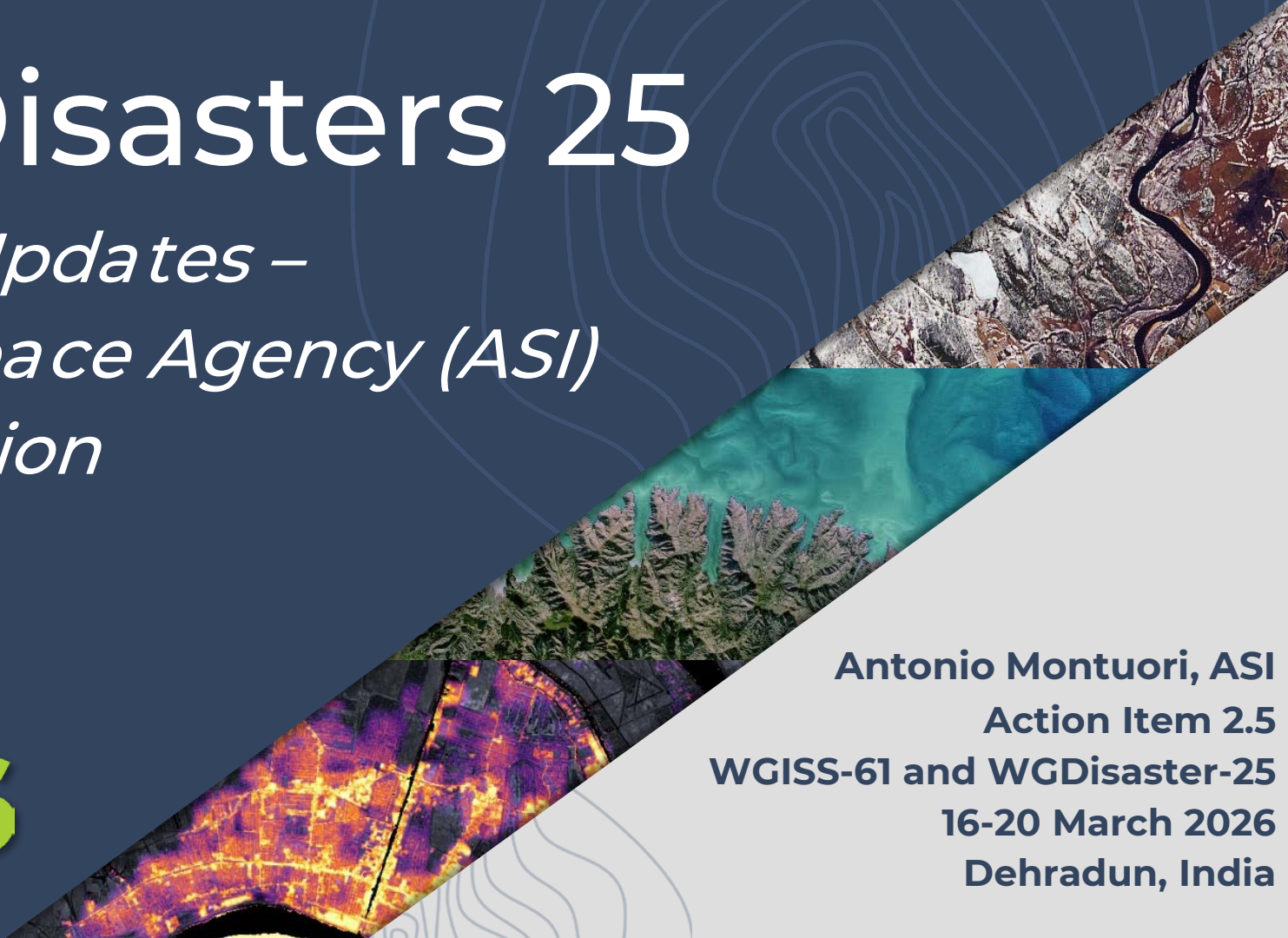
WGDisasters 25

Agency Updates – Italian Space Agency (ASI) contribution



Antonio Montuori, ASI

Action Item 2.5

WGISS-61 and WGDisaster-25

16-20 March 2026

Dehradun, India

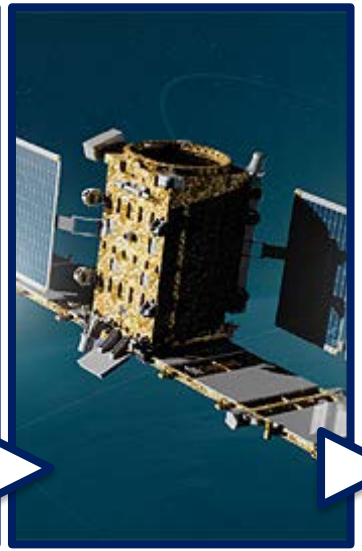
CEOS
Committee on
Earth Observation Satellites

ASI EO Vision

Supporting research, scaling innovation, straightening industrial capabilities, promote economic grow

Technology & Research

Flight

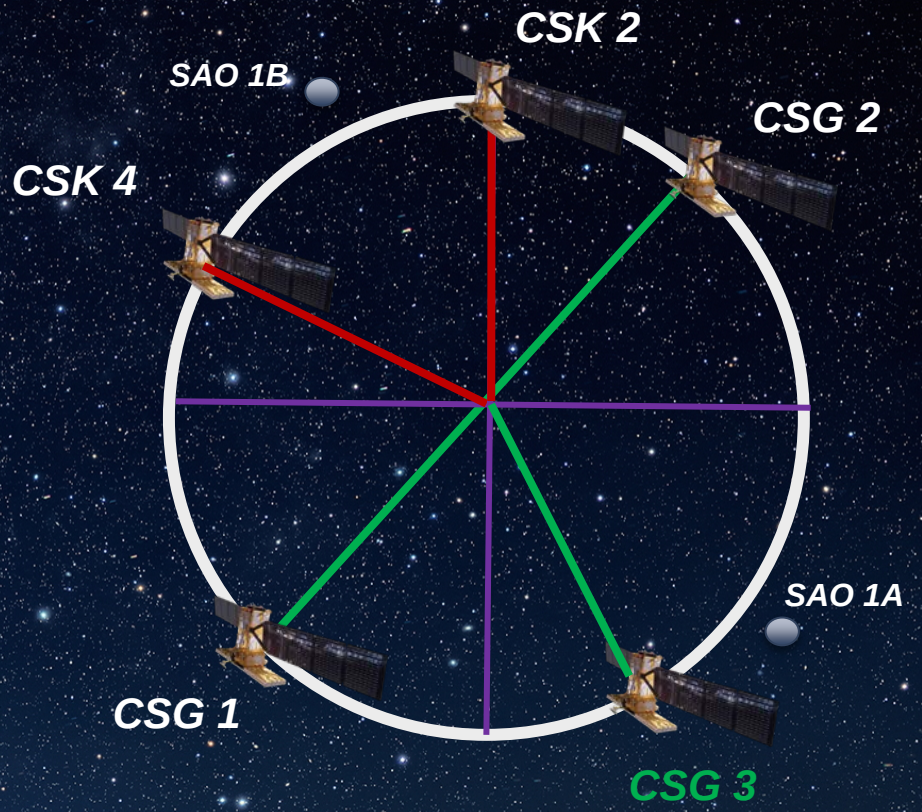


Data & Products

Modelling & Science

Earth Intelligence

COSMO-Skymed First & Second Generation



COSMO-SkyMed (1/2)

- **COSMO-SkyMed:**
  - **CSK-3 deorbiting procedure started on May 2022**
  - **CSK-1 deorbiting procedure started on April 2025**
  - **CSG-3 launched on January 3rd 2026 (under commissioning)**

    Now, on the same orbit, 2 CSK + 3 CSG
  - **CSG mission will be upgraded with fourth satellite CSG-4 (launch expected by the end of 2026)**

- **An "Open Call for Science" on the use of CSK and CSG data is available on the ASI website:** https://www.asi.it/bandi_e_concorsi/open-call-for-science-data-utilization-of-the-cosmo-skymed-mission-first-and-second-generation-english-version/
  - The main objectives of the Call include the scientific research promotion and the development of new methods and algorithms to achieve new SAR applications, as well as the improvement of applications based on X-band (SAR) products of COSMO-SkyMed Constellation.
  - Since 2025 a New Committee has been appointed by the ASI to manage the COSMO-SkyMed Open Call, namely Deodato Tapete as PoC, Maria Elena Cianfanelli and Antonio Montuori as Members.
  - E-mail contact: csk.science@asi.it

COSMO-SkyMed (2/2)

ASI updates on COSMO-SkyMed data delivery for GSNL Supersites

- Since April 2025, COSMO-SkyMed data requested for GSNL Supersite projects have been delivered via conventional ASI FTP and further delivered, archived and made available through a dedicated ASI server, available at the following link https://192.106.234.150/cgi-bin/ .

  The access is allowed only to Supersite users and only to the Supersite project for which users have signed the COSMO-SkyMed license to use.

ASI PoC (asi-ceos@asi.it):

- Luigi Dini – Data Uptake Manger
- Graziano Spinelli – Data Uptake Technical Support

PRISMA & SAOCOM

- **PRISMA is operating nominally (https://prisma.asi.it/).**
- **PRISMA SG Phase A activity concluded. B/C/D/E1 is planned.**
- **Since 20 July 2021, ASI has been started the provision of SAOCOM data within the ASI ZoE:** https://www.asi.it/en/2021/07/asi-starts-the-exploitation-phase-of-data-acquired-in-europe-by-the-l-band-sar-sensors-of-the-argentinean-saocom-constellation/. For accessing the products it is sufficient to download the SAOCOM Registration Data Package and submit via email a registration request. SAOCOM data will be accessed and disseminated through a dedicated ASI SAOCOM portal.

Other WGs

- **ASI CEOS Team for WGDisasters:**
  - ASI PoC: Antonio Montuori
  - Deputy and Program Scientist: Deodato Tapete
  - Emergency Applications Expert: Luigi D'Amato
  - COSMO-SkyMed Data Manager: Maria Virelli
  - COSMO-SkyMed Data Technical Support: Gianluca Pari
  - Data Uptake Manager: Luigi Dini
  - Data Uptake Technical Support: Graziano Spinelli
- **ASI cooperation with other CEOS WGs**:
  - WG on CalVal: ASI PoC G.P. Blasone, P. Sacco, G. Viavattene
  - WGCapD: ASI PoC L. Santoro
  - GHG Task Team: ASI PoC G. Licciardi

Space missions with ASI as Lead Agency (1/2)

- **LAGEOS-2 (**http://database.eohandbook.com/database/missionsummary.aspx?missionID=238**):**
  - **Instrument: Laser Retroreflector Array**
  - **Measurements: Gravity field, Gravity gradients, Crustal plates positioning, Crustal Motion**
- **LARES (**http://database.eohandbook.com/database/missionsummary.aspx?missionID=19**):**

  LARES-2 (http://database.eohandbook.com/database/missionsummary.aspx?missionID=968)
  - **Instrument: Laser Corner Cube Reflector Assembly**
  - **Measurements: Gravity field, Gravity gradients, Crustal plates positioning, Crustal Motion**
- **PLT-1 (**http://database.eohandbook.com/database/missionsummary.aspx?missionID=1282)
  - **Instrument: Synthetic Aperture Radar**
  - **Measurements: Land, multi-purpose imager**
- **PLT-2 (**http://database.eohandbook.com/database/missionsummary.aspx?missionID=1283)
  - **Instrument: Multi-Angle Imager for Aerosol (MAIA)**
  - **Measurements: Aerosol**

Space missions with ASI as Lead Agency (2/2)

- **GEOSAR (**http://database.eohandbook.com/database/missionsummary.aspx?missionID=1475**):**
  - **Instrument: Geosynchronous Synthetic Aperture Radar**
  - **Measurements Land, multi-purpose imager**
  - **Phase A completed – Phase B1 is ongoing**

- **National SAR-L :**
  - **Instrument: Synthetic Aperture Radar**
  - **Measurements Land, multi-purpose imager**
  - **Phase A completed – Phase B/C/D1 is under evaluation**

Space Missions with ASI as Contributing Agency

- **CSES (**http://database.eohandbook.com/database/missionsummary.aspx?missionID=849**):**
  - **Instruments: High Energy Particle Detector, Electric Field Detector**
  - **Measurements: Electron Energy and Pitch Angle Distribution, Electric Field**
- **LAGEOS-1 (**http://database.eohandbook.com/database/missionsummary.aspx?missionID=201**):**
  - **Instrument: Laser Retroreflector Array**
  - **Measurements: Gravity field, Gravity gradients, Crustal plates positioning, Crustal Motion**
- **NORDSAT-TD (**http://database.eohandbook.com/database/missionsummary.aspx?missionID=1012)
  - **Instrument: CORA-micro**
  - **Measurements: VHF Data Exchange maritime communication**
- **SAOCOM (**http://database.eohandbook.com/database/missionsummary.aspx?missionID=405)
  - **Instrument: Synthetic Aperture Radar**
  - **Measurements: Land, multi-purpose imager**

Future SAR Missions

Ensure the continuity of COSMO-SkyMed, integrate and test new capabilities

CSG 4 satellite, Future Generation of COSMO-SkyMed

IRIDE - NIMBUS SAR, medium inclined orbit constellation

PLATiNO-1, mini-satellite X-band monostatic and bistatic SAR mission

GEOSAR mission, persistent monitoring and fast response for emergency applications

National L-band SAR mission ensuring continuity with SAOCOM

SATURN & RODiO, in-orbit demonstration of MIMO D-SAR and bistatic/multistatic D-SAR by CubeSat formations

Future Optical, Hyperspectral, Thermal and Lidar Missions

Air Quality & Human Health

- MAIA (cooperation with NASA/JPL)

Environmental & Resource Monitoring

- PRISMA Second Generation, IRIDE Hyperspectral
- Platino-3 / VHR

Earth System Science

- Luce (cooperation with NASA/Langley)

Luce for SOCIAL BENEFITS

Weather Forecasting by observing cloud distributions & properties to improve retrievals and model assimilation

Earth System Modeling by providing measurements of aerosol, cloud and biological processes to improve short- and long-term predictions

Air Quality through more precise measurements of aerosols to better forecast impacts on human health

Disaster Monitoring by rapidly conveying observations and predictions of volcanic plumes and wildfire smoke

IRIDE system

- Europe's foremost EO space programs, initiated by the Italian Government, coordinated by ESA in collaboration with ASI with PNRR resources. **Expected ASI lead by June 2026**.

- Constellations of satellites in Low Earth Orbit (LEO) (**Upstream**), ground operational infrastructure (**Downstream**), and services for the Italian PA (**Services**).

Dissemination

- **EGU 2026 (3-8 May 2026, Wien, Austria): NH6.1 ORAL-POSTER Session** «Application of remote sensing, Earth-observation data and EGMS products in geohazard and risk studies» (**PROPOSAL ACCEPTED**)
  - *Session short summary: The session is dedicated to multidisciplinary contributions focused on benefit of EO use for natural hazard and risk management, including e.g. Hazard/risk forecasting models; Rapid hazard/vulnerability/risk mapping, post-disaster recovery; Tools to assess/validate hazard & risk models. We encourage contributions from early-stage researchers and international collaborations, such as CEOS and GEO.*
  - *Conveners: M. Parks, M. Del Soldato, A. Montuori, N. Necula, M. Niculita, E. Straffelini V.Drouin*
  - *https://www.egu26.eu/session/56645*
- **UNOOSA/UNU-INWEH/CEOS Training on "EO for Resilience and Humanitarian Aid" (23-27 March 2026, Wien, Austria)**
  - *Day 3 – "Working Group on Disasters contribution to Disaster Risk Management*
  - *Presenter: A. Montuori*
  - *https://www.unoosa.org/oosa/en/ourwork/psa/schedule/2026/unoosa-unuinweh-ceos-workshop.html*
- **ASI Workshop "Present & future of thermal applications based on Earth Observation data" (13-14 May 2026, ASI HDQ)**
  - *Day 1 – "Earth Observation, urban heat islands and thermal comfort in cities: the experience of the Italy-Vietnam LCZ-UHI-GEO cooperation and beyond"*
  - *Day 2 – "Algorithms and applications for Earth observation in the thermal infrared"*
  - *Conveners: D. Tapete, P. Sacco, S. Zoffoli, S. Venafra, F. Longo (eo@asi.it)*
  - *https://www.asi.it/en/event/asi-workshop-present-future-of-thermal-applications-based-on-earth-observation-data/*

From Data to Action

Innovation for Downstream Preparation (I4DP)

- Develop **user-driven** integrated applications and services that inform strategic decisions and empower society

- Addressed to the **Academy**, **Public Administration** (national and local) and **Companies** to launch on the marked their products

- National thematic **periodic call** requiring:
  - well identified user needs / service requirements
  - input data available and operationally accessible
  - adequate ICT infrastructure
  - vision for sustainability

Results

- **37 proposals** selected and funded (15 PA, 7 Science, 15 Market)
- **33 companies** involved in I4DP Market programme (many PMIs)
- **42 scientific entities** involved in I4DP programme
- **15 partnership** among scientific entities and public administrations
- **Main Topics**: climate change effects, landslide monitoring, fire prevention, flood management, more generally DRM, adequate ICT infrastructure monitoring

Perspective for new activities (1/2)

- **New Landslide Pilot**
  - **Current status:**
    - Proposal presented during this CEOS meeting to get approval and consolidate previous EoIs from national and international partners
    - Positive support and reactions were provided by CEOS members and agencies @ WGD-23 and WGD-24 (e.g. ESA, CAS, UNOOSA)
  - **Topics**

#1 – Multi-sensor EO data-based approaches for landslides

#2 – AI 4 Landslides (New topic)

#3 – EO-based landslide vulnerability assessment (New topic)

#4 – Landslides in humanitarian contexts

#5 – Landslides & Climate Change (New topic)

Perspective for new activities (2/2)

- **Drought Pilot**
  - **Current status:** Draft proposal prepared by CONAE & ASI to collecting interest by CEOS WGDisasters members (ISRO already provided availability and interest)
    - **Topics:**
      - Evaluate EO satellite and CEOS contributions to drought monitoring and early warning systems (Pillar 1 of IDM framework)
      - Identify main geographic areas most prone to drought phenomena (Pillar 2 of IDM framework)
      - Identify users and stakeholders for mitigation, preparedness and response activities (Pillar 3 of IDM framework)

THANK YOU FOR THE ATTENTION

ASI-CEOS Working Team:
Antonio Montuori
Contact: asi-ceos@asi.it

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