



AROMA IST-4-027567

D20

Trial results and algorithm validation

Contractual Date of Delivery to the CEC: 30-11-2007

Actual Date of Delivery to the CEC: 10-01-2008

Editor: Anna Umbert (UPC)

Author(s): See list

Participant(s): UPC, KCL, PTIN

Workpackage: WP4

Est. person months: 16

Security: PU

Nature: Report

Version: 001

Total number of pages: 76

Abstract:

This report contains the results obtained in the execution of the test plan elaborated to perform the trials. An analysis of results is also done comparing them with those expected to be obtained, in order to evaluate and validate activity carried out within the project.

Keyword list: Trials results, test bed.

DISCLAIMER

The work associated with this report has been carried out in accordance with the highest technical standards and the AROMA partners have endeavoured to achieve the degree of accuracy and reliability appropriate to the work in question. However since the partners have no control over the use to which the information contained within the report is to be put by any other party, any other such party shall be deemed to satisfied itself as to the suitability and reliability of the information in relation to any particular use, purpose or application.

Under no circumstances will any of the partners, their servants, employees or agents accept any liability whatsoever arising out of any error or inaccuracy contained in this report (or any further consolidation, summary, publication or dissemination of the information contained within this report) and/or the connected work and disclaim all liability for any loss, damage, expenses, claims or infringement of third party rights.

DOCUMENT HISTORY

Date	Version	Status	Comments
09-10-2007	001	Int	First draft of ToC for comments
22-11-2007	002	Int	First version for comments
03-12-2007	003	Int	For final comments and acronyms check
04-12-2007	004	Int	UPC and PTIN work finished
05-12-2007	005	Int	First complete version
20-12-2007	006	Int	Version for PCC review
10-01-2008	001	Apr	Document submitted to the UE

Authors List

Anna Umbert Juliana (UPC)
Nemanja Vucevic (UPC)
Francisco Bernardo (UPC)
Miguel López-Benítez (UPC)
Lukasz Budzisz (UPC)
Ricardo Azevedo Pereira (PTIN)
André Oliveira (PTIN)
Francisco Fontes (PTIN)
Dev Audsin (KCL)

EXECUTIVE SUMMARY

The aim of this document is to provide the results of the trials described in deliverable “D15 – Trials Description”. Different scenario demonstrations have been performed in the AROMA testbed for testing and validating the proposed RRM/CRRM/BB algorithms, E2E QoS strategies and mobility management.

As described in D15 those trials are focusing in five main areas, going from Quality measurements with applications to the test of some RAT selection/CRRM algorithms, E2E QoS strategies, Admission Control algorithms in the BB and finally with QoS and mobility.

In each area several demonstrations are defined, and obtained results and its analysis have been done for each one.

The testbed definition and presentation is not the intent of this deliverable. That information has been presented in “D07 - Testbed Specification”, (30-6-2006) document that should be used as reference to understand the testbed architecture and available functionalities.

Table of Contents

EXECUTIVE SUMMARY	5
1 INTRODUCTION	8
2 AREA 1: QUALITY MEASUREMENTS WITH APPLICATIONS	8
2.1 DEMONSTRATION 1: BANDWIDTH ASSIGNMENT	9
2.1.1 <i>Description</i>	9
2.1.2 <i>Results – Analysis and Validation</i>	9
2.2 DEMONSTRATION 2: HANDOVER IMPACT.....	13
2.2.1 <i>Description</i>	13
2.2.2 <i>Results – Analysis and validation</i>	14
2.3 DEMONSTRATION 3: NETWORK CONGESTION	23
2.3.1 <i>Description</i>	23
2.3.2 <i>Results – Analysis and Validation</i>	23
3 AREA 2: RADIO ACCESS TECHNOLOGY (RAT) SELECTION / COMMON RADIO RESOURCES MANAGEMENT (CRRM) ALGORITHMS	25
3.1 DEMONSTRATION 1: INITIAL RAT SELECTION ONLY USING NCCB STRATEGY	25
3.1.1 <i>Description</i>	25
3.1.2 <i>Results – Analysis and Validation</i>	26
3.2 DEMONSTRATION 2: RAT SELECTION INCLUDING VHO USING NCCB STRATEGY	31
3.2.1 <i>Description</i>	31
3.2.2 <i>Results – Analysis and Validation</i>	32
3.3 DEMONSTRATION 3: RAT SELECTION INCLUDING VHO USING FITTINGNESS FACTOR BASED STRATEGY	38
3.3.1 <i>Description</i>	38
3.3.2 <i>Results – Analysis and Validation</i>	39
4 AREA 3: STRATEGIES FOR E2E QOS	45
4.1 DEMONSTRATION 1: QOS NEGOTIATION – SESSION INICIALIZATION	45
4.1.1 <i>Description</i>	45
4.1.2 <i>Results - Analysis and Validation</i>	46
4.2 DEMONSTRATION 2: QOS RE-NEGOTIATION PROCEDURE TRIGGERED BY THE UUT	48
4.2.1 <i>Description</i>	48
4.2.2 <i>Results - Analysis and Validation</i>	48
4.3 DEMONSTRATION 3: QOS RE-NEGOTIATION PROCEDURE TRIGGERED BY A RAT	50
4.3.1 <i>Description</i>	50
4.3.2 <i>Results - Analysis and Validation</i>	51
4.4 DEMONSTRATION 4: QOS RE-NEGOTIATION PROCEDURE TRIGGERED BY THE CORE NETWORK	53
4.4.1 <i>Description</i>	53
4.4.2 <i>Results - Analysis and Validation</i>	54
5 AREA 4: ADMISSION CONTROL ALGORITHMS IN THE BB	57
5.1 DEMONSTRATION 1: TEST CAC ALGORITHM WITH LIGHT LOAD.....	57
5.1.1 <i>Description</i>	57
5.1.2 <i>Results</i>	58
5.1.3 <i>Analysis and Validation</i>	59
5.2 DEMONSTRATION 2: TEST CAC ALGORITHM WITH HEAVY LOAD	59
5.2.1 <i>Description</i>	59
5.2.2 <i>Results</i>	59
5.2.3 <i>Analysis and Validation</i>	60
5.3 DEMONSTRATION 3: CAC ALGORITHM PERFORMANCE DURING A HANDOVER PROCESS	60
5.3.1 <i>Description</i>	60
5.3.2 <i>Results</i>	61
5.3.3 <i>Analysis and Validation</i>	62
5.4 DEMONSTRATION 4: FLOWS PRE-EMPTS A LOWER PRIORITY FLOW	62
5.4.1 <i>Description</i>	62
5.4.2 <i>Results</i>	63
5.4.3 <i>Analysis and Validation</i>	65

- 6 AREA 5: QOS AND MOBILITY 66**
- 6.1 DEMONSTRATION 1: IP HANDOVER WITH MPLS 66
 - 6.1.1 *Description*..... 66
 - 6.1.2 *Results*..... 66
 - 6.1.3 *Analysis and Validation* 67
- 6.2 DEMONSTRATION 2: FAST IP HANDOVER 69
 - 6.2.1 *Description*..... 69
 - 6.2.2 *Results*..... 69
 - 6.2.3 *Analysis and Validation* 69
- 6.3 DEMONSTRATION 3: EVALUATION OF THE IP HANDOVER DISRUPTION 70
 - 6.3.1 *Description*..... 70
 - 6.3.2 *Results*..... 70
 - 6.3.3 *Analysis and Validation* 71
- CONCLUSIONS 72**
- WORK DISTRIBUTION..... 73**
- LIST OF ACRONYMS..... 74**
- REFERENCES 76**