Project Proposal

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1 Project title

The development of a Mobicents-based billing system and a new billing framework

1.0.1 Supervisors

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2 Background information

Billing is a fundamental aspect of telecommunication networks. The ability to convert the amount of traffic on the network to revenue for network operators is considered key. With the new introduction of telephony over IP networks, billing for network providers needs to be reviewed in order for network operators to gain a competitive edge in the industry. The billing operation must be performed accurately and reliably. Operators are constantly developing new multimedia services in order to gain a stronger position over competitors. With the introduction of services such as IPTV and location based services, traditional billing strategies are unsatisfactory. These newly developed services require operators to find new innovative ways of billing users. For instance with location based services, billing might have different rates based on the location of the user. There are software development kits such as Ericsson Diameter Charging SDK that help developers to develop systems that have real time billing.

3 Research objectives

Currently the convergence group has a number of services such as IPTV, video on demand, location based service, and voice services. The main objective for

the project is to develop a billing system for these services.

The main goals extracted from the background information are:

- Developing a billing system based on Mobicents that provides a billing service.

  - Mobicents is an open source VoIP platform. Mobicents is certified for JSLEE and hence it is considered as a standard approach in the telecommunication industry. Additionally Mobicents offers a number of services (Service Building Blocks) such as billing, call control, and administration.
  - Charging SDK from Ericsson will also be used. The Charging SDK allows developers to quickly develop applications that have charging. Hence the SDK allows developers to deduct balances on accounts based on the time spent, volume of contents, and special event that has occurred. The charging SDK is an implementation of the Diameter protocol. The diameter Protocol was introduced as an improvement of Radius. Diameter aims too provide Authentication, Authorization, and Accounting for IP networks.

- To investigate new paradigms of billing.

  - Investigate the billing process with regard to the telephony over IP network.
  - Billing strategies will be investigated to consider how the available services can be billed.

- Produce a suitable billing framework.

  - Based on the investigation, a billing framework for the services currently available and possible future services will be produced.

4 The approach

In the initial phases of the project, the plan is to learn and gain as much information about the research topic and the environment. This includes going through readings and researching around the topic. Readings around the research group will be examined to gain a clear picture of the convergence group. Following from that; the idea is to get familiar with the environment; going through tutorials for mobicents, testing and building small systems to acclimatise to the new environment.

The second stage involves planning for the system and producing design documentations for the system. During this stage, an overall structure of the system will be defined. Modeling diagrams and screen layouts will be produced.

The next stage after the design will be the implementation. During this stage actual coding and testing of the system will be done based on design specifications.

Thorough testing will conducted to see if the system meets the requirements. Once the system has been completed extra research will be conducted to suggest billing strategies that can be considered. During this stage research will be conducted to find out innovative ways that different services can be billed. If time permits different business models will be considered when suggesting a billing framework. During this stage we consider the charging model such as: subscription-based, event-based, volume-based, time-based or incentive-based. With incentive-based charging we will consider the users willingness to view advertisements.

5 Strategy

Throughout the project instead of purely focusing on doing the project and getting the system working first then having a write up session; the approach of writing while simultaneously performing investigations will be adapted. During each milestone, additional content will be added to the thesis.

6 Schedule

24 February	Project proposal
	Readings and preparation for the Oral presentation
05 March	Seminar Series 1: Oral presentation
	Acclimate to Mobicents
	Planning and designs
	Coding and testing
20 July	Seminar Series 2: Oral presentation
	Research on billing methodology
	Write up
17 August	Poster submitted
	Finalize thesis
25 October	Seminar Series 3: Final oral presentation
	Proof reading and touch ups
1 Novembert	Project Deadline

7 Requirements

A desktop machine running Linux with Mobicents
Java compiler and IDE Versioning system and Emulator

References

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4