

**Subject:** Effects of Space Weather on Aviation

**Revision:**

This SIB revises EASA SIB 2012-09 dated 23 May 2012.

**Ref. Publications:**

- Council Directive [2013/59/EURATOM](#) dated 05 December 2013.
- EASA SIB [2012-10R1](#) dated 28 April 2021.
- Appendix 1 of this SIB contains a list of useful websites and identifies those that provide information on actual space weather.
- International Civil Aviation Organization (ICAO) Annex 3: Meteorological Service for International Air Navigation, 20th Edition 2018.
- ICAO Document 10100: Manual on Space Weather Information in Support of International Air Navigation, 1st Edition 2019.

**Applicability:**

All aircraft and their operations, all Air Traffic Management/Air Navigation Services (ATM/ANS) systems and their operations, all aerodromes and their operations.

**Description:**

This SIB informs aircraft operators and manufacturers, avionics systems designers, electronic equipment and component manufacturers, ATM/ANS service providers, aerodrome operators and competent authorities of the effects of space weather on electronic devices, communication, navigation and surveillance services and human beings, and should be read in conjunction with EASA SIB 2012-10R1 for on-board systems.

Space weather is a generic term, which refers to the environmental conditions in the space around the Earth extended up to the Sun. The major drivers for the space weather are flows of energetically charged particles and electromagnetic radiation, both of which penetrate and interact with the Earth's atmosphere and magnetic field. The main contributors to space weather can be further separated into Solar and Galactic radiation, described later in this publication, and referred to as -atmospheric radiation from now on.

The figure below is a graphical, not to scale, representation of atmospheric radiation and their interaction with the Earth magnetosphere and ionosphere. The sun activity is the main contributor.

This is information only. Recommendations are not mandatory.

