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## **ESA awarded a TriaGnoSys led consortium for study on RM using adaptive FMT in DVB-RCS multi-beam systems**

Noordwijk, Weßling – Based on the success of the study ‘Protocols and Signalling for Adaptive Fade Mitigation Techniques (FMT) in DVB-RCS Multi-Beam Systems’ - finalised early this year - ESA awarded today a TriaGnoSys led consortium to advance the achievements towards a simulator for ‘Resource Management (RM) using adaptive FMT in DVB-RCS multi-beam systems’. The consortium for the DVB-S2/RCS RM study is consisting of Audens Act, DLR’s Institute of Communications and Navigation, Nera and TriaGnoSys.

### About DVB-S2/RCS RM

The study aims to identify, analyse, simulate, optimise and demonstrate resource management (RM) schemes for adaptive fade mitigation techniques with the necessary corresponding algorithms, functionalities, protocols, signalling information and formats for future broadband, DVB-based satellite systems leading to a higher efficiency with respect to current systems.

The study will propose solutions and recommend RRM schemes for modifications of the current DVB-S2/RCS air interface standards allowing an evolutionary development of the current standards. Also cost of terminals and gateway will be considered in the evaluation of different RRM schemes to support the competition of satellite systems with low cost mass market products of the competing terrestrial networks.

Appropriate RM techniques will include CAC and scheduling algorithms, MAC protocols and signalling resource allocation algorithms. In order to optimise the resource management for FMT under realistic conditions, the considerations will take into account physical layer impairments, such as channel estimation errors, synchronisation performance and interference.

The study will investigate the performance of the RM solutions through detailed simulations. A sophisticated simulator will be developed that allows in-depth modelling of the satellite system, and will implement the pre-selected RRM architecture, algorithms and protocols. End-to-end service simulation will derive system performance measures for efficiency and quality.

Profound research on potential RRM schemes will be performed and advanced algorithms and protocols will be developed and assessed.

Efficient radio resource management is key for the service cost of satellite systems. The competition with terrestrial networks forces satellite services to come down in

cost. Fade mitigation techniques offer enormous potential on spectrum saving or on the increase in bit rate. This study will enable

- operators to manage the flexibility of FMT systems
- manufacturers to build versatile gateways and terminals that can exploit the FMT techniques; it will
- provide a versatile tool for research and development of RRM for DVB-S2/RCS

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