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Implementation of Short Message Service (SMS) in 3G mobile system

3GEP Project HT09

Project supervisor:

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Outline



- Short description of the project:
 - Project objectives
 - Project setup and tools
 - Project requirements
- Time Schedule
- Organization
 - Location
 - Computer accounts and Backup
 - Supervised hours

Project Objectives

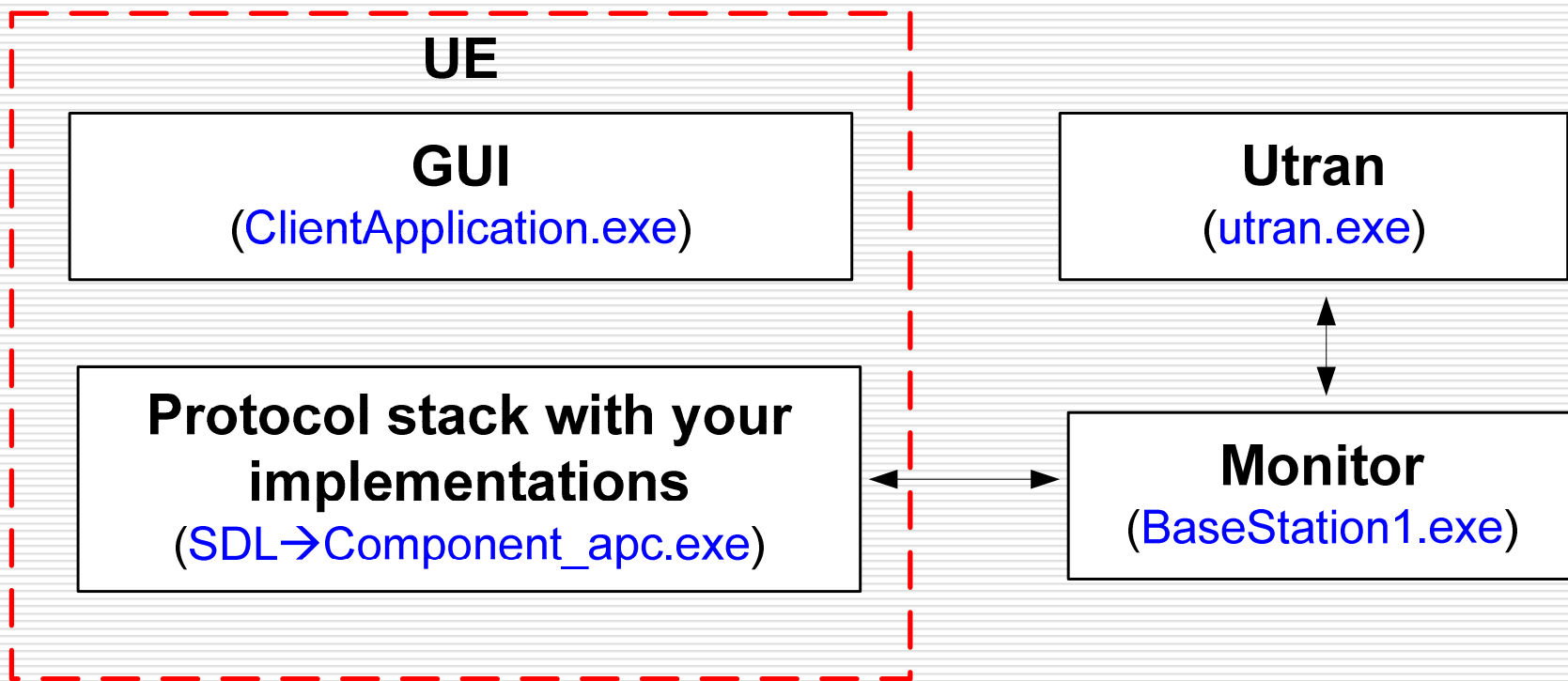


- Providing the students with a general understanding of how the 3G mobile system works.
- Provide the students with a detailed knowledge on how some services are implemented in a *simplified* 3G protocol stack.
- Students will learn a graphical programming language called **SDL**.
- To practice the project time planning and documentation procedures.
- Improve team-work skills.

Main parts of the Project

- Individual Studies
 - Reading and learning about 3G system (structure, protocols, functionalities, etc.)
- Development and Testing
 - Implementation of the SMS service in an already existing and simplified 3G stack.
- Documentation
 - Planning the development and testing procedures in the beginning of the project.
 - Documentation of the development and testing work during the project.
 - Preparing the final report.


Programs involved



UE

3G Mobile Emulation

File Help



Created SMS Messages

SaveName

Add selected SMS to Event List

Choose a Specific Time:

hh mm ss
18 17 00

Choose a Time Interval:

hh mm ss Nbr of Sendings:
18 16 00 10

Continuous

Event List

NbrOfSendings	NextSendTime	ObjectName
Continuous	12 : 31 : 13	SaveName
10	12 : 31 : 37	SaveName

New Delete Add Delete

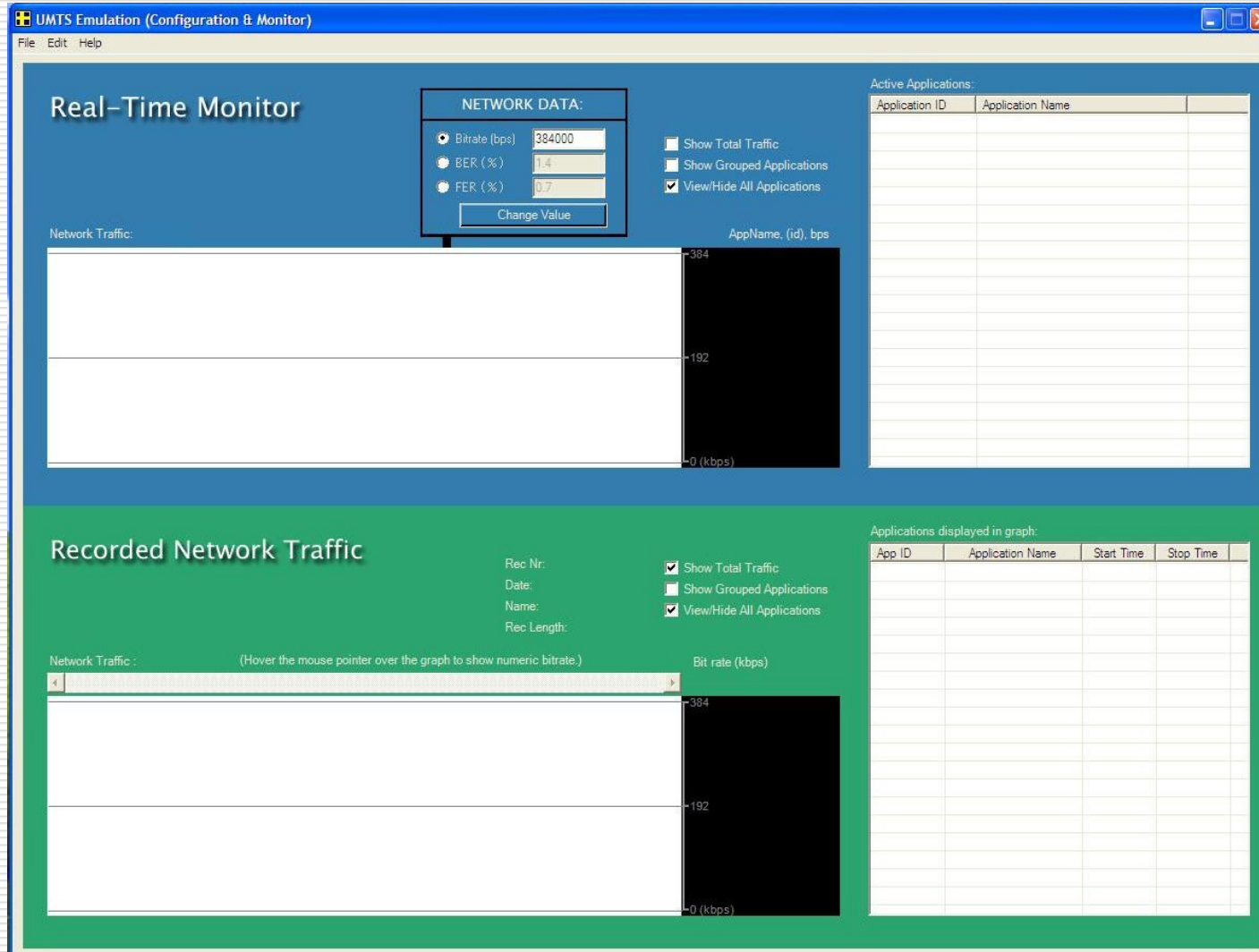
Speech

TFTP

SMS

```
0 : Message sent : PowerOn : 2009-10-25 18:13:52
1 : Message rcv : PowerOn Ok : 2009-10-25 18:13:52
2 : Message rcv : Paging : 2009-10-25 18:13:56
3 : Message sent : RRC Connection Request : 2009-10-25 18:13:56
4 : Message rcv : RRC Connection Established : 2009-10-25 18:14:02
5 : Message sent : SMS-SUBMIT : SaveName, 00110008916407183254F600F0AA056866C6C6F : 2009-10-25 18:17:02
```

Monitor



UMTS Emulation (Configuration & Monitor)

File Edit Help

Real-Time Monitor

NETWORK DATA:

- Bitrate (bps): 384000
- BER (%): 1.4
- FER (%): 0.7

Change Value

Active Applications:

Application ID	Application Name
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Network Traffic:

AppName, (id), bps

Recorded Network Traffic

Rec Nr: _____

Date: _____

Name: _____

Rec Length: _____

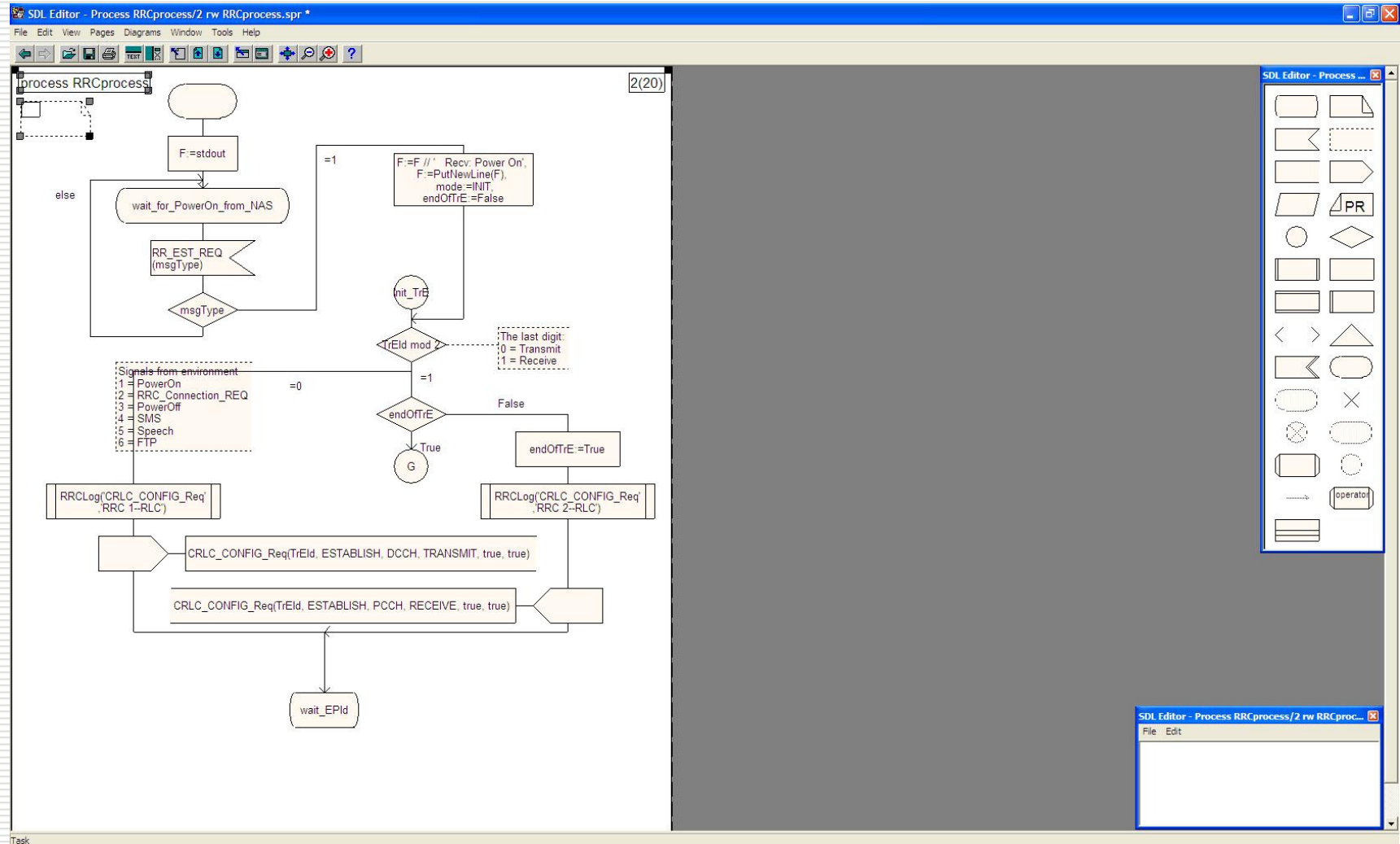
Network Traffic: (Hover the mouse pointer over the graph to show numeric bitrate.)

Bit rate (kbps)

Applications displayed in graph:

App ID	Application Name	Start Time	Stop Time
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SDL Editor



Project requirements



- You are done with SMS when:
 - Your code is compiled without errors
 - You are able to send any message from client_app and receive it on utran. The message will appear on utran command window.
 - Program is stable.

Organization



- ❑ Form groups of 2 or 3 students and sign up the members to work on the project. Write your names and emails on the provided lists.
- ❑ You will get group accounts on the lab computers.
- ❑ The documentation regarding the project can be found on the course homepage.
- ❑ The project code template can be downloaded from the course homepage.

Organization cont.

- Start by reading and following the steps in "Getting started with the 3GEP project".

- You can work on any PC in Uranus and Neptunus.

- Support:
 - Project supervisor will be available 2*2 hours per week on weeks 2 to 6 of the project.
 - The exact schedule will be posted on the course homepage.
 - Support on the other times is through email. Send your questions to 3gep@eit.lth.se

Organization cont.



- Language:
 - All the communications in this project shall be done in English.

- Evaluation:
 - Each group has to book a time on the course homepage for evaluation meeting early week 4.
 - A test case document shall be submitted before the first meeting latest Friday Nov 13th 2009.

- Final Meeting:
 - Each group has to book a time on the course homepage for the final meeting on week 7 of the project which will be held in Uranus.

 - Final report and code shall be submitted latest Friday Dec 4th 2009.

Organization cont.



- The final report shall contain:
 - The group number, names and emails of all group members.
 - What have you learned from the project.
 - Time that every group member has spent on different tasks of the project.
 - Detailed description of test cases and test results.
 - Problem that you faced during the project and how you solved them if so.
 - Comments about what was good or bad regarding the project, documentation, organization, group work, etc.
 - Attach the code listing to the report. Only those pages that you changed compared to the code template shall be attached.

Organization cont.

- During the final meeting you **have to**:
 - Demonstrate the working program.
 - Perform the required tests and report the results.
 - Each person will have to answer some questions.
 - All group members have to know everything about the project.
 - Grading: Pass or Fail per person.

Organization cont.



- ❑ Sign up for each lab occasion individually.
- ❑ All document submissions are per-group basis.
- ❑ Documents should be sent to 3gеп@eit.lth.se before the mentioned deadlines.
- ❑ Always take backups of what you have done.

3GEP first week

- To-dos for the 3GEP project first week:
 - Read the provided material and answer the study questions (SQ).
 - Write the Project Plan (PP).
 - Project plan shall contain name and email addresses of all group members, Introduction to the project, Aim of the project, Requirements for the project, Activities and their time requirements per each week(in a table), Delivery dates.
 - It should be maximum 2 A4 sized pages.
 - Deadline for submission of the SQ and PP submission is November 2nd and November 4th 2009 respectively.
 - Submit to :3GEP@eit.lth.se
 - One submission per group in Plain Text or PDF.

Can Machine Lab



- To-dos for the Can Machine lab:
 - Form groups of 2 persons
 - Sign up on the lab lists
 - Read the can machine lab manual and its references.
 - Take the printed material after this lecture.
 - The lab will be held on 3rd and 5th of November at 17:00-21:00 in Uranus.

Questions:



Questions?