



Mobile Network Cooperation at its Best in B3G: Network Composition

Scheduled:

Monday 15 September 2008, afternoon

Presenter:

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Abstract:

Mobile network cooperation is well known in cellular networking where networks belonging to different operators cooperate to give roaming end-users seamless access to basic services. However mobile network cooperation as known today is not yet at its best. It relies on substantial off-line agreements and cumbersome manual configurations. Network composition is an emerging concept that brings network cooperation to its best. It is rooted in ambient networking, a beyond 3G networking approach proposed by a European Union 6th Framework project. It enables scalable and dynamic cooperation between heterogeneous networks and seamless access to new services. Off-line agreements and manual configurations are non-existent or kept to a bare minimum. This tutorial is devoted to network composition. We start by discussing roaming in 3G cellular networks and pinpointing the shortcomings. This is followed by an introduction to ambient networking, the setting for network composition. We then discuss the principles, protocols and algorithms of network composition. A concrete case study on registry composition is finally presented for illustration purpose.

Outline:

The planned content is as follows:

1. Introduction
2. Network cooperation in 3G - around 45 minutes
 - a. The IP Multimedia Sub-System (IMS)
 - b. Cooperation at the control layer of IMS including scenarios
 - c. The drawbacks

3. Ambient networking as the setting for network composition – around 45 minutes
 - a. Overall architecture of ambient networks
 - b. Media delivery as example of ambient network functional entity
4. Network composition - around 45 minutes
 - a. Composition degrees and scenarios
 - b. Composition procedure
 - c. Signalling for composition
5. Registry composition as a case study – around 45 minutes
 - a. Problem statement, scenarios and procedures
 - b. Negotiation for registry composition
 - c. Signalling for registry composition
6. Conclusion

Biographical Sketch:

Roch H. Glitho [SM] (<http://www.ece.concordia.ca/~glitho/>) holds a Ph.D. (Tekn. Dr.) in tele-informatics (Royal Institute of Technology, Stockholm, Sweden) and M.Sc. degrees in business economics (University of Grenoble, France), pure mathematics (University Geneva, Switzerland), and computer science (University of Geneva). He works in Montreal, Canada, as an Expert in service engineering at Ericsson, and as an Adjunct Associate Professor at Concordia University where he teaches a graduate course on next generation networks. In the past he worked as a Senior Specialist in network management for Ericsson Telecom in Stockholm, and as an R&D engineer for a computer manufacturer in Oslo, Norway. His industrial experience includes research, international standards setting (e.g. contributions to ITU-T, ETSI, TMF, ANSI, TIA, and 3GPP), product management, project management, systems engineering and software/firmware design. He is an IEEE distinguished lecturer and a senior technical editor of IEEE Communications Magazine. In the past he has served as Editor-In-Chief of IEEE Communications Magazine and IEEE Communications Surveys & Tutorials Magazine. His research areas include architectures for end-users services, network management, signalling and mobile code. In these areas, he has authored around 80 peer-reviewed papers, more than fifteen of which have been published in well-known refereed journals. He has also guest-edited some 10 special issues of refereed journals and has more than 20 patents in the aforementioned areas.