INTERNSHIP – Satellite Video Streaming for UAV

Subject: Satellite Video Streaming for UAV

Domains: Satellite Telecommunication and Networks, Aerospace, Software

Company: ATMOSPHERE is a human size SME, which designs, builds and operates satellite connectivity solutions for aerial operations. ATMOSPHERE's mission management platform, PLANET, is deployed on a growing number of flight operators in Europe and North America. In answer to market demand, ATMOSPHERE is also developing connectivity solutions for UAV.

Topic description :

ATMOSPHERE has developed satellite connectivity solutions for UAV, based on legacy Iridium constellation. Current solution supports UAV control and command traffic Beyond Line of Sight. But its capacity is limited for the transport UAV payload information. In particular, for some applications, UAV users need live video stream from on-board camera. With the new Iridium satellite constellation being just completed in January 2019, it might be now possible to transmit low resolution video. The objective of the internship is to confirm the feasibility of low resolution video transmission over limited bandwidth satellite networks. A proof of concept (PoC) will be developed, including video acquisition and compression, video streaming over real or simulated satellite link, and video display in a web application.

Work Plan :

- Requirements analysis
- State of the Art (cameras, compression algorithms, streaming protocols)
- Unitary benchmark of algorithms
- Design of the end to end system
- Implementation of a laboratory demonstration platform
- Tuning of the algorithms, and performance evaluation
- Demonstration scenarios
- Documentation

Requirements :

- Telecommunication and Networks background, Computer Science
- Fluent English

Duration: 4 to 6 months

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