

La missione SAOCOM

Patrizia Sacco

Agenzia Spaziale Italiana / Italian Space Agency (ASI)

Workshop “Tecnologie satellitari e analisi multi-rischio”

Roma, 27-28 Maggio 2025

SAOCOM - L-band polarimetric SAR

SAOCOM-SAR is an L-band polarimetric SAR instrument, the prime payload of the mission providing all weather, day/night observations to satisfy most of the applications considered in the Argentinean National Space Program, involving studies on agriculture, fishery, forestry, weather, hydrology, oceanography, emergencies, natural resources of land and sea, urban areas, cartography, geology, mining, soil exploitation, archeology and health

SAOCOM1A

lanciato il 7 ottobre 2018

SAOCOM1B

Lanciato il 30 agosto 2020



REVISIT TIME: 8 days (1A + 1B)

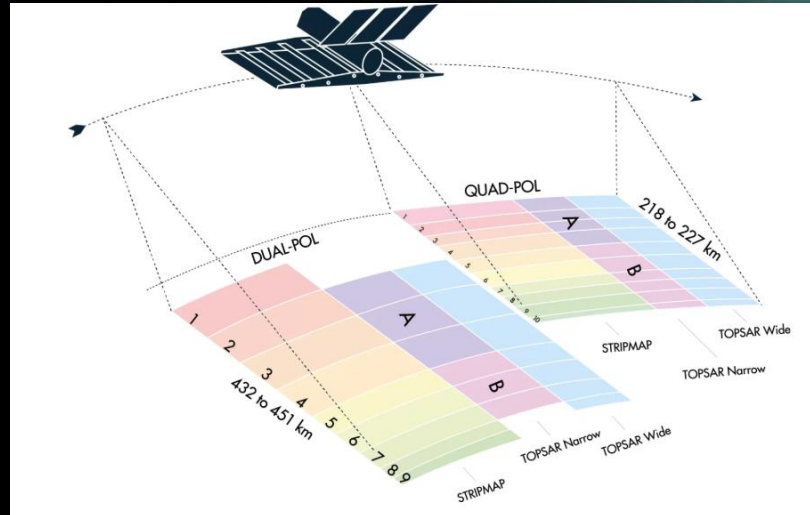
BEST RESOLUTION: 10 mts

QUAD POLARIZATION

STRIPMAP: 40 x 74 km

TOPSAR: 350 x 445 km

ANGLE OF VIEW: from 20,7° to 50,2°



SAOCOM in the framework of SIASGE

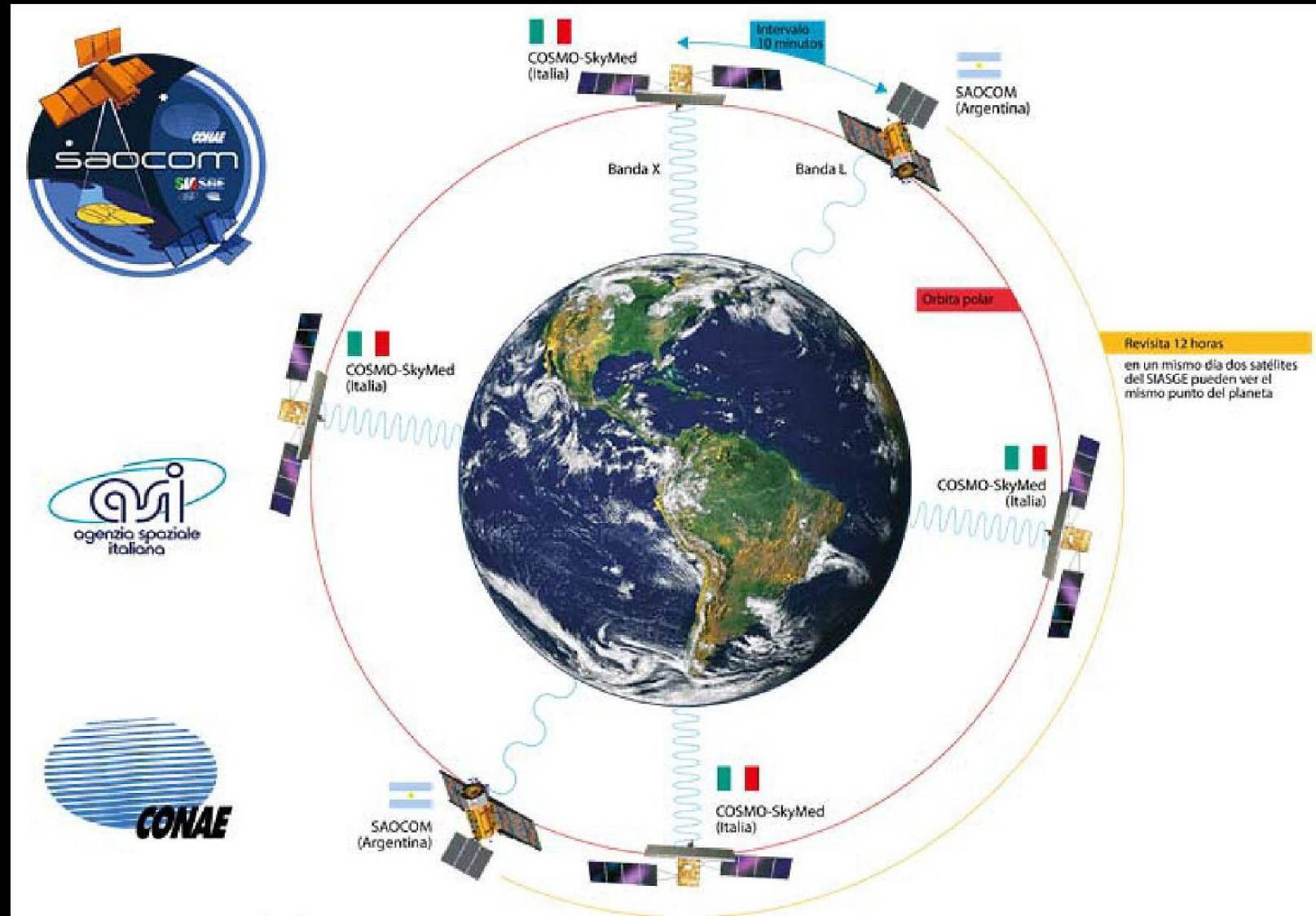


SIASGE is the Italian-Argentinian satellite system for Disaster Management and economic development. Such system is the result of the partnership between two countries, which have decided to develop together an operationally integrated system to manage and prevent major natural and environmental emergencies.

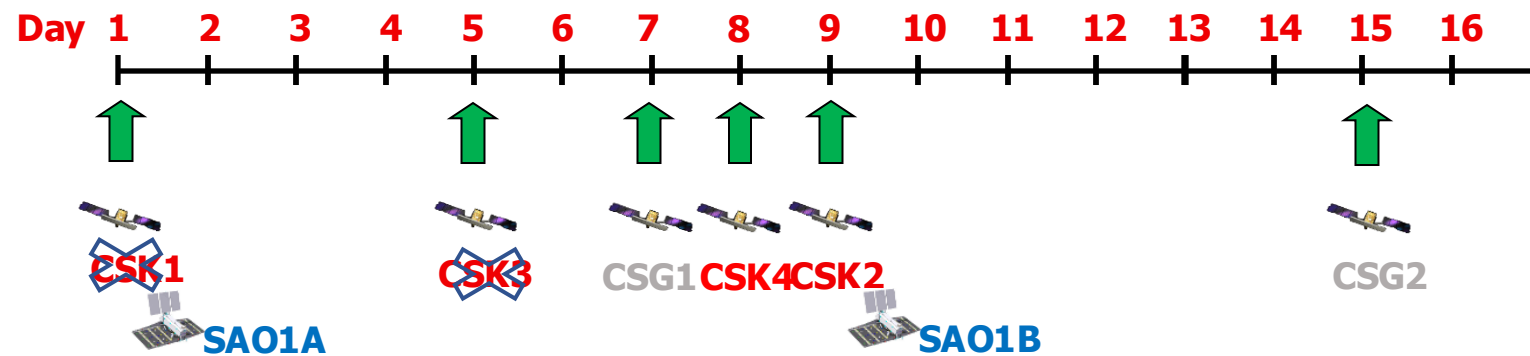
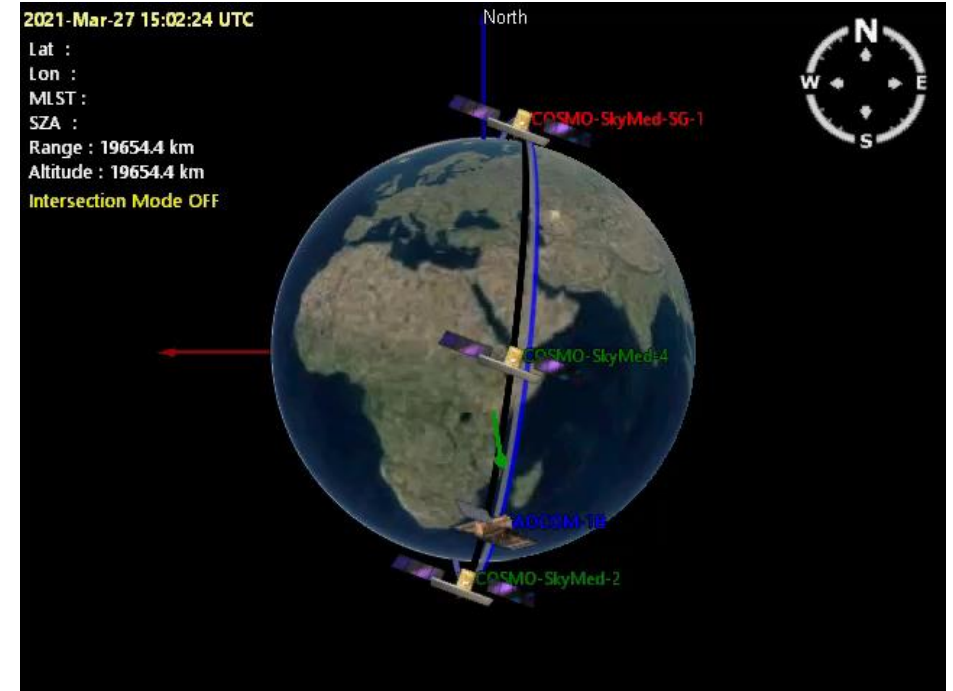
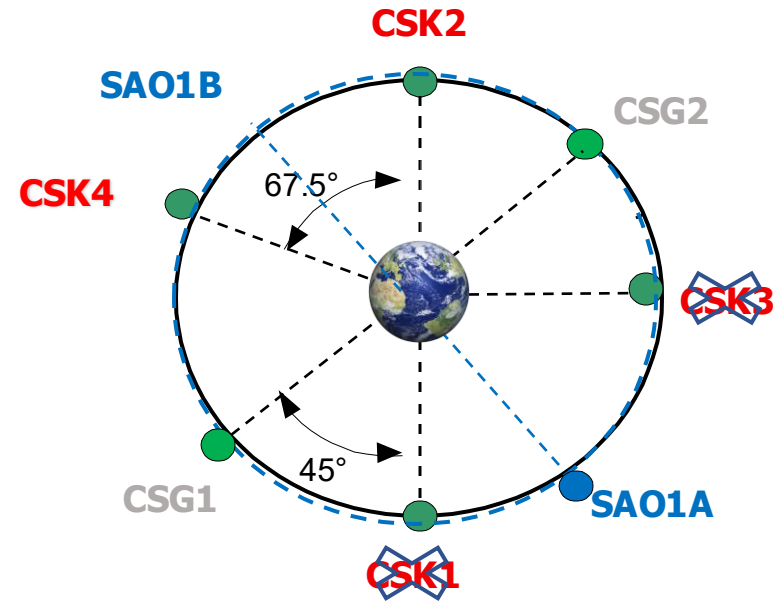
The SIASGE system is made up of:

- COSMO-SkyMed I gen. X-band const.
- SAOCOM 1 L-band const.

The SIASGE system meets the needs of the civilian communities of both countries and of the international community as well, in the areas of monitoring and management of environmental risks, emergency management, scientific and commercial applications

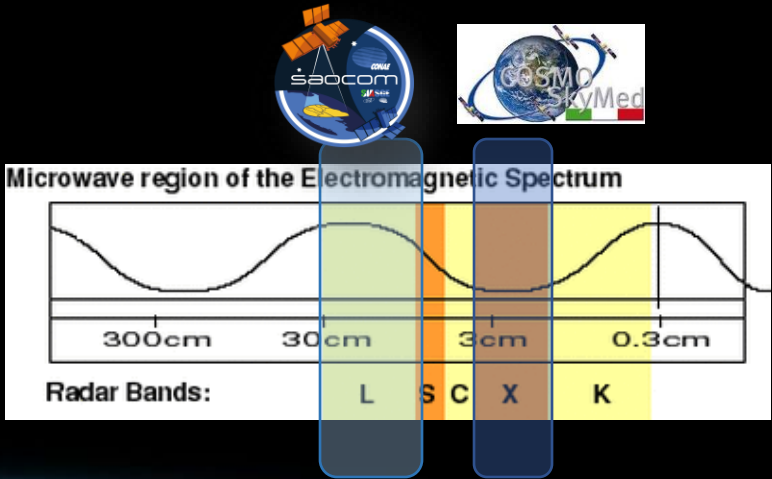
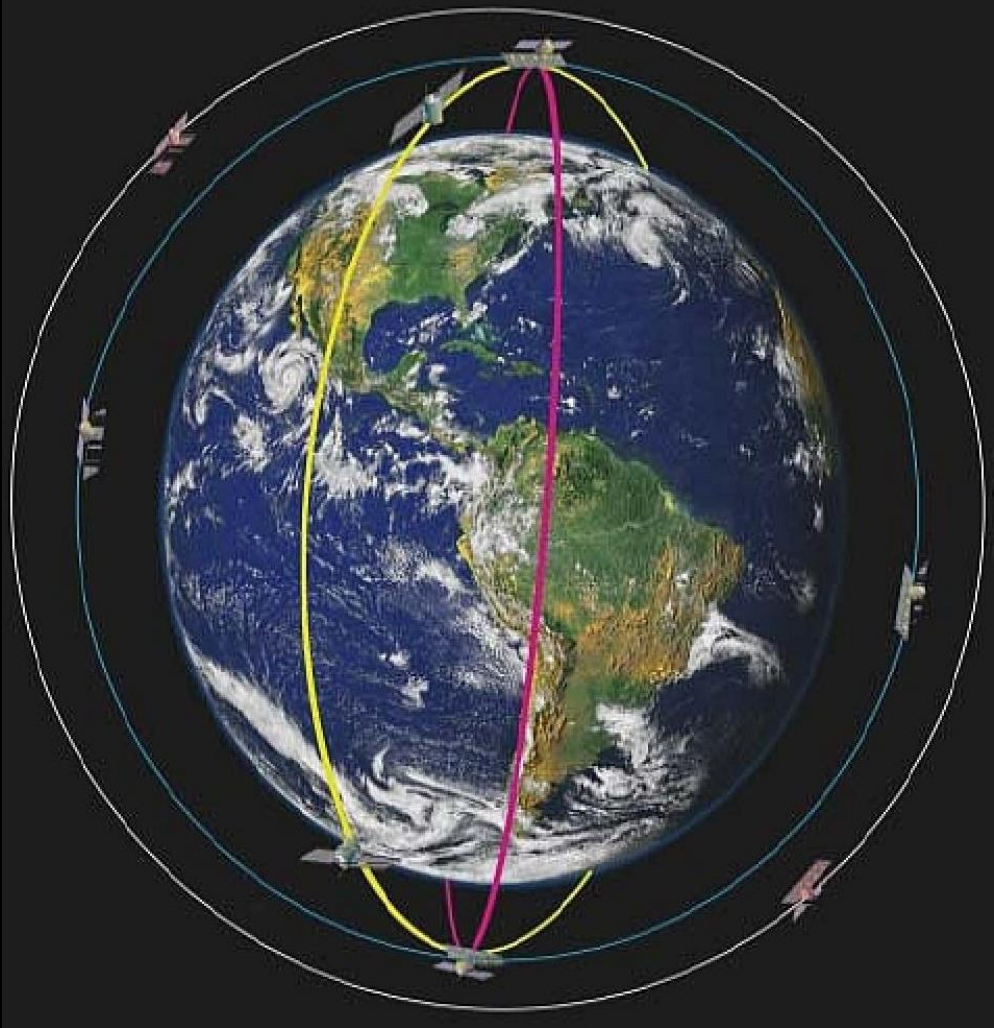


SIASGE Constellation



Interferometric revisit:

SIASGE – L-band and X-band data

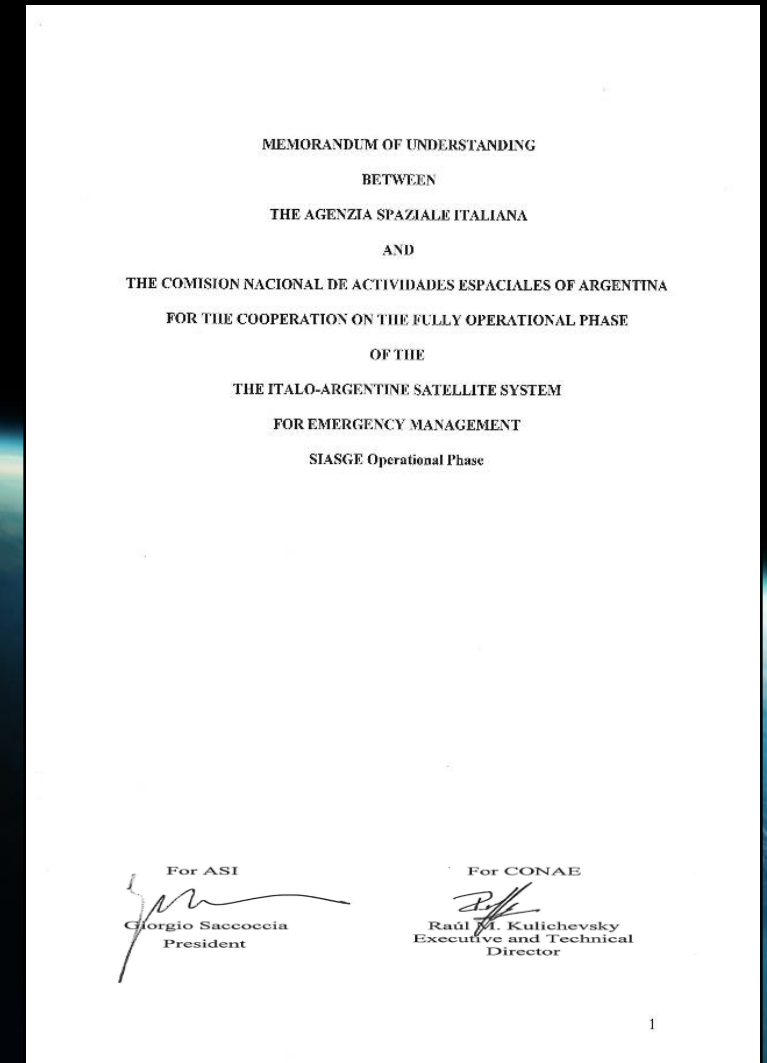


	X-Band	C-Band	L-Band
Wavelength	3 cm	6 cm	23 cm
Vegetation			
Dry Snow			
Dry Sand			

SIASGE - Memorandum of Understanding (MoU)

On June the 21st 2022 ASI & CONAE signed a MoU to govern the Operational Phase of the SIASGE system.

- **Data and resource sharing**
- **SIASGE Processor development for generating:**
 - Joint X+L Standard Products;
 - Higher Level X, L and joint X+L products.
- **SIASGE application development:**
 - **Priority 1**
Risk Management
 - **Priority 2**
Agriculture
 - **Priority 3**
Other applications

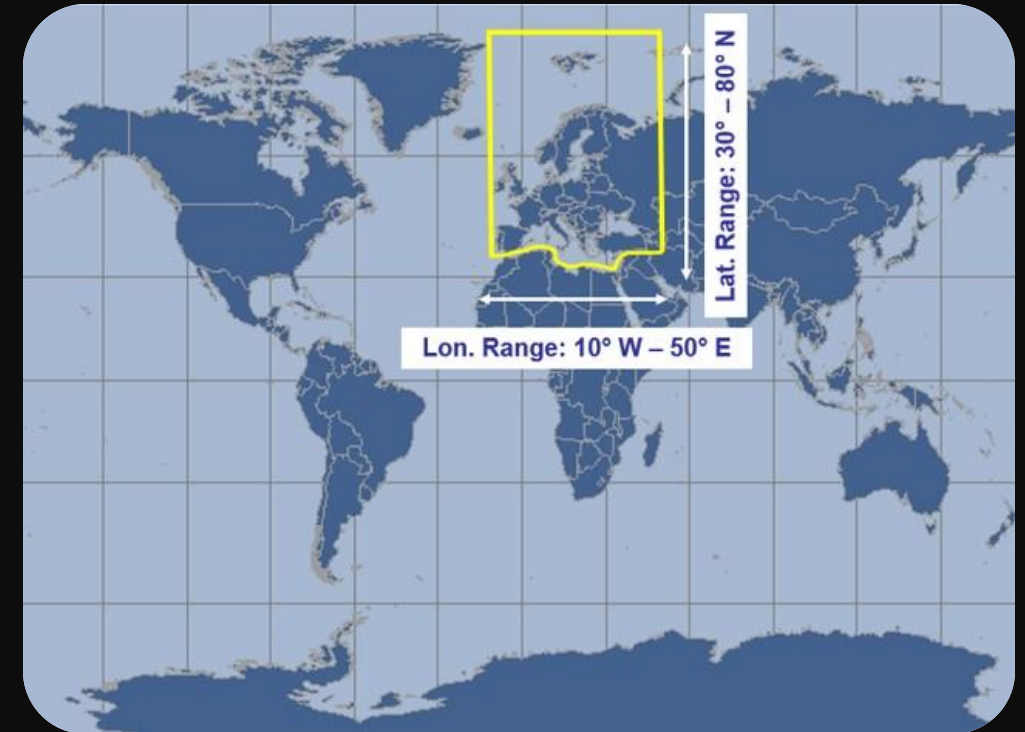


SIASGE - Data and Resource Sharing

In recognition of the ASI contribution to the SIASGE development and SAO 1, CONAE granted to ASI an Area of Exclusivity (AoE)

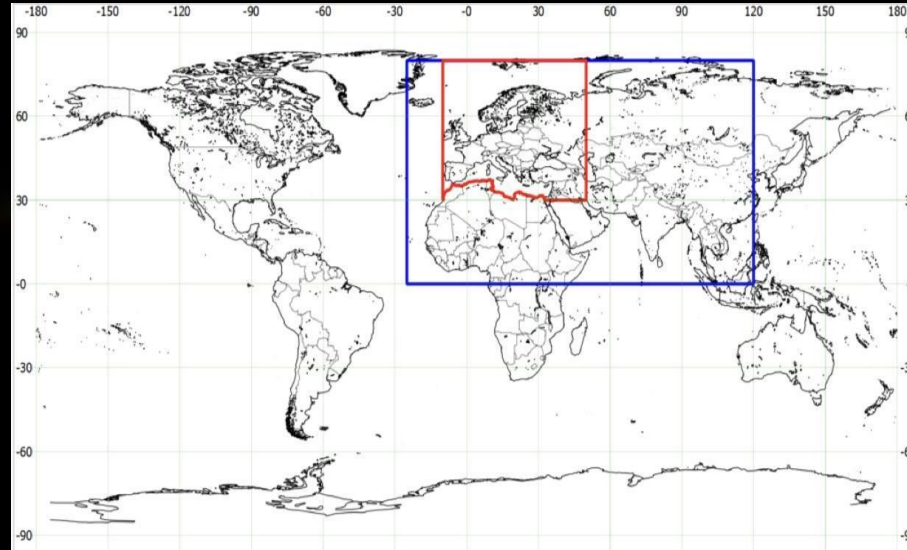
Over AoE, ASI:

- has full utilization rights of the resources of the SAO1 System for:
 - Institutional uses
 - Research uses
 - Commercial uses
- is responsible for the SAOCOM data distribution



Areas of Interest (AoI)

Areas in which ASI and CONAE have the right to use products from the other party system, for either Institutional uses and/or Commercial uses within the allocation of a certain amount of resources.



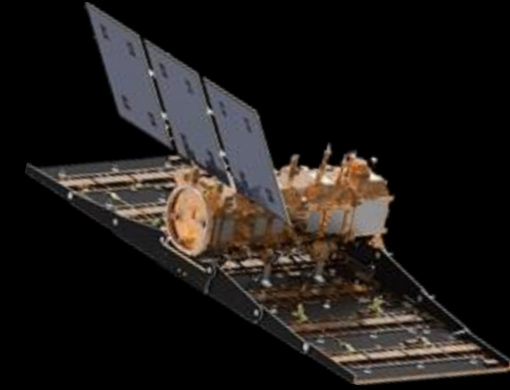
Free Areas

Areas outside the areas of interest and exclusivity. Data and resource sharing policy not defined yet.

SAOCOM - Acquisition Strategy over ASI AoE

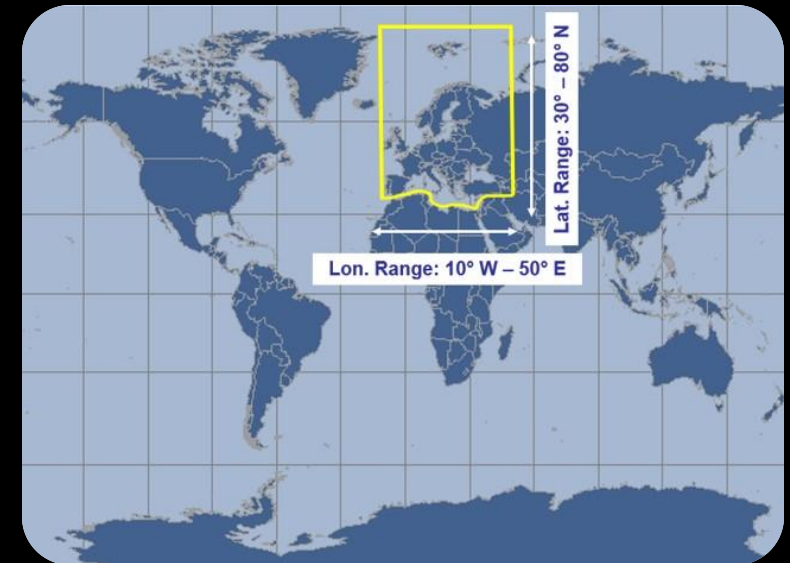
ITALY (since mid 2022)

- High priority acquisition plan
- Global Italy coverage
- Stripmap
- Dual pol VH-VV
- Beams S3, S4, S5
- Asc. & Desc
- SAO1A & SAO1B
- Acquisitions every 16 days+24days



EUROPE (since mid 2023)

- High priority acquisition plan
- Stripmap
- Dual pol VH-VV (Turchia HH-HV)
- Beams S3, S4
- Asc. & Desc
- SAO1A & SAO1B
- Acquisitions every 16 days

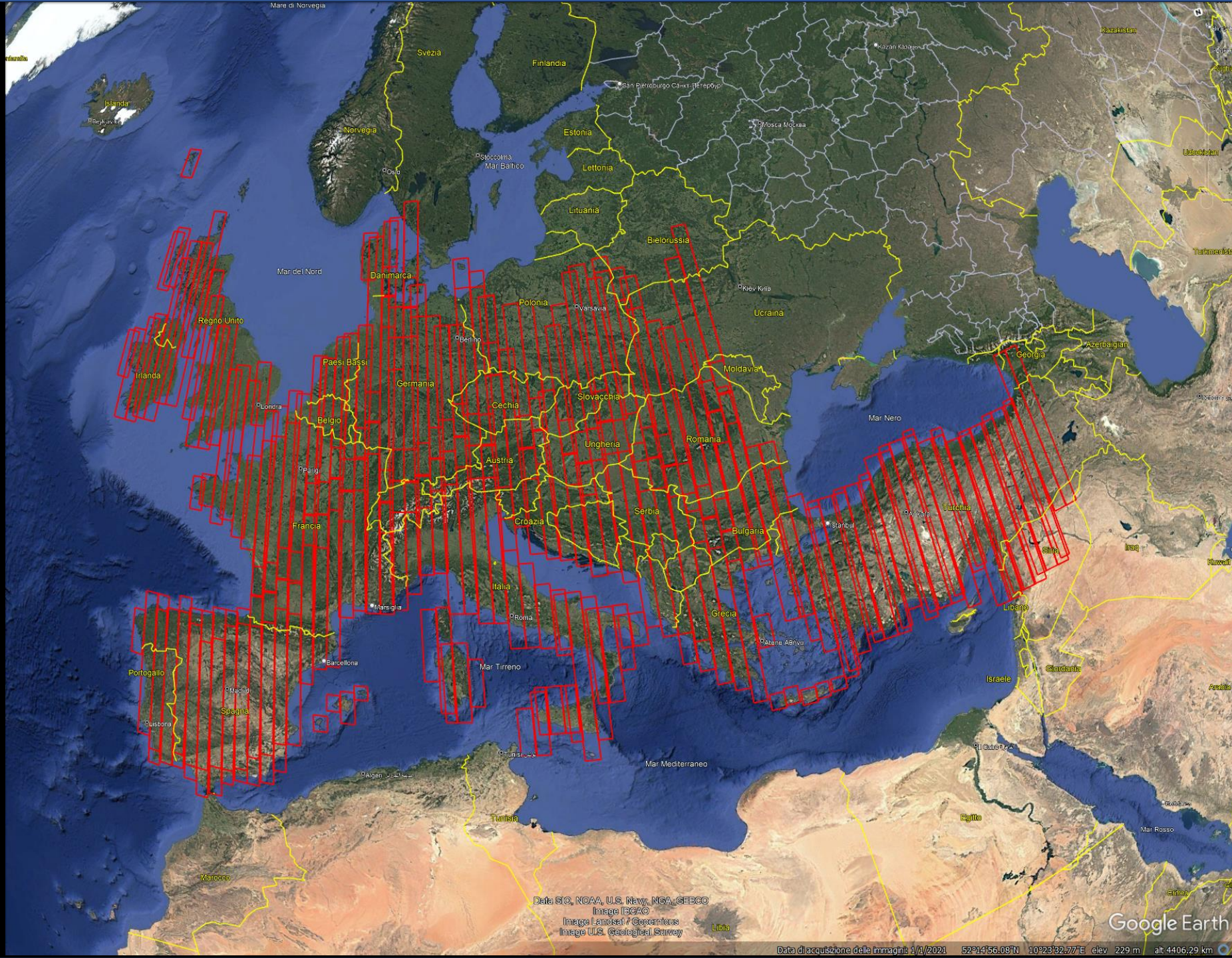




Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Imagery Landsat / Copernicus
Imagery U.S. Geological Survey

Google Earth

Data di acquisizione delle immagini: 1/1/2021 48°19'24.44"N 40°12'54.70"E elev. 107 m alt. 4406.29 km



Data SIO, NOAA, U.S. Navy, NGA, GEBCO
Image Landsat 7 Copernicus
Image U.S. Geological Survey

Google Earth

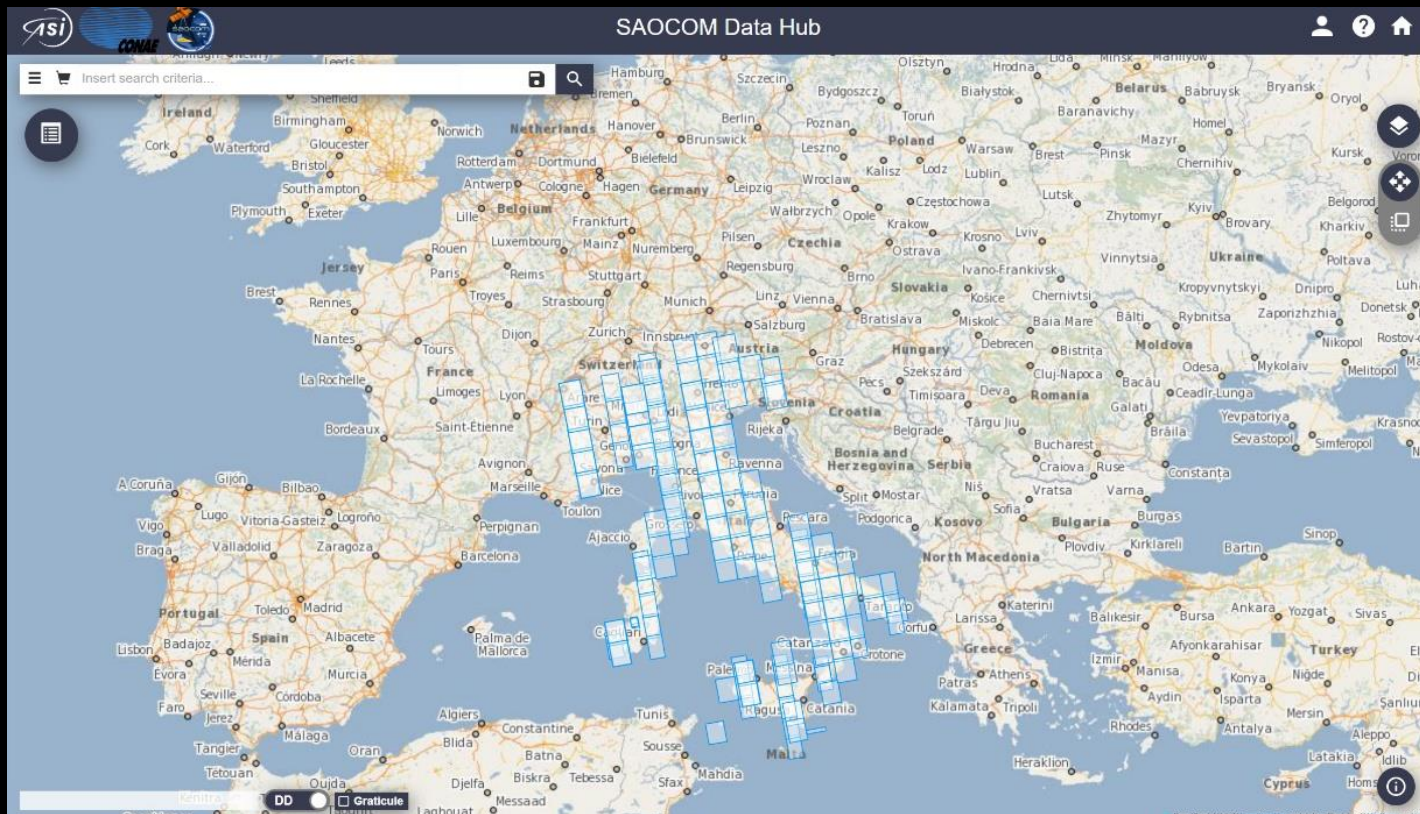
Data di acquisizione delle immagini: 1/1/2021 52°14'56.08"N 10°23'32.77"E elev. 229 m alt. 4406.29 km

SAOCOM – Archived Products distribution (over ASI AoE)



Agenzia Spaziale Italiana

Access through the ASI SAOCOM Portal: DHUS -> <https://saocom.asi.it>



**~ 90.000
images
available**

SADCOM – Image Tasking (over ASI AoE)

- **Over Italy it is strongly discouraged**
- **Over the rest of Europe it is possible but only to a very limited number of projects**
- **All Projects are/will be selected through:**
 - **future dedicated ASI and or joint ASI/CONAE Open AO**
 - **ASI funded AO for the national research community**



SAOCOM – Access to data (over ASI AoE)



Agenzia Spaziale Italiana

For Institutional, Research and Commercial Users (only for research and institutional uses)

• User registration request

- Fill in a project form
- Read the ASI/CONAE SAOCOM License to Use Agreement
- Read the SAOCOM Privacy Policy
- Read and sign SAOCOM Release of Liability Declaration
- Send to ASI

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											

Upon ASI project evaluation the user can access the SAOCOM data

• Products are free of charge

For Commercial purposes:

• Not implemented yet

A		B	C
1	Title (mandatory)	Snow and ice properties on rocky mountain	
2	Duration (mandatory, in number of months - digits not letters)	12	
3	Description (mandatory)	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.	150
4	Area of Interest (1st, mandatory)	Colorado rockies	
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	

Registration following the instruction at: <https://www.asi.it/en/earth-science/saocom/>

SADCOM – Rome, 23rd March 2025





Agenzia Spaziale Italiana

THANK YOU FOR YOUR ATTENTION!

