

A SIMPLE METHOD TO GEOLOCALISE THE INTERFERENCE SOURCES: SOME LABORTORY TEST RESULTS

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Growing satellite telecommunications and related technologies in the commercial space industry and the ever-increasing revenues that are produced, the necessity to invest for developing effective space secure conditions and solutions to combat the Radio Frequency Interferences (RFI) are justified and put in place by the stakeholders. The security discipline is already supported in Military Satellite Communications (MILSATCOM) where costly customised solutions and technologies have been developed and implemented. For commercial SATCOMs, to approach this objective, the operators have to assess the level of the risk (probability of interference per commercial impact of the effects) with respect to the costs of mitigating the impacts of interferences.

A first compromise between effectiveness and implementation costs in the commercial SATCOM market is provided putting attention and Operator interest on the technologies and solutions on geo-localisation or Direction of Arrival (DoA) of the RFI sources located in the antenna footprint capability from single satellite.

The ESA Study “On-board Interference Geo-Location System“, (Ge.Lo.Sy.) has the focus on the investigation and development of a low-cost on-board interference geo-localisation technique, providing a preliminary design of the defined solution that is verified and validated at laboratory level through the implementation of a proof-of-concept.

The present paper provides an outlook on the proposed, chosen and laboratory tested geo-localisation technical solution, demonstrating its effectiveness in term of results and costs. The laboratory tests results are the focus of the present paper.