



# AROMA IST-4-027567

## D07

## *Testbed Specification*

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**Abstract:**

This deliverable presents the general architecture of the AROMA testbed. Starting from the legacy EVEREST testbed, the deliverable specifies the relevant functionalities and performance requirements of the innovative issues incorporated in the testbed. The document also describes the methodology to be followed for integrating and testing the AROMA testbed.

**Keyword list: Testbed, Architecture, Innovative issues**

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## DOCUMENT HISTORY

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| 21-04-2006 | 002 | Int | Second draft of ToC for comments. |
| 15-05-2006 | 003 | Int | First version for comments and additions. |
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| 16-06-2006 | 005 | Int | Revised version for comments and additions. |
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| 30-06-2006 | 007 | Int | Updated version with changes proposed by PCC |
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# EXECUTIVE SUMMARY

The scope of this document is to provide a global description of the selected architecture and the functionalities considered for the AROMA testbed.

As mentioned in the technical annex, the AROMA testbed must be considered as an upgrade of the legacy IST-EVEREST testbed, which is a real-time HW/SW platform currently emulating a heterogeneous radio access network that includes several Radio Access Technologies (RAT) emulation: UMTS Terrestrial Radio Access Network (UTRAN), GSM/EDGE Radio Access Network (GERAN), and Wireless Local Area Network (WLAN); the corresponding common core network (CN) based on Diffserv technology and supporting multimedia terminals with IP connectivity.

Since one of the main objectives of the AROMA testbed is to upgrade the available legacy IST-EVEREST testbed with new features such as to incorporate the IP transport and its effects into the Radio Access Network (RAN) emulation assuming an all-IP architecture, it is essential to know the current status of the testbed.

First of all, starting from a general overview of the AROMA testbed, the hardware infrastructure and the software environment of the legacy EVEREST testbed are summarized. Next, all the innovative issues to be added to the testbed are described in detail. In particular, the considered CN topology is presented, as well as the way to emulate IP transport in the RANs is described. The description of the Wireless QoS Broker (WQB) element as a Quality of Service (QoS) manager of the Radio Access part follows. Later on, the implementation issues related with the CN side, especially in reference to the Multiprotocol Label Switching (MPLS) implementation approach followed, the use of a new Bandwidth Broker (BB) as a CN QoS manager and the Mobility Management aspects, are addressed. Finally the AROMA testbed goals and the way of working, which includes the integration methodology and an overview of the test and validation plan, close the deliverable.

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