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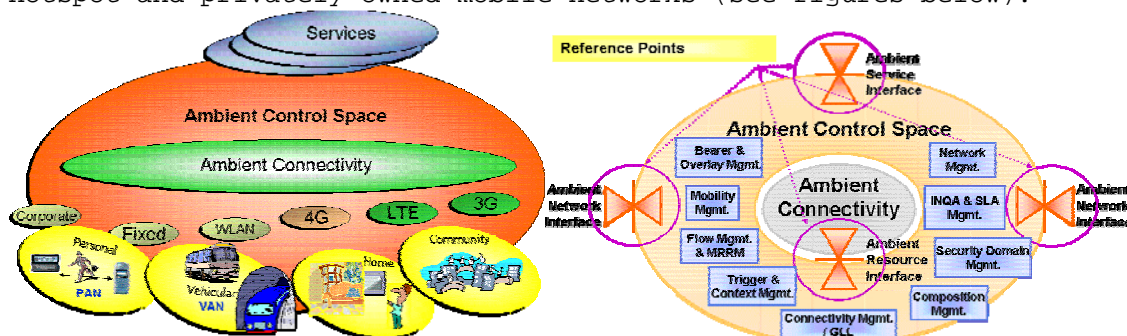
Ambient Networks: A Network Control Layer for the Future Internet

Presenter: Dr. Norbert Niebert
(Technical Manager of the Ambient Network project,
<http://www.ambient-networks.org>)
Ericsson Research, Herzogenrath, Germany
Norbert-Niebert@ericsson.com

Abstract

Ambient Networks denotes an innovative concept that addresses the creation of novel network solutions for mobile and wireless systems beyond 3G. The approach is motivated by the objective to support a networking environment of increased competition as well as cooperation, an environment that is populated by a multitude of user devices, wireless technologies, network operators and business actors pursuing their individual objectives.

Currently, the network layer is heading towards universal use of IP transport technology, now the challenge is to develop a consistent control framework to meet all the challenges that the future mobile environment imposes. For instance, new mobile network solutions are needed to cope with ever changing configurations in the service delivery chain involving multiple access types and access operators. New scalable concepts for instant roaming agreements are needed to enable roaming between cellular networks and the increasing number of hotspot and privately owned mobile networks (see figures below).



Ambient Networks offers a unified, modular control layer that accommodates a fundamentally new vision based on the dynamic composition of networks to avoid adding to the growing patchwork of extensions to existing network architectures.

The approach taken in Ambient Network follows a design paradigm of horizontally structured mobile systems that offer common control functions to a wide range of different applications and air interface technologies. Such, it provides solutions for future media- and context-aware, multi-domain mobile networks.

Ambient Networks is a large-scale collaborative project within the European Union 6th Framework Program that investigates future communication systems beyond today's fixed and 3rd generation mobile networks. It is part of the Wireless World Initiative (<http://www.wirless-world-initiative.org>).