

## Global Navigation Satellite System Panel

(GNSSP)

### Report of Working Group A Meeting

London, England

10-14 April, 2000

This ICAO GNSSP Working Group A meeting was held at the Thistle Westminster Hotel, London, England, from 10 to 14 April 2000.

Thirty-two experts attended the meeting, coming from 11 States and 3 International Organizations.

Mr. Ross BOWIE of NAV CANADA, the Rapporteur of the GNSSP WG-A, chaired the meeting. Mr. Victor Iatsouk, GNSS Panel Secretary, provided the secretariat support.

The attendees were welcomed to the meeting by the GNSSP Member of the host country, Mr. Jim LAWSON and by the Rapporteur, Mr. Ross BOWIE. Mr. Steven LEIGHTON covered the administrative details.

The members reviewed the report from the last meeting held in Montreal in September 1999. The following items were addressed:

**All WG A Members, to ensure their State/Organization respond to ICAO State Letter \*\*\*\*\* dated 2 July 1999. Mr. Iatsouk updated the meeting on responses from the States so far and indicated that the Secretariat will suggest to the Air Navigation Commission (ANC) the addition of**

**"approach with vertical guidance" to the definitions, leaving the abbreviations and "sub-categories" of the proposed new operation to be decided at a later date. This information was noted.**

**All WG-A Members: Annex 15 recommended changes to be reviewed at the next meeting.**

**Secretariat: to present suggested changes to SARPs and Guidance Material on SBAS coverage/service areas to the WG-B at their October meeting.**

**GNSS members concerned: to provide information papers on WAAS, EGNOS, and MSAS status reporting and SVM for the next WG-A Meeting.**

**All WG-A members: prepare draft of GNSS Manual for the next meeting.**

**Mr. Lines is to draft a paper on phraseology for the next meeting.**

**Here, the panel secretary indicated that GNSSP has to develop GNSS terminology for the inclusion in the PANS-RAC (Doc 4444).**

The meeting reviewed Version 1 of the GNSS Manual. Multiple comments, additions and revisions were brought forward for the inclusion in the next version. Section coordinators were

assigned to draft revisions. It was agreed that the coordinators are to send revised material by e-mail by 30 June 2000 to the WG Rapporteur, Panel Secretary and to Mr. P. Duchaine. The editorial group will thereafter meet and prepare draft Version 2 of the Manual and send it to members by mid-September. This will allow members one month to review Version 2 before the next meeting, where it will be discussed in detail.

The meeting, noting the diversity of terms used across the Annexes and the MOPS, agreed to suggest that, after a decision is taken by the ANC to include the new term "Approach with vertical guidance" in Annex 6, draft GNSS, SARPs and guidance material for Annex 10 should be adapted to this new term. MOPS can then later be adjusted, if needed. The group agreed that, regardless of the terminology used in Annexes and MOPS, the avionics annunciation terminology on approach availability must match the approach chart terminology. Working group A encouraged its members involved in OCP, RTCA and AWOOG Harmonization group activities to promote consistent terminology based on the high level ICAO classification of approach and landing operations (expected to be finalized by ICAO ANC in May-June 2000).

Mr. Paul Humphries (Eurocontrol) introduced a paper on GNSS NOTAM (AIS) issues and expressed strong interest in having input from Eurocontrol at the next working group A meeting (October 2000) where a proposal for amendment to ICAO Annex 15 is expected to be finalized. Eurocontrol also considered participation in the WG-A meeting in Delhi in October.

Mr. Jim Lawson introduced a paper on Encryption of future Galileo signal and stated that WG-B does not foresee technical difficulties in implementation of the encryption, however, there be operational issues to be considered in the event that the encryption is introduced as envisaged. Mr. Lawson indicated to the meeting that encryption is a tool against accidental or intentional interference. Encryption is also used as part of a charging mechanism. As a side note, the meeting noted that WTO rules might affect the charging of the fee for Galileo. Those same rules do not apply to a military system such as GPS. It was noted that the institutional and legal aspect of the proposed encryption of GNSS signal should be elaborated after technical and operational feasibility of the proposal is demonstrated.

Mr. Davies briefed the attendees on the NOTAM system being developed in the USA for WAAS Phase 1. It was understood that these work results would be presented to the next WG A meeting in support of proposed amendment to Annex 15.

Mr. Billman reported on 'Solar Storm' and indicated that a major storm occurred the previous week and that some receivers do have problems with solar activity but that it might be too early for conclusion. WG-B is taking the lead in this issue and further results will be represented to that group.

Mr. Ross Bowie presented a paper on "Local Magnetic Variation" and the meeting found that this should be proposed to the next WG-B meeting.

#### **Information to be available on GNSS Implementation via Internet.**

Having agreed that provision of information on various aspects of GNSS through Internet would facilitate introduction of the system in many States, the meeting suggested that ICAO should attempt a dedicated GNSS web site providing links to the web sites of States that have available significant amount of public information on GNSS implementation. Mr. Manar, Mr. Al Ahmadi and Mr. Sega presented Flimsy 1 listing such topics in which such information could be structured. The FAA representatives indicated that most of the material is already available on-line. They will try to make their present web site more user friendly and report at the next meeting. Other States will determine the feasibility of taking similar action. Mr. Iatsouk indicated that ICAO could support such a system. The meeting agreed to the following:

Initiate arrangements for ICAO GNSS web-site to allow links to national web-sites containing GNSS information. In due course, the Secretary will arrange for a letter to selected States asking for their co-operation in this scheme.

GNSS members (Australia, France, Germany, UK, US) examine a possibility of restructuring their web-site.

### **Future Work Planning**

The Rapporteur noted that the agenda for the next WG A meeting would include a review of draft Version 2 of the GNSS Manual, a review and approval of the proposed amendments to Annex 15 and PANS-ABC and a discussion of various operational issues. It will also include an initial review of proposed GNSS phraseology for the inclusion in PANS-RAC (Doc 4444), which was not addressed at this meeting due to lack of input.

### **Next Meeting**

Mr. Ramalingam, the GNSS Member nominated by India, confirmed that the next meeting of WG A will be hosted in New Delhi from 16-20 October 2000. Working group A agreed that a one-day briefing, with presentation by WG members, can be planned in New Delhi in conjunction with the meeting. It was agreed that the workshop should be scheduled for 13 October 2000.

The meeting was also informed of an ICAO GNSS/ATN Seminar scheduled to be held in Nairobi following WG A meeting in NEW Delhi so that some members could support the seminar at a minimal cost for their administrations. The GNSSP Members/advisors nominated by Australia, France, UK and the US agreed to provide support for the seminar subject to confirmation through official correspondence with ICAO. The secretary will therefore issue ICAO invitations to the administrations asking for support for the Nairobi seminar.

After New Delhi, the next meeting will be hosted by the FAA Technical Center, near Atlantic City, in May 2001.

