

Provision of space weather bulletins in support to Spacecraft Operations

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Abstract: In the frame of its Space Situational Awareness (SSA) programme, the European Space Agency (ESA) is establishing a Space Weather Service Network to support end-users, in a wide range of affected sectors, in mitigating the effects of space weather on their systems, reducing costs and improving reliability. In building this network space weather products/tools are developed and federated in services, that are suitable for operational implementation and importantly that meet the end users' needs.

Within the network the SSA Space Weather Coordination Centre (SSCC) is the focal point for space weather user support and offers first line support to end-users. For key users (upon request) the SSCC also provides support in the form of tailored, regular dedicated space weather bulletins. During a campaign the SSCC works with the user in order to compile a proposed bulletin format, contents and delivery schedule. This involves combining and tailoring specific elements of a given SWE Service in order to address specific user needs, and providing this direct to the users contact point(s) on a pre-agreed schedule/basis. Tailored products are collected in a dashboard that is automatically updated and continuously available for the user. On basis of the dashboard and with the help of forecasters from the Expert Service Centres (ESCs), dedicated space weather forecast notifications are produced.

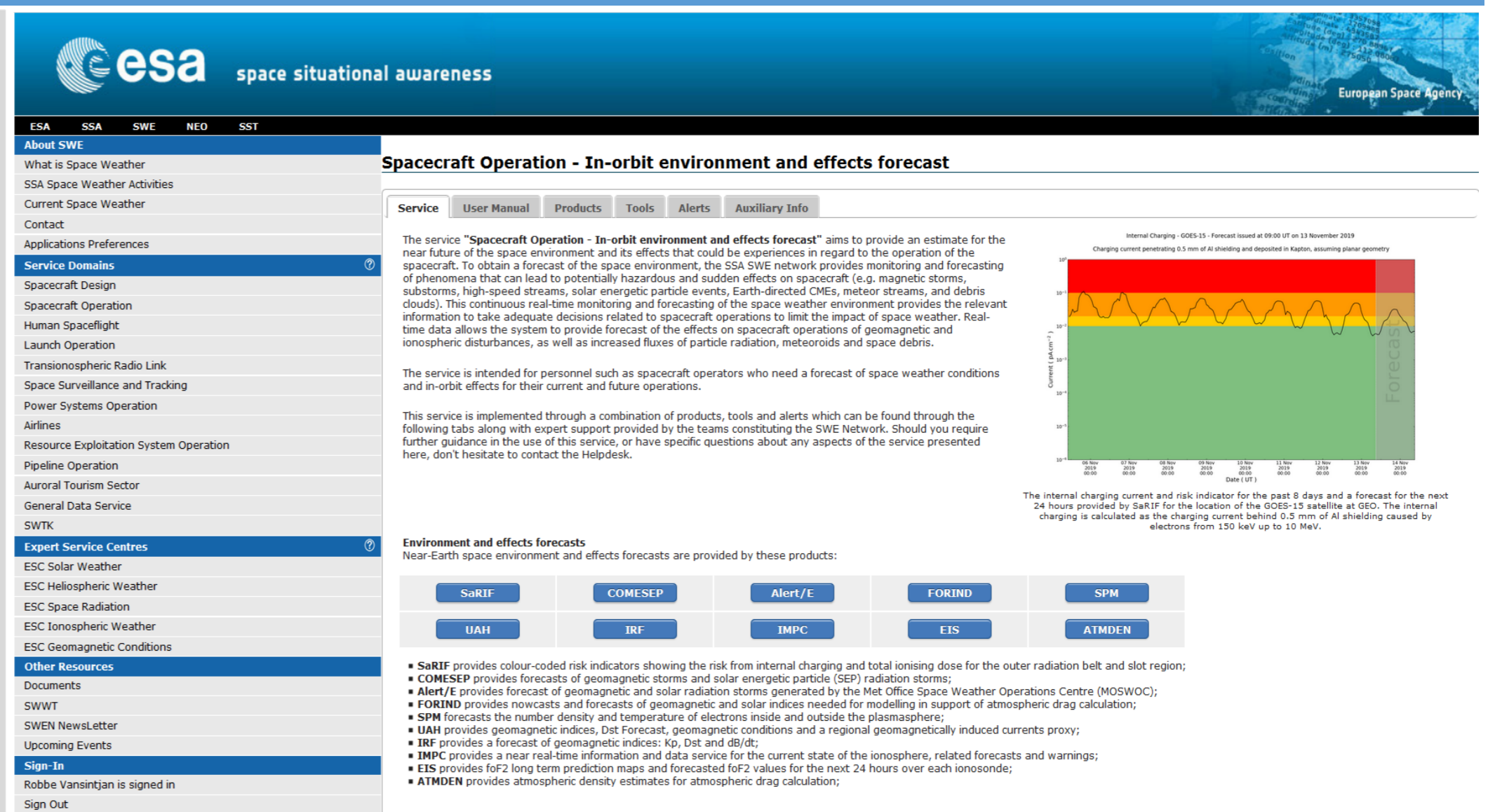
In this poster we highlight the Spacecraft Operation service for which a general SWE bulletin and dashboard has been created in support of (ESA and non-ESA) mission operations at various orbits.

Website: swe.ssa.esa.int

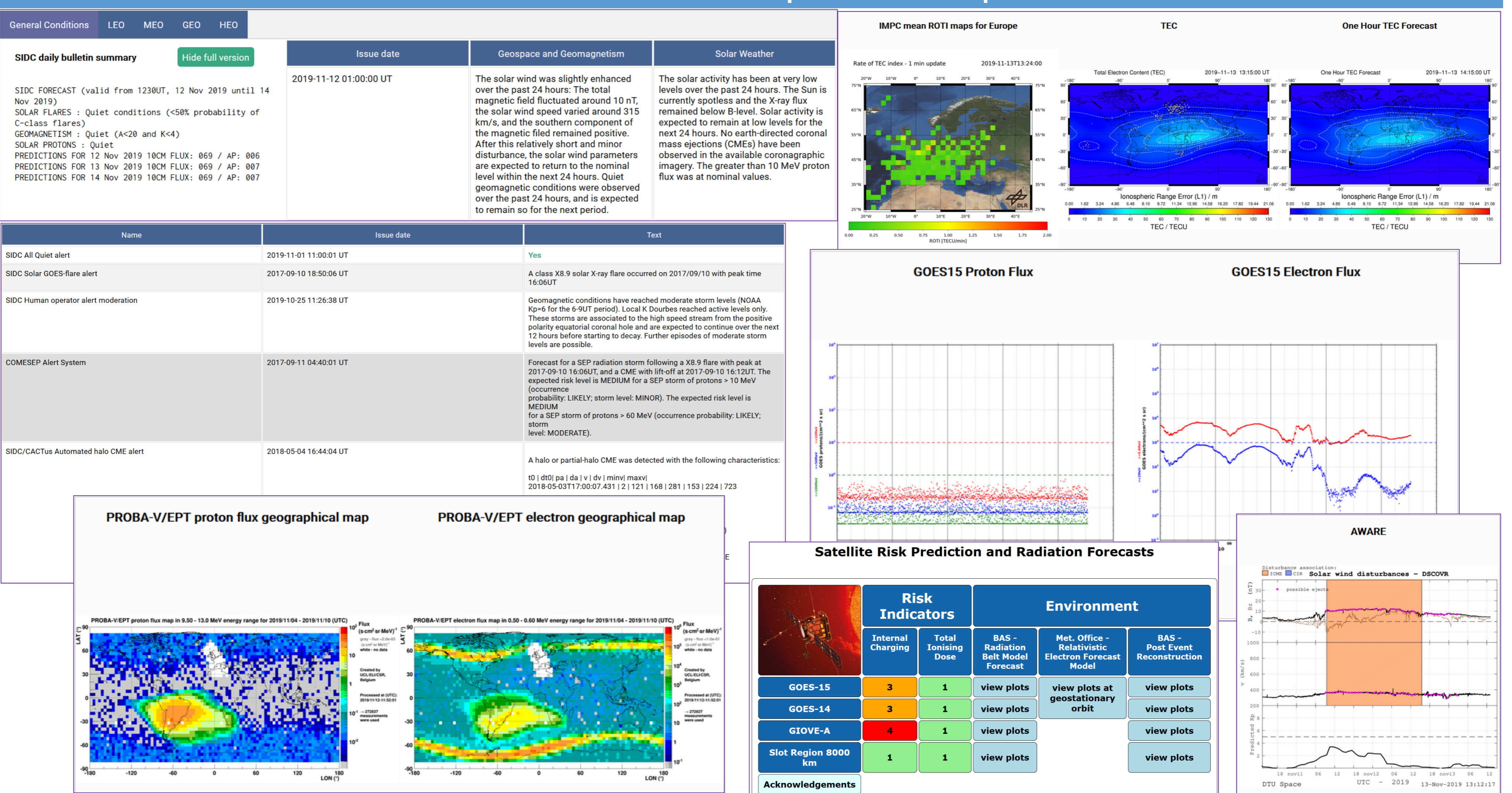
Contact: helpdesk.swe@ssa.esa.int

SSA Space Weather Coordination Centre – SSCC

- Spacecraft operations is one of the service domain for which the different Space Weather (SWE) products in the SSA network are grouped and contextualized.. (See image to the left)
- By interacting with spacecraft operators in various ways a better understanding of this user base requirements is developed.
- One way this is done is by creating tailored bulletins and dashboards for specific and general spacecraft missions and adapting the services based on the users feedback.
- Below we show different parts of a general dashboard for spacecraft missions orbiting the Earth.
- The dashboard is divided into tabs a general tab gives a quick overview of the current SWE conditions and orbit specific tabs give more detailed information on the SWE impact in that orbit
- This dashboard focuses on satellite charging, communication anomalies and single event upsets on board of the satellite.



General dashboard for spacecraft operations



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