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Prepared by EUMETSAT  
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**STATUS OF SHARED GSN DATA FOR RADIO-OCCULTATION MISSIONS**  
In response to CGMS action 34.05

**EUMETSAT is currently exploring with ESOC the possibilities to provide Ground Support Network data to UCAR on a bilateral exchange basis. A trial data exchange is foreseen to commence in the coming months.**

## **Status of shared GSN data for radio-occultation missions**

### **1 INTRODUCTION**

The 34<sup>th</sup> CGMS noted that there may exist opportunities to share facilities and data related to radio-occultation missions, in particular with respect to precise time-referencing needed for accurate data processing.

### **2 Current Status at EUMETSAT**

The support data required for the processing of the GRAS (GNSS (Global Navigation Satellite System) Receiver for Atmospheric Sounding) data is provided to EUMETSAT by the European Space Operations Centre (ESOC) Navigation Support Office. This Ground Support Network (GSN) data contains information in addition to GPS orbits and clock-solutions also additional auxiliary data. The data is made available to EUMETSAT in a near –real time fashion every 15 minutes within 30 minutes of the last epoch and the overall availability is 98% or higher.

### **3 Opportunities for data exchange**

The availability of operational near-real time GSN data provides an opportunity for data exchange with other operational radio-occultation processing centres. EUMETSAT has been approached by UCAR (University Corporation for Atmospheric Research) with a request to explore the possibility for data exchange on a bi-lateral basis. The impetus for the contact has been some major outages in the provision of COSMIC occultation data due to unavailability of the required support data. On the other hand UCAR has deployed a so-called “bit-grabber” network that provides high-precision data that would enable retrieval of upper-tropospheric humidity with GRAS and would therefore be an interesting complement to the current GSN-data available at EUMETSAT.

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As a result EUMETSAT has instigated a discussion with ESOC on the possibilities to provide GSN-data to UCAR on a bilateral exchange basis. As the current number of operational radio-occultation mission centres is limited, such a model could also be explored in the future if desired.

In order to facilitate his type of data exchange ESOC has discussed the possibility to make the GSN-data provided to them with the various institutes involved. ESOC has received an agreement with the institutes in question for the delivery of the data to EUMETSAT for further distribution to UCAR for the generation of COSMIC products. A further distribution by UCAR of the received data is excluded and the initial agreement is valid for the extent of the current contracts in place.

The next phase of the negotiations with ESOC will detail the technical implications and an implementation plan, foreseen in the coming months.

#### 4 CONCLUSIONS

EUMETSAT is currently exploring with ESOC the possibilities to provide Ground Support Network data to UCAR on a bilateral exchange basis. At present time the data ownership issues and the possibilities for a re-distribution of data from EUMETSAT to UCAR have been clarified. The next step of the project is the implementation of the required changes and the agreement of an implementation plan and approach.