Core Components for 4th Generation Telecomm Infrastructure

The primary goal of the project was to develop some of the core software components of next generation telecommunication technologies defined by the telecommunication industry alliance known as 3GPP, as a coordinated, indigenous effort in Pakistan. The project was a joint venture between academia and the software industry. The output of the project was a set of software artifacts, which would implement the standardized protocols defined by 3GPP under the title “IP Multimedia Subsystem” (IMS)

This project was to develop commercial grade, open source software components for telecommunication infrastructure. Its main beneficiary therefore, is the telecommunication industry. However, since its output will be artifacts of software design and engineering, there are significant benefits for the software and IT industry, academia, and the open source community at large.

The project achieved all the above objectives set for the project during the planning phase. The core components implemented by the project include:

- Home Subscriber Server
- Online Charging System
- Offline Charging System
- Media Resource Function (MRFC&MRFP)
- OAM&P System

The resulting products are tested for the compliance with the OpenIMS Core Project (www.openimscore.org) and an open source diameter Seagull Test tool (www.seguall.org) developed HP.

These output products can be used by the industry for launching the IMS services by integrating them with the Call Control and Application Server components. The IMS Core Network requires at least following functions to provide some service to the end user.

- Call Control Servers (Proxy-CSCF, Interrogating-CSCF and Serving-CSCF)
- Home Subscriber Server
- Online and Offline Charging System
- Media Resource Function Controller and Processor (MRFP & MRFC)
• OAM&P System for Configuration, Performance and Fault Monitoring

• IMS Terminal/User Element (UE)

Other than Call Control Servers IMS Terminal/User Elements (which were not defined as part of project scope) are implemented and can be used in conjunction with third party servers to be used in service provision network.