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ASSESSMENT OF INTERFERENCE FROM FY-3 SATELLITES TO THE METOP CDA EARTH STATION AT SVALBARD AROUND 7.8 GHz

In response to CGMS action 33.12

This document summarises the results of a detailed assessment of interference from FY-3 satellites to the MetOp Central Data Acquisition (CDA) Earth station at Svalbard around 7.8 GHz.

CGMS Members are invited to take note.

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1 INTRODUCTION

In response to action 33.12, EUMETSAT has performed an assessment of the potential interference of FY-3 satellites to the MetOp CDA Earth Station at Svalbard around 7.8 GHz.

Both satellites transmit in the band 7750-7850 MHz with partly overlapping frequency spectra. In the time periods in which both satellites are visible by the MetOp CDA Earth station at Svalbard the permanently transmitting broadcasting type downlink of FY-3 has the potential to interfere into the prioritised reception of stored mission data.

The results of the detailed interference assessment as summarised below are obtained on the basis of FY-3 system characteristics as provided by CMA and CASC in response to CGMS action 33.11.

2 RESULT OF THE INTERFERENCE ASSESSMENT

According to the detailed evaluation as performed by EUMETSAT, the permanently transmitting broadcasting type downlink of FY-3 could interfere into the downlink reception of the MetOp stored mission data over Svalbard, for a total of 6.87 minutes in a period of 365 days. This corresponds to a data loss due to interference from FY-3 during 0.0118% of the time in which the CDA Earth station has a link to MetOp.

The interference events with durations between 1 and 76 seconds are concentrated on one day every 79 days (around 4 days within one year).

3 CONCLUSION

The circumstance that the potential interference from FY-3 into the reception of the stored mission data at Svalbard during MetOp data dump transmissions is minimal results mainly from the fact that there is a separation of equatorial crossing times between both satellite systems (MetOp: 9:30D, FY-3: 10:10D).

In this regard it should be noted that the results of the detailed interference assessment as summarised above were obtained on the basis of FY-3 system characteristics as provided by CMA and CASC in response to CGMS action 33.11.

Updated or modified FY-3 system characteristics could have an impact on the simulation results and could significantly increase the interference potential to MetOp stored mission data reception, thus requiring FY-3 to implement appropriate measures to reduce the amount of interference to an acceptable level.