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Authorization of Commercial Communication Satellite Grounds for Promoting Turkish Data Relay System

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Abstract : Uninterrupted and continuous satellite communication through the whole orbit time is becoming more indispensable every day. Data relay systems are developed and built for various high/low data rate information exchanges like TDRSS of USA and EDRSS of Europe. In these missions, a couple of task-dedicated communication satellites exist. In this regard, for Turkey a data relay system is attempted to be defined exchanging low data rate information (i.e. TTC) for Earth-observing LEO satellites appointing commercial GEO communication satellites all over the world. First, justification of this attempt is given, demonstrating duration enhancements in the link. Discussion of preference of RF communication is, also, given instead of laser communication. Then, preferred communication GEOs – including TURKSAT4A already belonging to Turkey- are given, together with the coverage enhancements through STK simulations and the corresponding link budget. Also, a block diagram of the communication system is given on the LEO satellite.

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