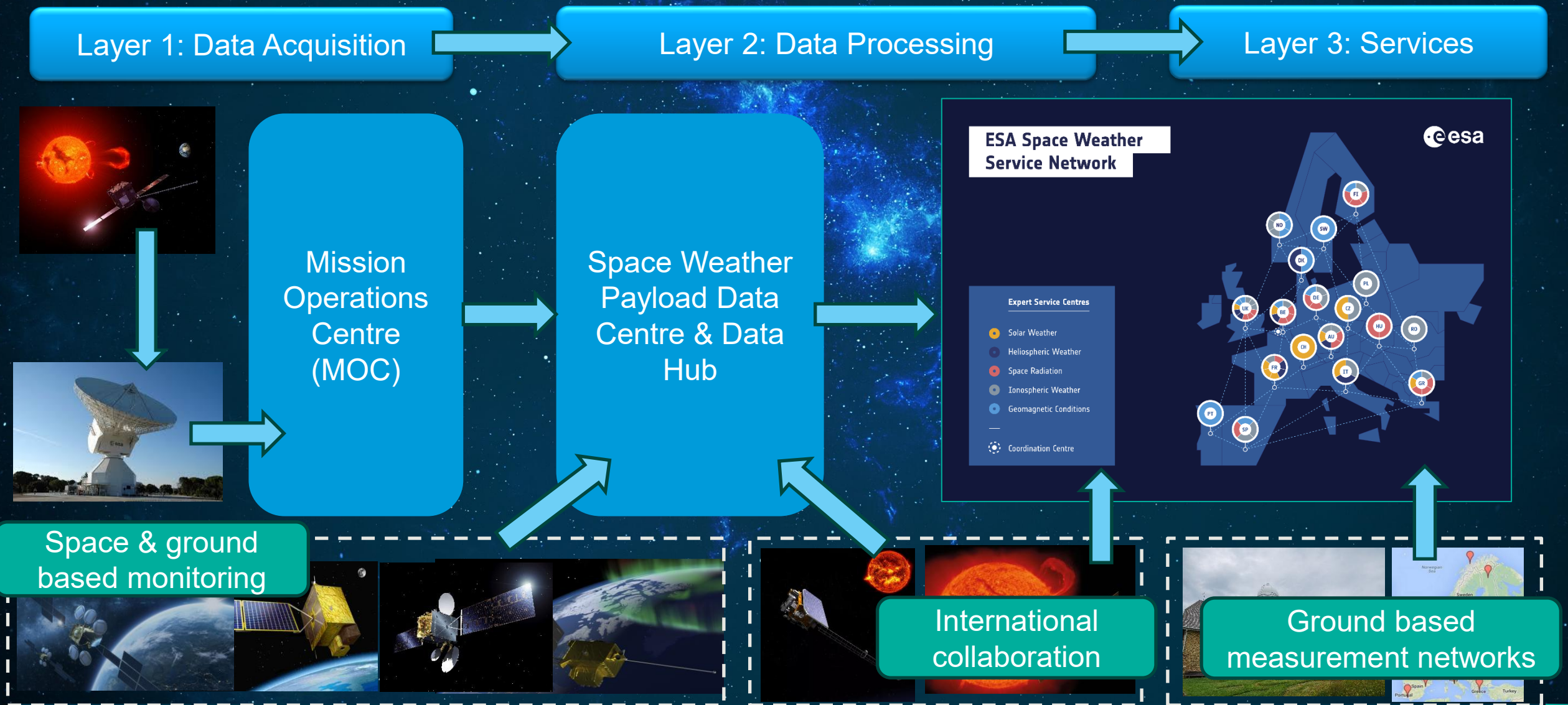


ESA Space Weather Service Network

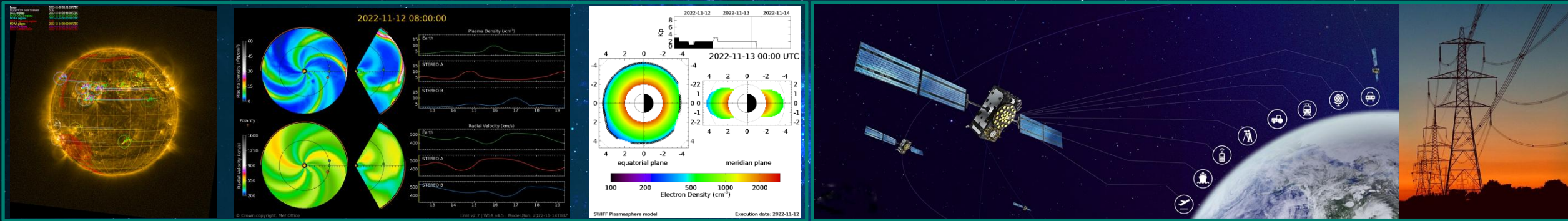
Alexi Glover, Jussi Luntama
ESA Space Weather Office, Space Safety Programme Office
08/06/2026

Space Weather System and Business Logic



ESA Space Weather Service Network:

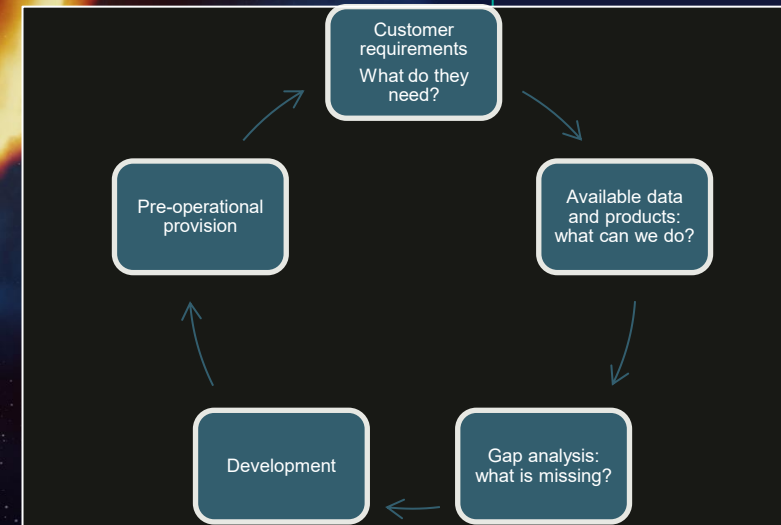
<https://swe.ssa.esa.int>



- Timely space weather information & services
- Demonstrate advanced computer modelling and analysis tools
- Timely & reliable user tailored notifications
- Demonstrate space Weather alerting for affected sectors

Pre-operational service model: Continuous online provision, helpdesk and IT support during normal working hours only.

ESA Space Weather Service Network



The screenshot displays the ESA Space Weather Service Network dashboard. The top navigation bar includes the ESA logo and the text 'THE EUROPEAN SPACE AGENCY'. The main header reads 'Welcome to the ESA Space Weather Service Network' with a sub-note: 'Please note that all ESA-SWE Services are under review/construction'.

The left sidebar contains the following menu items: 'CURRENT SPACE WEATHER', 'SPACE WEATHER AT ESA', 'SERVICE DOMAINS', 'EXPERT SERVICE CENTRES', 'OTHER RESOURCES', 'CONTACT', and 'REQUEST FOR REGISTRATION'.

The main content area is divided into several sections:

- Welcome to the ESA Space Weather Service Network:** This section provides a snapshot of current space weather conditions and encourages users to register for a full range of products and data.
- Interplanetary medium:** This section displays 'Near-Earth solar wind forecasts (EUHFORIA)' for the date 2021-10-18T00:13:43. It includes four sub-plots: two polar plots showing solar wind density and speed, and two line graphs showing solar wind speed and density over time.
- Earth's Magnetosphere and Radiation Belt:** This section displays a 'Nowcast Kp index' plot for the date 2021-10-25 (Hour UTC). The plot shows the Kp index over a 24-hour period, with a color-coded scale from 0 to 9.
- Solar Data:** This section displays a 'SIDC Solarmap' plot, which is a global map of the Sun showing solar activity.
- Earth's Ionosphere:** This section displays a 'Real Time Activity Index Map' for the date 2021/10/25 08:45 UT. It includes a legend with four categories: 'low', 'disturbed', 'extremely disturbed', and 'missing for or median'.

A red box highlights the 'Service Domains' section, which lists various services:

- Spacecraft Design
- Spacecraft Operation
- Human Spaceflight
- Launch Operation
- Transionospheric Radio Link
- Space Surveillance and Tracking
- Power Systems Operation
- Aviation
- Resource Exploitation System Operation
- Pipeline Operation
- Auroral Tourism
- General Data Service

Power System Operation Service Dashboard

Power Systems Operation Services

The purpose of the Service to power systems operators dashboard is to present an overview of the current and forecasted geomagnetic conditions and heliospheric weather with the different types of available data (measurement, nowcast, and forecast).

Further products, data and archives can be found in the specific service listed below.

Service to Power Systems Operators

Notifications

DTU AWARE_NEXT CIR Notification

CIR occurrence next 24 hours: LOW RISK

[Full product](#)

Provided by: DTU Space

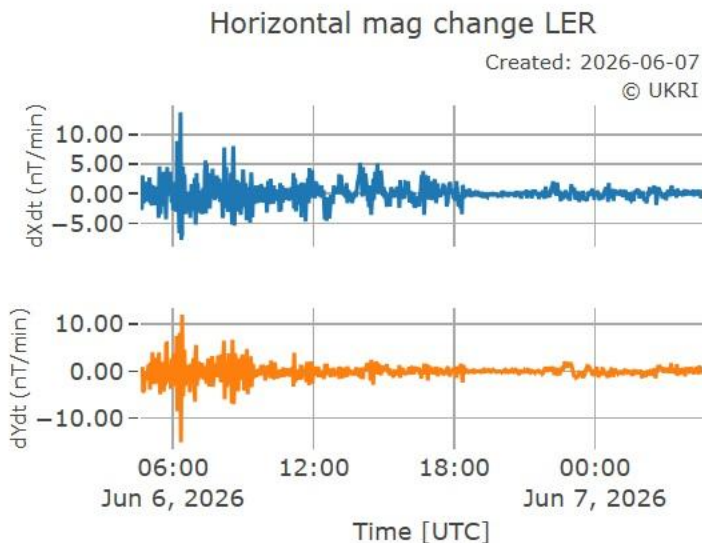
SIDC Latest human moderated alert

issue time: 2026-06-06T17:23:54Z

A partial halo Coronal Mass Ejection to the south east was detected in SOHO LASCO-C2 starting at June 06 at 14:01 UTC. This CME was associated with an M1.8 flare (SIDC flare 7874) with peak

Current Conditions

Horizontal magnetic rate of change (UK)



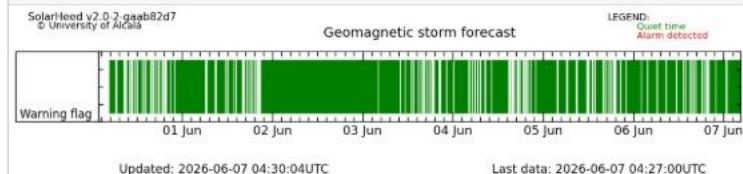
[Full product](#)

Provided by: British Geological Survey

Magnetogrammes from North(West) Europe and Greenland

Forecast

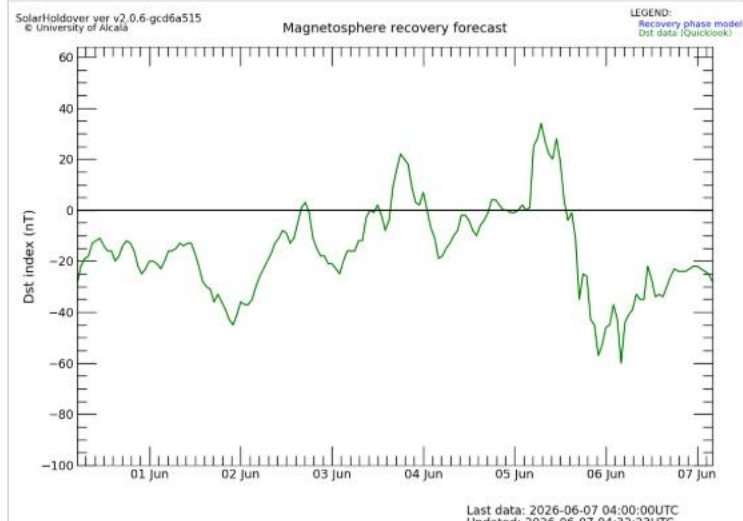
SolarHeed



[Full product](#)

Provided by: Universidad de Alcalá

SolarHoldover

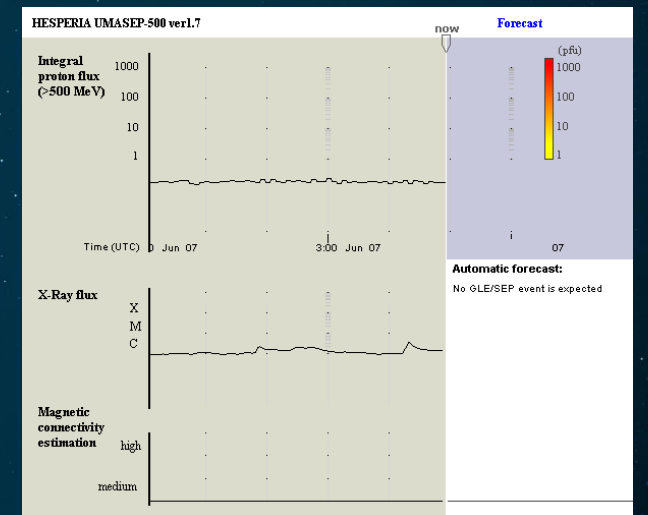
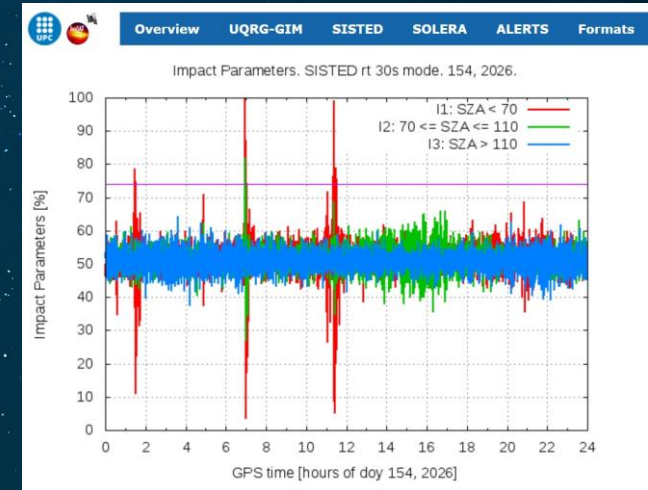
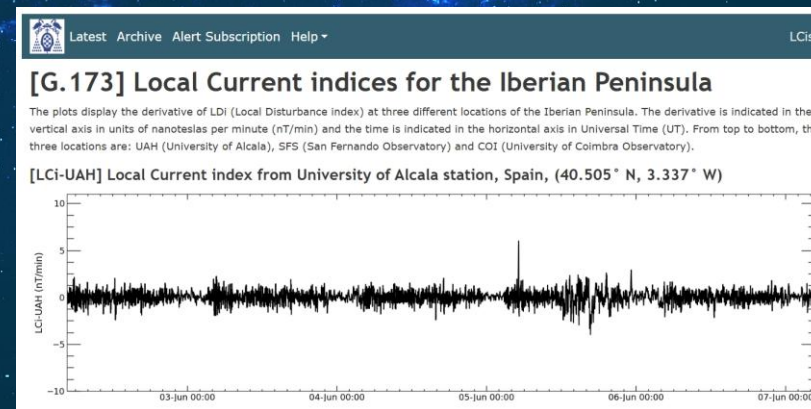
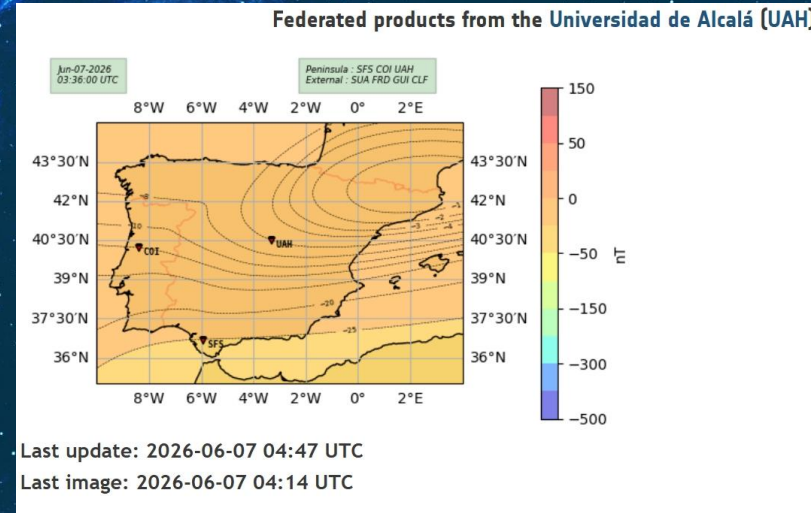


[Full product](#)

Provided by: Universidad de Alcalá

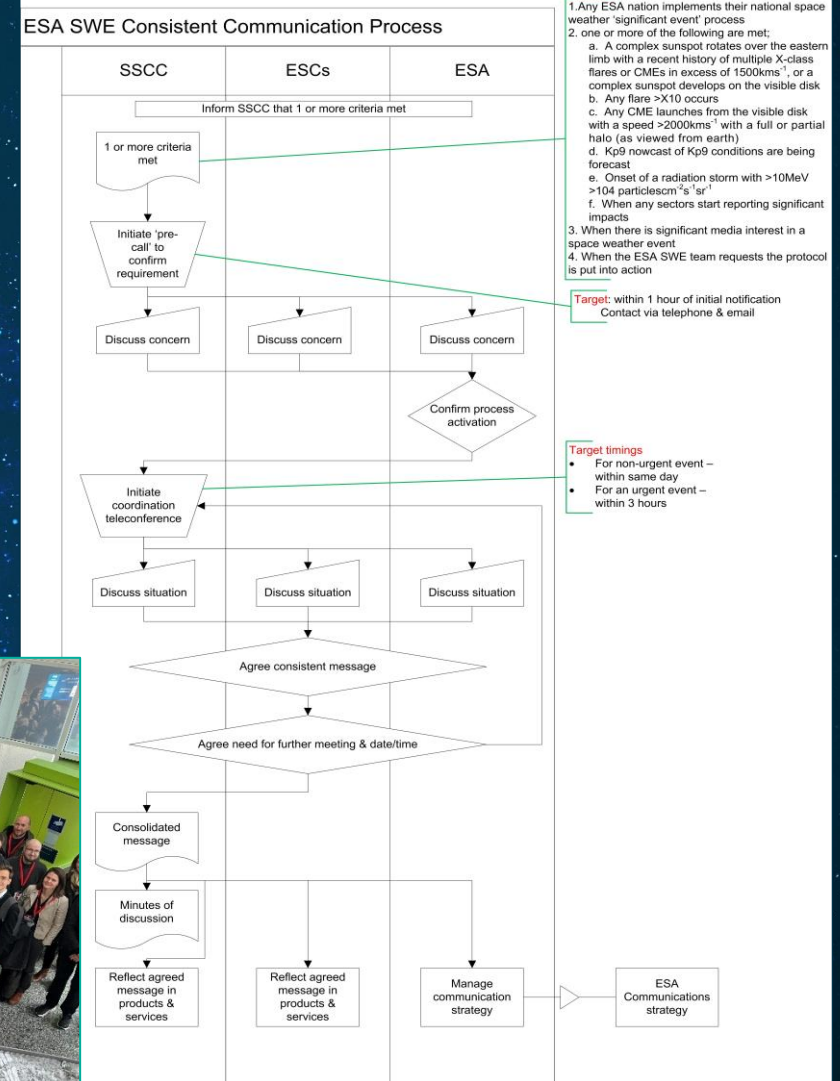
Spanish Participation in the SWE Service Network

- Spanish organisations provide and contribute to **>30 products**
 - Contributions to Geomagnetic Conditions ESC, Ionospheric Weather ESC, Space Radiation ESC
 - Key contributors: Univ Alcalá, Univ Polytechnica de Catalunya, Obs Ebro, Univ Malaga
- UAH-led consortium analysed user needs in the Mediterranean region, 2021
- Regional product development for the Iberian Peninsula resulting in unique map-based products and tailored measurement system demonstration in 2024.



Consistent Communication

- SWE Service Network exercise bringing together experts from all centres to review and summarise ongoing and expected conditions
- Protocol intended triggered under agreed set of conditions
- Intended to lead to consistent reporting on behalf of the SWE Network
- Feed into national response process



SWE Service Network - End User Engagement & Training

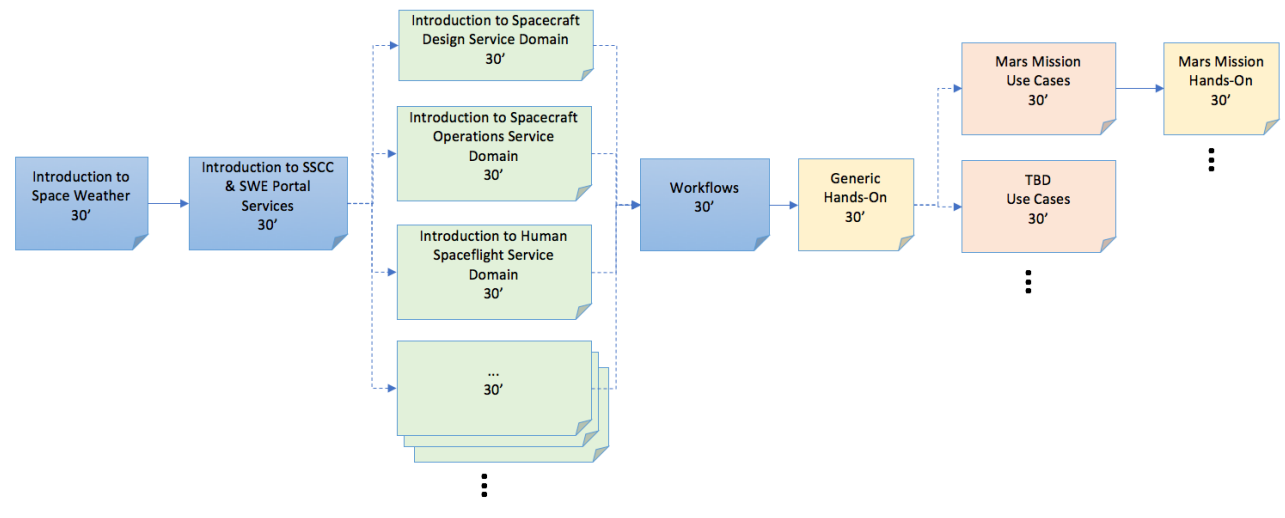
- Several online models:
 - E-learning, webinars and in-person on-site
 - E-learning course and webinar for power system operators in May 2026
- On-site model:
 - Preparation together with end user representative
 - Typical agenda
 - Intro to space weather and user's domain
 - Intro to service portal
 - Presentation of user needs by user (optional)
 - Prepared use cases
 - Individual products & tools
 - Example scenarios: which products/tools to use in which circumstances

On-site SWESNET
space weather
training for mission
teams planned at
ESAC, Q3/2026



Webinar and e-learning: Space Weather for Power System Operations

Thu, May 28, 2026 10:00 AM - 11:00 AM CEST





THANK YOU!

<https://swe.ssa.esa.int>
helpdesk.swe@esa.int

www.esa.int