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## Services for space missions support within the ESA space situational awareness space weather service network

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Spacecraft operations are by nature complex and every satellite's operational environment poses a range of potential risks, often a unique combination for a given orbit. The implications of interruptions of operations, data transfer and service provision, are serious, both in terms of cost and capability, thus it is imperative to mitigate against all operational risks to the fullest possible extent. 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. This service network is currently in a test and validation phase and encourages user engagement and feedback. Currently, the network is organized around five Expert Service Centers (ESCs) focusing on Solar Weather, Heliospheric Weather, Space Radiation Environment, Ionospheric Weather and Geomagnetic Conditions. Each ESC is connecting different expert groups, federating their space weather products, and ensuring the quality and consistency of the provided information. The service network also includes a central Data Centre and the SSA Space weather Coordination Centre (SSCC). In this presentation, we give an overview of the current status of the network, the targeted end-user groups and Expert Service Centers with a focus on the user domain of spacecraft operators. We are also keen to gather feedback and requirements from end-users in order to improve the network support capabilities and to tailor its services.

### Biography

Erwin De Donder has completed his PhD in Astrophysics within the field of close binary star evolution and galactic chemical evolution. He is currently working as scientist at the Royal Belgian Institute for Space Aeronomy within the Space Weather section. He has a profound experience in developing services related to space radiation and effects on spacecraft's (e.g. SPENVIS). He is responsible for the end-user strategy within the frame of the current development of ESA's Space Situational Awareness Space Weather Service Network.

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