Development of a Compressed TCPED Cycle for RCM follow-on missions

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ABSTRACT

To enhance and exploit space-based surveillance capabilities serving the future needs of a broader range of users and applications, the RCM follow-on missions will have to define new concepts of operations for surveillance taskings with minimal lead time, to permit flexible operations in a system-of-systems environment.

In the DND Defence Innovation Research Program (DIRP) coordinated by Defence Research & Development Canada (DRDC), Airbus Defence and Space together with ADGA and Insarsat conducts a study to develop a compressed TCPED (Tasking, Collection, Processing, Exploitation, and Dissemination) cycle for the RCM follow-on mission.

This talk will provide an overview to the main objectives of the Airbus DIRP project, the study logic and the innovations that will be investigated and developed.

Together with institutional stakeholders a search and rescue scenario will be defined to derive a set of relevant user requirements. From these requirements a generic system architecture for a potential RCM follow-on mission will be defined. The main objective of the Airbus DIRP project is the development of new concepts of operations with the aim to compress the TCPED cycle of the RCM follow-on mission to near-real-time. To achieve this goal several, innovative approaches and concepts will be investigated and developed. These innovations comprises the utilization of Data-Relay-Satellite-Communication, such as the European Data Relay Satellite System EDRS, automatic & autonomous satellite-to-satellite tasking based on the potential of on-board data processing, new concepts for automatic ship-detection algorithms, and the development of cross-cueing role within a system-of-systems, e.g. with other satellite missions such as the potential future German High Resolution Wide Swath (HRWS) Radar satellite mission.

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