



**Integrated Project 26950 : SatSix**  
**Deliverable 3000-1**



*Emulation test bed implementation (1<sup>st</sup> Phase)*  
*Design document*

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**Abstract:**

This deliverable describes the SATSIX emulation test bed design. It is based on previous work performed within the frame of the SATIP6 IST project, and aims to demonstrate network and access features studied in WP2100 and WP2200.

The deliverable specifies the overall emulation test bed architecture with the global interfaces. The design of each core component is then presented, with a particular focus on the functional aspects, the interfaces and the provided statistics. The network components are introduced and the set of applications is defined. Finally, tests definition are presented, followed by the definition of the scenarios that will be demonstrated using the emulation test bed.

Several annexes are associated with this document:

- Developer manual (annex 1)
- Environment plane design document (annex 2)
- Installation manual (annex 3)

**Keyword list: Test bed, adaptive physical layer, RRM, QoS, multicast, mobility, security**

## Executive Summary

The emulation test bed aims to emulate a complete DVB-RCS/DVB-S2 satellite system with a strong focus on simplicity, accuracy and usability. It is dedicated to the validation and performances analysis of access and network features defined in WP2000.

This document details the design of the emulation test bed and describes the foreseen scenarios.

The scope of the technical topics covers:

- DVB-RCS/DVB-S2 adaptive physical layer and access layer emulation
- Layer 2 security
- AAL5/ATM or ULE/MPEG2-TS
- IPv4 and IPv6 native support
- QoS framework including:
  - Enhanced IP scheduling (HDLB)
  - Dynamic IP & MAC QoS support using SIP Proxy and QoS Agent /QoS Server architecture
- Optimized RRM supporting adaptive physical layers
- Dynamic IPv6 multicast
- Mobile IPv6 support
- Mobility-Multicast coupling
- Mobility-QoS coupling

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