

49th IAA SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE
ACTIVITIES (D5)

Cyber-security threats to space missions and countermeasures to address them (4)

Author: Ms. Angelika Mann

ESA european space agency, Italy, angelika.mann@esa.int

Mr. Stefano Zatti

ESA european space agency, Italy, stefano.zatti@esa.int

THE ESA CYBER SECURITY TRAINING RANGE

Abstract

Space-based systems play an important role in our daily life and business. The trend is likely to rely on the use of space based systems in a growing number of services or applications that can be either safety-of-life critical or business and mission-critical. The security measures implemented in space-based systems are often insufficient to guarantee the information assurance properties, in particular resilience, availability and integrity of these services/applications. The various and possible cyber attacks on space segments, ground stations and its control segments are meanwhile well known and experienced in many cases. The professional use of a Cyber Security Training Range, a simulation infrastructure where various scenarios can be recreated and tested, to educate Mission planners, Mission engineers and System administrators on the possible attacks at the different mission phases shall be available as daily working asset.

This paper will:

- address the set-up of a cyber security training range and its use (Components of the cyber range, entities involved to gain from an international experience -i look beyond your own capabilities),
- address the cases that can/should be simulated,
- demonstrate the benefit for missions in the planning phase,
- demonstrate the benefit for missions in operations.

A number of practical examples will be provided.