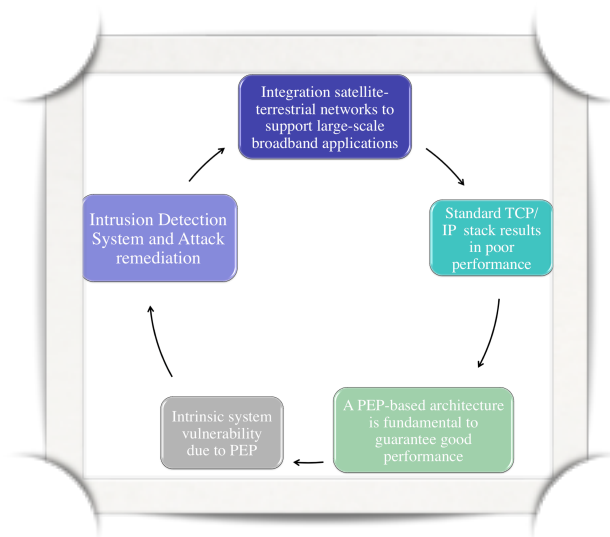


# Satellite Network Protection against PEP-Related Vulnerabilities

Design and implementation of a system for the detection, reaction and remediation to PEP-related attacks

C. ROSETTI<sup>1</sup>

**Abstract.** In the frame of the Master in “Homeland Security”, I was involved in a stage at the Department of Electronics Engineering of the University of Rome “Tor Vergata”, dealing with security for heterogeneous and inter-operable communication networks including a satellite segment. Integration of different networks enhances sustainable applications but specific vulnerabilities must be faced up too. INTERSECTION project is aimed to both design and implement an Intrusion Detection System (IDS) for the detection of anomalous events in the interconnected networks attributable to security attacks. The presented work is focused on the application of INTERSECTION IDS on the target scenario, where the presence of Proxy Enhancing Proxies (PEPs) at the edges of satellite links leads to the twofold effect of improving TCP performance but also increasing a PEP-related vulnerability due to the violation of the end-to-end semantic of TCP. Then, the paper addresses the above mentioned issue through the realization of a test bed including a real geostationary satellite link operated by Telespazio.



**Keywords.** IDS, PEP, TCP

<sup>1</sup> Partecipante al Master Universitario di II° livello in “Homeland Security” - I edizione 2008/2009