Abstract

This ongoing research work represents a tentative approach to overcome the issue of the lack of interoperability between heterogeneous cellular access networks. It begins by establishing a holistic understanding of cellular communication via the analysis of three different cellular network technologies, and proposing an ontological framework that expresses the domain's concepts, classes, and properties in a formal and unambiguous way. After performing the study of the LTE-Advanced one [1] and the UMTS network [2], it is the turn to analyze the structure of the GSM cellular technology and to produce a feature model of it. The choice of the three technologies is not arbitrary, but intentionally representing a succession of generations belonging to the same family. GSM, UMTS are chosen as two of the most representative 2G and 3G technologies that are currently being deployed on a worldwide basis. LTE-advanced is latest version of them and it is the top of the notch technology. The GSM cellular network represents the reference network relative to which we can compare the other ones. GSM feature tree is, in fact, not easily buildable, which required from us to undertake seemingly heavy processes to identify existing features that may satisfy the representational needs.

Refer
Roadmap for Establishing Interoperability of Heterogeneous Cellular Network Technologies -3-


tences

- Overview of 3GPP Release 99 Summary of all Release 99 Features; ETSI Mobile Competence Centre Version 05/03/04
- OMG Unified Modeling Language (OMG UML), Superstructure Version 2.2 February 2009;

Index Terms

Computer Science

Telecommunications
Keywords
GSM  Interoperability  Ontology  Feature modeling  UML