

**AROMA IST-4-027567****D17*****Economic evaluation of novel AROMA RRM/CRRM algorithms and solutions*****Contractual Date of Delivery to the CEC:** 30-10-2007**Actual Date of Delivery to the CEC:** 03-12-2007**Editor:** Robert Farotto (TI)**Author(s):** See list**Participant(s):** TI, TID, TEL**Workpackage:** WP2**Est. person months:** 7**Security:** PU**Nature:** R**Version:** 001**Total number of pages:** 68**Abstract:**

This deliverable describes the potential economic advantages of using specific AROMA RRM/CRRM algorithms and solutions. The economical analysis is carried out taking into account selected scenarios, also providing specific business case based on potential market demands.

Keyword list: CAPEX, OPEX, Techno-economic issues, CRRM algorithms, Mobile TV, MBMS, HSDPA

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EXECUTIVE SUMMARY

This deliverable reports an analysis of the potential economic impacts tied to the RRM/CRRM solutions investigated within the AROMA project. The economical analysis is carried out taking into account specific exemplary scenarios, and also making use of potential market demands.

After giving some general information related to the methodology followed for the techno-economic evaluations, the document focuses on a couple of relevant study cases:

- the First one dealing with a selected CRRM algorithm based on a “fittingness factor” (it is a particular metric that helps in selecting the most suitable RAT/cell to be used in a heterogeneous scenario), whereas
- the second one is related to the mobile TV over MBMS versus HSDPA.

In both the case studies, the techno-economic evaluations have been carried out by assuming a short or medium term increase of data traffic and by analyzing the potential savings offered by the addressed solutions with respect to the total investment (CAPEX+OPEX) needed to increase the capacity of a pre-existing network. Notice that the analysis has not been based on revenues because they, often, are not proportional to the load generated in the network and rely on different mechanisms (marketing based) with respect to the technical ones.

More precisely, in the CRMM study case related to “fittingness factor” the savings offered by the CRRM algorithm with respect to the case when the algorithm is not present are evaluated, assuming that new investments are needed for upgrading the already existing UTRAN sites with the introduction of additional frequency carriers, in order to fulfill the assumed traffic increase for the next 5 years.

In MBMS case study, the target of the techno-economic analysis is to compare the different investments needed to enhance an existing 3G network, in order to fulfill the requirements due to the introduction of massive (in the long-term) services based on TV and video, on a mobile terminal, comparing two alternatives: 1) exploitation of HSDPA connections and 2) MBMS introduction to provide broadcast/multicast. The techno-economic analysis on MBMS is completed by a short but comprehensive overview of Mobile Operators strategies and market trends of TV Mobile services in Europe.

The document is organized as follows: After a brief introduction an overview of the (Common) Radio Resource Management solutions envisaged in AROMA is presented to select the most appropriate algorithms to be analyzed from a techno-economic viewpoint. Then the methodology to be followed in the analysis is presented and a complete techno-economic analysis for the two selected study cases (the CRRM “fittingness factor” and mobile-TV over MBMS) is done. Finally some conclusions are also addressed. The document also includes two annexes: one devoted to discuss the envisaged analytical model of the CRMM algorithm based on the fittingness factor framework, whereas the other is devoted to provide a dimensioning model for the mobile-TV scenario.

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