



International Civil Aviation Organization

**SEVENTEENTH MEETING OF THE METEOROLOGY
SUB-GROUP (MET SG/17) OF APANPIRG**

Bangkok, Thailand, 13 – 16 May 2013

Agenda Item 7: Meteorological advisories, warnings and hazards

7.2) implementations of advisories and warnings – space weather

SPACE WEATHER PREDICTION CENTER SERVICES

(Presented by the United States)

SUMMARY

This paper presents information on the organization, role and capability of the United States' Space Weather Prediction Center (SWPC) to provide information on space weather to meet the ICAO proposal for space weather services in support of international air navigation as recognized by the 12th Air Navigation Conference.

1. Introduction

1.1 The Space Weather Prediction Center (SWPC) is one of nine Centers that provides specialized services as part of the United States National Centers for Environmental Prediction (NCEP) of the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service. Established nearly 50 years ago as the Central Radio Propagation Laboratory in the Department of Commerce, it is located in Boulder, Colorado.

1.2 SWPC is designated as a National Critical System of the United States Government, afforded the highest level of security and supportability for its services.

1.3 SWPC staff are on duty 24/7, monitoring space weather activity and issuing a suite of products and services. A sample of products and services for aviation can be found at <http://www.swpc.noaa.gov/aviation/index.html>.

1.4 SWPC has facilities on site to download real-time satellite data from NOAA's Geostationary Operational Environmental Satellites (GOES) and the NASA's) Advanced Composition Explorer (ACE) satellites, each critical to forecasting and specification of the near-earth space environment.

1.4.1 Real-time space weather operations require a robust chain of procedures and capabilities to quickly serve a wide variety of users. SWPC ingests real-time satellite data (i.e., solar wind magnetic field, speed, density; solar x-rays; magnetospheric charged particles and magnetic field, to cite a few key ingredients), and then in-house processing and display systems make the information available to forecasters and in-house research staff.

1.4.2 SWPC also has a unique focus to understand and serve highly technical user communities. SWPC staff has supported aviation for over 20 years. SWPC participates in the Cross Polar Working Group (CPWG), and has hosted airline space weather conferences for more than 15 years.

1.5 SWPC has a backup center at the National Weather Service facility in Cheyenne, Wyoming, which ensures that critical operations can be continued in the event of a disruption of capabilities at the Boulder facility.

1.6 SWPC serves as the World Warning Agency of the 14 State International Space Environment Service, an International Union of Radio Science (URSI)-chartered organization to share data and forecasts of space weather globally.

2. Discussion

2.1 Through the International Airways Volcano Watch Operations Group (IAVWOPSG), a Concept of Operations (ConOps) for space weather information was drafted and first presented at the group's sixth meeting. This version was sent to States for comments in 2012. Over 800 comments were received and adjudicated to their relevance. Subsequently, a draft version 2.2 of the ConOps was presented at the seventh meeting of IAVWOPSG. It was agreed at the meeting that the document was not quite mature enough for adoption by the group. An ad-hoc group, with the United Kingdom as Rapporteur, will propose further changes to the document with the intent of providing an updated version at the eighth meeting of IAVWOPSG in early 2014 for acceptance by the group. The goal is for a final version of the ConOps to be provided in time for the proposed ICAO MET Divisional Meeting (July 2014).

2.2 Additionally, a draft Standards and Recommended Practices (SARPs) for space weather information was reviewed at IAVWOPSG/7 (WP/19). Appendix N of the final report of IAVWOPSG/7 contains the draft SARPs for space weather. These draft SARPs will be presented at the proposed MET Divisional Meeting in July 2014.

2.3 In that SWPC is well-established both as a national and international entity, it is positioned to provide space weather information for aviation, including products, to meet the requirements of ICAO.

3. Action by the Meeting

3.1 The meeting is invited to note the information contained in this paper.
