3 November 2011

Mr. Raul Romero
IAVWOPSG Secretary
International Civil Aviation Organization

Dear Raul Romero

At the last IAVWOPSG/6 meeting which was held at the Western and Central Africa Regional offices in Dakar, the group agreed on Conclusion 6/31 about the Development of Operational requirements for space weather products. The conclusion stated that,

a) IATA be invited to develop a high-level user requirement for space weather and provide this to the Secretary by 1 November 2011;

b) the Secretary place both the high-level user requirement for space weather referred to in a) above, and the Draft Concept of Operations for International Space Weather Information in Support of Aviation (as provided in Appendix A to this report), on the IAVWOPSG website by 1 December 2011;

c) ICAO be invited to write to States requesting that they submit, by 1 July 2012, any views they may have on these documents and the best manner of providing operational space weather products to international aviation; and

d) the members from Australia, New Zealand, the United States and IATA consolidate the responses from States and International Organizations, make the appropriate modifications to the Concept of Operations, compile a summary of submissions and develop a draft set of product requirements, and report back to IAVWOPSG/7.

Considering the impact that space weather may have on flight operations, IATA has drafted high level statements with background and impacts of Space Weather that justify the need to develop service needs for Space Weather products.

Attached you will find these high level statements that make reference to detailed requirements initially developed by Cross Polar working group which have now been listed in the Concept of Operations.

IATA, however, requests that user input be taken into account in developing the products and that any regulations relating to Space weather must be done in consultation with users before implementation.

Thank you for posting this attached document alongside the concept of operations to IAVWOPSG site for public review and comments.

Again, thank you for your continued support.

Yours sincerely,

Jens Bjarnason
Director Operations, IATA
ATTACHMENT

IATA - Space Weather (Background and Impacts) Leading to the Need for User Requirements

Background:

- Modern aircraft are equipped with increased navigation capabilities which have facilitated Performance Based Navigation (PBN) with the use of Satellite Positioning technology being the primary component.

- PBN has already demonstrated benefits to the airlines and future planning is being designed to rely on GNSS as the primary means of navigation.

- A growing number of Oceanic and Continental flights use Communication and Surveillance technologies such as CPDLC and ADS-B or C that are mostly dependent on Satellite technology.

- The NextGen and SESAR future air transportation initiatives are just two of Regional programs designed to meet future capacity and flight safety needs. These programs are built on the foundation of satellite technology and other evolving technologies.

The operators, therefore, must take into account the systems requirements listed above during the flight planning, dispatch and in-flight phases.

Impacts of Space Weather to Commercial Aviation:

- In addition to the impact on global navigation satellite systems, Space Weather adversely affects HF communications, increases solar radiation levels in humans, and impedes aircraft surveillance. Therefore, access to timely, impact-based information about Space Weather is an operational requirement and it will have a growing importance as future technology evolves.

- There are regulatory requirements today for Polar Operations.
  - In the regions north of 83N and south of 60S HF is often the primary means of communication, although the use of CPDLC and ADS-C/B utilizing the Iridium constellation is expected to increase.
  - Some Regulators require that Operators take into account the impact that Space Weather may have on communications and crew health due to increased risks of exposure to solar radiation.

- In the future, IATA anticipates that there will be more stringent regulatory environment due to the maturing of PBN and regional ATM programs such as NextGen and SESAR. This will then result in the need for increasingly accurate, consistent and specific Space Weather products.

- Detailed Operational and Functional requirements have been documented in the Concept of Operations (CONOPS) for Space Weather, specifically chapters 2.5 and 5.2, and will be available for public review before its adoption.

- In addition to helping establish requirements, IATA will explore all means to optimize the costs, including the required level of service. This could mean, for example, requesting that only two global centers are established, one each in the north and southern
hemispheres. This would maximize the provision of forecast and warning information while minimizing costs to the users.

- Appropriate performance metrics must be defined to establish quality standards for these newly emerging Space Weather products.

Therefore, provision of Space Weather information is considered an operational requirement.