Design of Applications based on MMS

Objective

The objective of this practice is to familiarize students with the tools and techniques used for the creation of MMS-based applications with particular focus on the generation and reception of MMS messages.

Tools

The lab exercise is performed using computers running **Windows**. The following set of tools for the creation of applications based on MMS messages must be installed:

- Two instances of the Nokia MMSC External Application Interface Emulator (EAIF). This emulator allows checking the basic functionality of the applications without a need to connect to a real MMSC (Multimedia Messaging Service Center). The Nokia MMSC EAIF can be downloaded as part of the *Getting Started with MMS Nokia tools* package.

- *Java* MMS Library. A java library to facilitate creation, generation and reception of MMS messages. This library includes examples and documentation. The Java MMS Library can be downloaded as part of the *Getting Started with MMS Nokia tools* package.

Development-environment for Creation of MMS Applications

An initial (easy) way to start work with the creation environment is to execute the two independent EAIF emulator instances. It is possible to use one of these to send MMS messages to the other instance, and analyze the logs and the detailed information about the messages. You can execute the instance from directory with *bin/startup.bat*.

The next step will be to change one of the instances using other Java application, which generate and/or receive the multimedia message.

It is possible to use the EAIF emulator in order to test the *filtering applications*. In this case the EAIF emulator sends a multimedia message or the headers of the message, and then wait to receive the complete message, the headers, or a state message. With this behaviour it is possible to check an external application with respect to the message processing.

Detailed information regarding the installation and the usage of the MMSC EAIF can be found at "MMSC EAIF Emulator User's Guide.pdf" included in *Getting Started with MMS Nokia tools* *package*. In addition examples of a Originating, Filtering and Terminating MMS application are also included in *Getting Started with MMS Nokia tools* package.

Assignment - Practice Guide

(Option 1) The purpose is to create an application. It is to be created with rules for creation and processing of multimedia messages. An example could be an application which allows a user to create a multimedia message using a web interface, and then to send it to a recipient.

(Option 2) Another option is a contest based on the generation and reception of multimedia messages. The application will receive the messages, then it will process the messages following the logic of the contest and finally it will answer the messages. The state of several users could be consider, and to combine its answer in order to condition the messages sent to another users.

Expected Result of the Exercise

The result of the work should be a piece of software which emulates the behaviour of a real application. Although there are not an MMS Center and a cellular network available, the software should emulate the message generation, the message management on the server (application's logic), and the messages reception, in the same way as in the real application.

A report of the practice describing the application, its design and its interest must be provided by the students. Conclusions obtained while using the implied technologies can be included in the report. The application code and any necessary instructions to check the correctness of the solution - should be provided by email to the instructor.

Evaluation Criteria

1. Application quality and originality.
2. Value of the technical solutions used in the development process.
3. Robustness (e.g. how difficult the user can get an error status or other types of problems).
4. Any other extension which can provide added value in terms of functionality.
5. Quality of the report.

References

- Nokia MMS Java Library, version 1.1, March 2002. Included in *Getting Started with MMS Nokia tools*.
- Nokia MMSC EAIF Emulator – User's Guide, version 1.0, March 2002. Included in *Getting Started with MMS Nokia tools*.
- How to Create MMS Services, version 4, Nokia, June. 2003.
- Nokia MMS Center Application Development Guide, version 1.0, March 2002.
- Getting Started with Nokia MMS Tools v1.0, March 2002.