian latitudes**

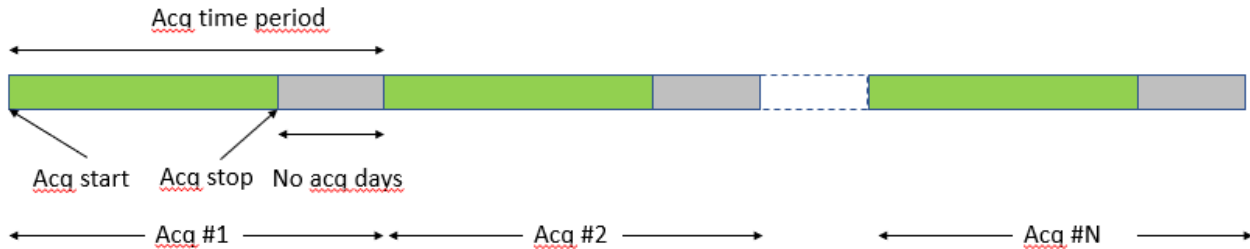


Figure 10 – Periodic acquisitions

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	
1	Username MUST be a registered username	Platform Name SAO1A, SAO1B	Looking Mode LEFT, RIGHT	Orbit Direction ASCENDING, DESCENDING	Sensor Mode STRIPMAP, TOPSAR	Sensor SubMode (multiple selection allowed, but coherent to Sensor Mode)																		Acquisition validity START date & time For periodic acquisitions refers to 1st period only DD-MM-YYYY HH:MM:SS	Acquisition validity STOP date & time For periodic acquisitions refers to 1st period only DD-MM-YYYY HH:MM:SS	
2						Polarization (single selection allowed, all sensor modes are allowed)																				
3						STRIPMAP						TOPSAR						Polarization								
4						Sensor Mode												Single Pol		Double Pol		Quad pol				
5						S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	TNA	TNB	TW	SPHH	SPVV	DPHHHV	DPVHVV	QP			
6	ITA_ScN1_001_1-	SAO1A	RIGHT	DESCENDING	STRIPMAP		X						X						X						15/11/2021 00:00:00	30/11/2021 00:00:00

Figure 11 –Acquisition orders, columns A-Y

	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI
1	Acquisitions period in days Leave empty for a single acquisition or any integer >= 1	Number of periodic acquisitions Leave empty for a single acquisition or set to any integer > 1	Processing Level L1A, L1B, L1C, L1D	Geolocation type ONLINE VERY FAST, OFFLINE FAST	All access flag YES, empty=NO	Partial cover flag YES, empty=NO	RECT for Rectangular Aol	Rectangular Area of Interest in decimal degrees shall be inside ASI ZoE e.g. 32.345,47.890		RESERVED Acquisitic
2								TL lat,lon	BR lat,lon	
3										
4										
5			L1A	ONLINE_VERY_FAST	YES	YES	RECT	14-133014,16.81	41.0876051,16.901777	
6										

Figure 12 –Acquisition orders, columns Z-AH

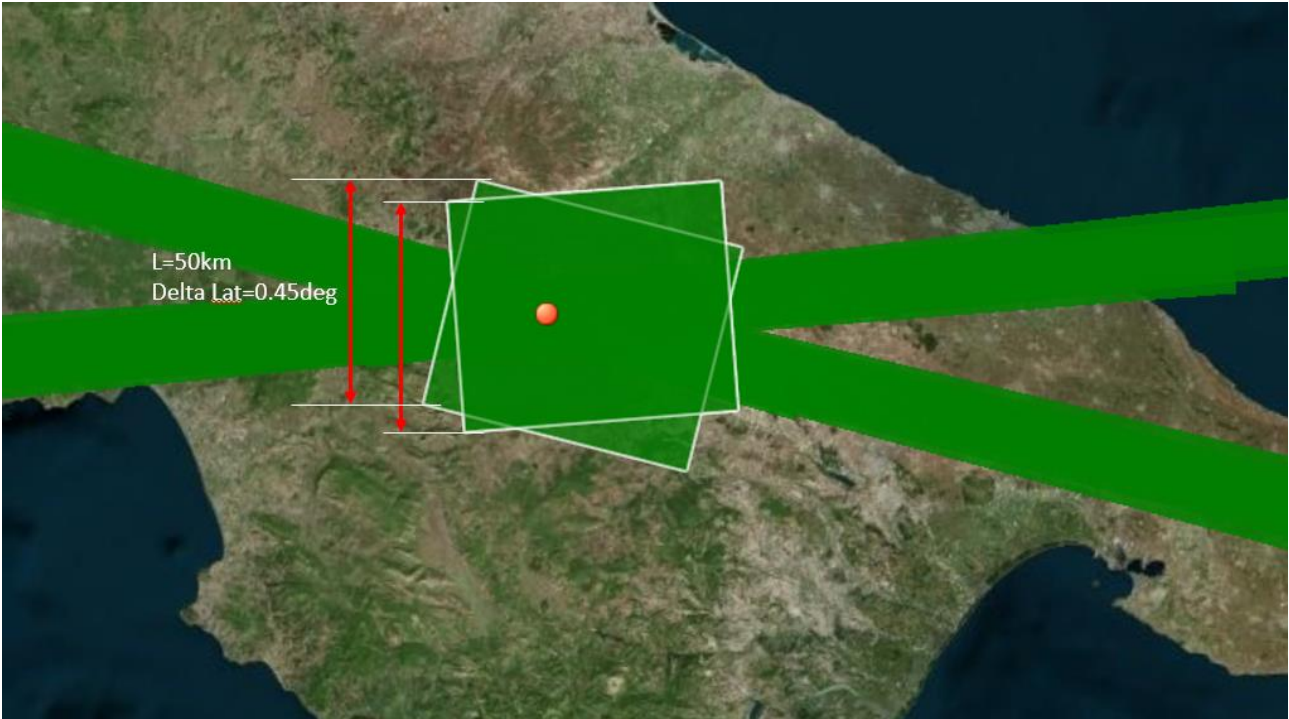


Figure 13 – Minimum area which can be acquired

6. HOW TO COMPILE THE MEMBERSHIP REQUEST

The following paragraph describes the Membership Registration form which shall be compiled by the Main User, filling up all the requested fields in the two sections of User Info and Project Info.

The **User Info** section contains identity information of all the members of the user group, whose size ranges from #1 (i.e. the Main User alone) to #50, and includes users who are affiliated to the Main User and users who are Contractor or Consultant of the Main User. All fields, for any filled rows of the table, are mandatory, filling of the first row it's also mandatory.

Note that the SAOCOM License to Usage Agreement allows the freely dissemination and usage of the DERIVED products, with minimal obligations for the User who generated them. Hence, **people which intend to exploit only the DERIVED products and NOT the ORIGINAL or PROTECTED products, does not need to register themselves as SAOCOM users.**

ALL FIELDS ARE MANDATORY - MAIN USER IS MANDATORY - AFFILIATED or CONTRACTOR/CONSULTANT ARE OPTIONAL											
TYPE	Name	Surname	Company or Institution	Address	City	Zip code	State or Province	Country	Telephone <small>shall include the international prefix in the form +NN and NOT 00NN</small>	e-mail <small>shall be a valid email</small>	Privacy Advertisement
MAIN	Jack	Torrance	Overlook Hotel	3294 Youngfield	Wheat Ridge	80033	Colorado	United States	+13032385050	jack.torrance@gmail.com	YES
AFFILIATED	Lisa	Burns	ACME corp.	3519 South College Av	Fort Collins	80525	Colorado	United States	+13032381260	lisa.burns@acme.com	NO
AFFILIATED	Louise	Burns	ACME corp.	3519 South College Av	Fort Collins	80525	Colorado	United States	+13032381270	louise.burns@acme.com	NO
CONTRACTOR/CONSULTANT	Delbert	Grady	NewCo	3294 Youngfield	Wheat Ridge	80033	Colorado	United States	+13032381280	delbertgrady@acme.com	YES

Figure 14 – Registration form: user info

The required fields for this section are:

- TYPE: can be MAIN for the Main User (mandatorily in the first row), AFFILIATED or CONTRACTOR/CONSULTANT for optional users
- Name, Surname: of the user
- Company or Institution: the name of the organization in which the user works; fill with “None” for users without any affiliation (e.g. private citizens)
- Address, City, Zip code, State or Province, Country, Telephone: data referring to the organization to which the user belongs to, or to the user for private citizens; phone number shall include the international prefix in the form +NN and NOT 00NN (e.g. +39 and not 0039, in the case of Italy)
- e-mail: shall be a valid email
- Privacy Advertisement: use this flag to signal if you allow ASI to send you information about SAOCOM mission like: news, workshop notices, etc. All the information entered in the Membership Request are managed by ASI according to the [AD4] SAOCOM PRIVACY POLICY document, contained in the SAOCOM Data Package

The **Project Info** section contains the project data and Main User (self classification) category assignment.

	A	B	C
1	Title (mandatory)	Snow and Ice properties on rockyed mountain	
2	Duration (mandatory, in number of months - digits not letters)	12	
3	Description (mandatory)	<p>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla pharetra tincidunt magna, sit amet cursus ante fermentum at. Vivamus semper arcu eu risus volutpat volutpat. Aliquam malesuada nunc et maximus cursus. Fusce id mollis diam. Nullam interdum quam at venenatis auctor. Pellentesque a magna scelerisque, ultricies nunc nec, convallis lorem. Donec orci ipsum, blandit vel bibendum quis, tristique nec massa. Sed efficitur ligula quis consectetur hendrerit. In fringilla risus vitae purus faucibus cursus. Orci varius natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Etiam varius mauris vel porttitor euismod. Vestibulum ac nisi magna. Cras ut dolor porta, ultrices purus pretium, interdum erat. In consequat nibh sed est ultrices gravida. Phasellus sed tempor lorem. Aenean in sem ultrices, auctor nulla et, scelerisque nisi. Ut sed tristique lacus. Orci varius natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam a porta felis. Morbi vitae ultrices eros. Nulla ipsum.</p>	150
4	Area of Interest (1st, mandatory)	Colorado rockyes	
5	Area of Interest (2nd, optional)		
6	Area of Interest (3rd, optional)		
7	Use of Data (1st, mandatory)	Ice	
8	Use of Data (2nd, optional)	Snow	
9	Use of Data (3rd, optional)	Hazards	
10	Use of Data (4th, optional)		
11	Use of Data (5th, optional)		
12	User Category (mandatory)	Non-national commercial	

Figure 15 – Registration form: project info

The required fields for this section are:

- Title: mandatory, is the project title
- Duration: mandatory, duration of the project in number of months - digits not letters
- Description: mandatory and containing >150 words; a word counter on the right, help to keep track of the minimum length of the description; **a project description with less than 150 words cannot be accepted**
- Area of Interest 1st: mandatory, no specific format required
- Area of Interest 2nd: optional, no specific format required
- Area of Interest 3rd: optional, no specific format required
- Use of Data 1st: mandatory, choose between allowed categories the one better resembling the foreseen use of data
- Use of Data 2nd: optional
- Use of Data 3rd: optional
- Use of Data 4th: optional
- Use of Data 5th: optional
- User Category: mandatory, choose between allowed categories the one better resembling your category, see below

The next table lists the categories of Users along with some example and notes. Please try to select in the Project Form the category that best resembles the one you belong to and use “Generic” only if you cannot adequately fit in the other categories. **Generic user shall always have the lowest possible privileges.** Please don’t use the “Special user” category unless agreed with ASI.

National categories are reserved for Italian citizens.

Category name	Description and Examples
ASI Users	ASI employee only

National (Italian) Security Organizations	
National (Italian) Science	Italian University, CNR, INGV, Research Foundation
National (Italian) Institutional	Italian organizations e.g. ARPA, Park Authorities, Natural Reserves, Foundations without research missions, Regions, Municipalities, ISPRA...
National (Italian) Commercial	Italian companies e.g. Leonardo, OHB, Planetek, Exprivia-.ACS, e-GEOS, Telespazio,...
National (Italian) Spin off or start-up	Italian Spin off or start-up
National (Italian) non profit organization	Italian organizations e.g. ONG, ONLUS
Non-national Science	e.g. University of Twente, CSIRO, NASA, ESA, CNES, JRC, USGS, DLR,...
Non-national Institutional	e.g. FAO, UN,....
Non-national commercial	e.g. CLS, EOMAP, HyVista,...
International Spin off or start-up	Non Italian Spin off or start-up
International non profit organization	e.g. PLM, International environmental organizations, International volunteer organizations,...
Generic User	Note: Use only if you cannot adequately fit in the previous categories
Special users	Special users for whom ad hoc policies can be created

Table 6-1 User categories

7. IMPORTANT – HOW TO SEND THE REQUESTS

7.1 MEMBERSHIP REQUEST

Once the User Info and Project Info sections have been completed (please double check all fields are correctly compiled, that they are consistent, etc), put the Membership Registration form as an attachment to an email, together with the various Liability declarations. No particular name coding is required but please use meaningful names.

The email destination address shall be: SAOCOM_UserMng@asi.it

The email subject shall mandatory be: [SAOCOM Membership Request](#)

The email body shall mandatory include the declaration below:

The Main User takes all the penal and administrative consequences deriving from the falsification in documents and from incomplete and / or mendacious declarations relating to the information entered in the Membership request. The Main User also declares to have read, to have understood and to accept all the terms and articles contained in the ASI-CONAE SAOCOM License to Use Agreement.

The number of liability declarations shall mandatory match the number of distinct organizations as reported in the Membership Registration form.

7.2 PRODUCT OR NEW ACQUISITION REQUEST

The emails containing in attach the compiled excel forms (which shall include for each row a valid username) shall be sent to SAOCOM_ORDERS@asi.it

8. IMPORTANT – SUMMARY OF DO AND DON'T WITH SAOCOM IMAGES

The SAOCOM products are made available by CONAE to ASI under a formal License (SAOCOM Licence to Use Agreement). ASI then disseminate such products to the final users by formally making them affiliated to ASI itself. Hence the rules CONAE does apply to ASI are fully inherited by the final users.

Below is reported a non-exhaustive summary of the main rules and obligations related to the SAOCOM License (in square brackets the cross reference with the articles of the SAOCOM Licence to Use Agreement):

- During the registration phase users shall have identified themselves and shall have accepted the clauses of the SAOCOM License [see III. Permitted Uses.1]
- License does not allow commercial, online or web uses [Definitions]
- Users shall have the right to publish an extract of the SAOCOM Products, to the extent and under the terms stipulated in Article IX of the SAOCOM Licence [see III. Permitted Uses.4]
- Any use of the SAOCOM Original or Protected products other than for those users authorized by the SAOCOM License is prohibited. The transfer in whole or in part of the SAOCOM License, or of any of the rights related to the SAOCOM License or similar assignments to third parties, is explicitly prohibited unless with the prior written consent of CONAE and ASI [IV. Prohibited Uses.1]
- The User shall not reproduce, transfer, trade, sell, rent, lease, distribute or make available to third parties in any way, whether for a fee or free of charge, the Original or Protected SAOCOM products or the supplementary and/or ancillary information or data provided by CONAE together with a SAOCOM products, unless explicitly authorized by CONAE and ASI in writing on an ad hoc basis [IV. Prohibited Uses.2]
- None of the Original or Protected SAOCOM products under the SAOCOM License may be used for commercial purposes [IV. Prohibited Uses.2]
- No modification or removal of the copyright notice, the brands or any other feature that accredits CONAE's rights in the Original or Protected SAOCOM products is permitted [IV. Prohibited Uses.3]
- Any conduct that is not in compliance with the clauses of the SAOCOM License or that does not comply with it, may cause the termination of the License granted and will generate a direct responsibility of the final user (via the Liability declarations) with the compensation of the damage to CONAE's rights [see IV. Prohibited Uses.4]
- The final user shall add the following note to a Protected product: "SAOCOM® Product - ©CONAE - (year of acquisition). All rights reserved" Product processed under CONAE license in the framework of the SIASGE Cooperation Agreement CONAE-ASI" [V. Protected Products.2]
- The final user commits to notify CONAE and ASI in case of development of a new intellectual property right in the course of the processing of a Protected Product [V. Protected Products.4]
- The final user is entitled to attach its own copyright notice on the Protected product and shall also attach the following notice on the Protected Product: "Product produced from Original SAOCOM® Product - ©CONAE - (year of acquisition)" [V. Protected Products.5]
- The final user may freely dispose of the Derived product but must mention the SAOCOM Product as the source by means of the following notice "Product produced from Original SAOCOM Product - ©CONAE – COMISION NACIONAL DE ACTIVIDADES ESPACIALES (year of acquisition)" [VI. Derived Products.2]
- The final user may not distribute, duplicate or transfer to the Derived products the Ancillary Data provided by CONAE together with a SAOCOM Product [VI. Derived Products.3]
- The final user guarantees the respect for CONAE's intellectual property rights over the Original and Protected SAOCOM products and undertakes to notify CONAE and ASI in writing of any illegal use, including that of third parties, of the Original SAOCOM products supplied or the Protected products processed under the terms of the SAOCOM License [VII. Intellectual Property.5]
- Any infringement and/or violation of CONAE's intellectual property rights will cause the extinction of the right to use the SAOCOM Products and will entail the direct responsibility of the final user (via the Liability declarations), including the reparation of damages caused to CONAE [VII. Intellectual Property.6]
- Final user shall have the right to use SAOCOM Products only for the purpose of the performance of the Project. Once the same is finished, the final users will not have the right to continue with the Use of the SAOCOM Products, nor to keep it, nor to keep copies of it, unless otherwise agreed with CONAE and ASI [VIII. Use of SAOCOM Products with Affiliated Users. Joint Project.2]
- CONAE shall have the right to terminate this License immediately in the event of breach of any of the clauses by the final user, as specified therein, and to request the immediate return of the SAOCOM Products. Any conduct not in conformity with or in violation of the instructions and directives under the SAOCOM License to use or of further and/or different ones given by CONAE shall cause a direct liability

of the final user (via the Liability declarations) also for the compensation of the damage in case caused to CONAE's rights [VIII.Use of SAOCOM Products with Affiliated Users. Joint Project.3]

- The final user may publish an extract of the Original SAOCOM product or the Protected product in printed form or on its website, only as part of academic works or for promotional purposes . In both cases, CONAE prior consent must be requested by sending an e-mail to: aviso.got@conae.gov.ar including the reference of the work. To this end, the image (Product) may be published in JPEG or printed format, with a maximum size of 1024x1024 pixels and with the obligation to mention CONAE's copyright over the SAOCOM Product in the publication [IX.Reports, Publications and Participation in conferences.1]
- CONAE shall always have the right to deny or restrict access to SAOCOM Products when it deems it necessary, or when the availability of the products or their distribution is limited due to reasons of national security, emergencies, satellite maintenance and health, or force majeure [X.Warranties and Limitations of Liability. Restrictions.1]
- The final user (via the Liability declarations) shall be liable for the use they give to SAOCOM Products supplied by CONAE [X.Warranties and Limitations of Liability. Restrictions.2]
- The SAOCOM Product is delivered "as is", therefore, CONAE does not assume nor will be responsible for the accuracy or suitability of the SAOCOM Products that the User has had or may have in view with the use thereof, or with any present or future expectation that the User may have with respect to the acquisition, application and/or functionality of the SAOCOM Product, and this may not give rise to a claim of any kind [X.Warranties and Limitations of Liability. Restrictions.4]
- Likewise, since the SAOCOM Products are complex and processed products, CONAE does not guarantee that the Product is free from any defect, bug, error or omission. Therefore, the final user shall not have the right to file any lawsuit or claim against CONAE (or ASI via the Liability declarations) for any direct or indirect loss and/or damage connected to the use of the SAOCOM Products [X.Warranties and Limitations of Liability. Restrictions.5]
- In no event shall CONAE (or ASI via the Liability declarations) be liable for any direct or indirect damages, or for losses, whether foreseeable or unforeseeable, of any kind connected to the use of the product [X.Warranties and Limitations of Liability. Restrictions.6]
- CONAE hereby has the right to terminate this License immediately in case of breach of any of the clauses and conditions contained herein by the final user [XII.Right of Termination.1]
- In the event that CONAE terminates this License in accordance with the foregoing paragraph, the User shall have no right to any claim; in such case, the final user shall return the SAOCOM Product(s) and any copies thereof, and shall no longer have any right of use over it [XII.Right of Termination.2]
- The License shall come into force on the date of ASI approval of the registration of the final user and shall remain in force until it is superseded by a license renewal or terminated by CONAE pursuant to the foregoing Section XII above [XIII.Entry into Force. Duration.1]

In addition to the previous rules:

- the access to the SAOCOM product dissemination system and therefore the possibility of requesting products generated by new acquisitions and/or archived acquisitions, is subject to the approval of the ASI, as specified below, and control/monitoring by the competent Institutional Authorities on the matter; in particular, in order to guarantee national security, territorial integrity, the protection of national and foreign policy interests, these Authorities may impose limitations both on the distribution of the Products on specific areas of the globe and on the registration and/or the operations of some Users. ASI is required to provide to these Authorities all technical and operational support necessary for the execution of the aforementioned activities
- the approval by ASI of a request for registration by an user and therefore to the access to the system takes place after the following actions by the user himself: supply of his/her personal data, compilation of the project form, supply of liability declarations signed with a valid qualified electron signature and explicit acceptance of the terms and conditions of the SAOCOM license to Use Agreement
- the obtaining of products generated by new and/or archived acquisitions is guaranteed to users, regardless of the nationality and type of organization to which they belong, but it is subject to the checks previously indicated
- each final user can only use a part of the CONAE SAOCOM system and of the ASI dissemination resources, coded in terms of user quotas
- each user is assigned a specific priority in order to allow the system to resolve any conflicts may arise during the acquisitions planning phase
- each user will have a specific privilege for request new acquisitions or products generated from archived acquisitions or both
- the SAOCOM products are supplied to all users at no cost (free of charge)

- the user is required to provide ASI, on a yearly basis, with a summary report on the actual use of the products and on the results obtained from the exploitation activities
- the user acceptance (during the registration phase) of the SAOCOM license to Use Agreement, with the related terms and conditions for data usage, is mandatory
- the release of Liability declarations, signed with a valid qualified electronic signature, is mandatory