

Future Geostationary Meteorological Satellite Systems

FUTURE GEOSTATIONARY METEOROLOGICAL SATELLITE GOMS/Electro N2

Summary and purpose of the WP

New geostationary meteorological satellite GOMS/Electro N2 development is continued.

The tentative launch date of GOMS/Electro N2 satellite is 2006. The satellite will be placed into geostationary orbit at 76° E.

The spacecraft will be a three-axis stabilized platform, with basic payload consisting of imager MSU-G, retransmitters, DCS (300 regional and 33 International channels). In addition, it will be equipped with a COSPAS/SARSAT geostationary transponder.

Action proposed: no action required.

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Primary objectives of the GOMS/Electro N2 mission:

- Continuous observation of the Earth within a radius of 55-60 degrees centred at the sub-satellite point;
- Simultaneous images of cloud cover and the Earth's surface in 10-12 spectral channels of visible and infrared range;
- Geostationary coverage of the Indian Ocean to support WMO's Tropical Cyclone programme, taking into account the Tropical Cyclone Committee's requirements;
- Collection and retransmission the hydrometeorological data from national and international platforms (DCPs) to the main and regional computing centres within the area of radio visibility of the satellite;
- Heliogeophysical measurements at geostationary orbital altitude;
- Dissemination through the satellite of various output information products (image fragments, charts and numerical data) from the main and regional centres to national and foreign users' receiving stations.

Besides standard meteorological communication package (the DCS and the re-transmitters) the key payload will consist of imager MSU-G (optical line-by-line scanning radiometer). It should provide image data in three visible and in 7 IR channels. The spatial resolution in sub-satellite point will be about 1 km for visible and 4 km for IR channels. A new earth image will be provided every 30 min. Along with this the more frequent regime is envisaged (every 10-15 min) for selected MSU-G image fragments and channels. In the framework of design finalization the possibilities to implement supplementary channels 11 (1.6 µm) and 12 (13.4 µm) should be investigated.

It is worth to note that providing accurate on-board calibration for IR and solar channels remains an issue. Another issue is ensuring about 10 years of nominal lifetime for the spacecraft and its basing systems (including MSU-G). In case of successful solution of listed problems the MSU-G instrument with full ensemble of 12 channels should provide the information similar to that of MSG/SEVIRI.

The International WEFAX/LRIT and HRIT standards should be implemented for GOMS/Electro N 2 data broadcast to user stations.

The second important mission objective of GOMS/Electro N 2 is the development and maintaining of national data collection system (DCS). According to current planning the

developed DCS will provide the operation of 300 regional and 33 international channels.

Within the framework of this programme, it is planned to develop two ground receiving centres in Russia and to allocate not less than 800 national data collection platforms (DCP).

GOMS/Electro N 2 will be also equipped with a transponder for the geostationary Search & Rescue service of the COSPAS/SARSAT organization.