

NordSecMob-Master's programme in Security and Mobile Computing

Student admission and selection

Eija Kujanpää
Aalto University School of Science and Technology

EMAP training seminar Prague 4.2.2010-7.2.2010

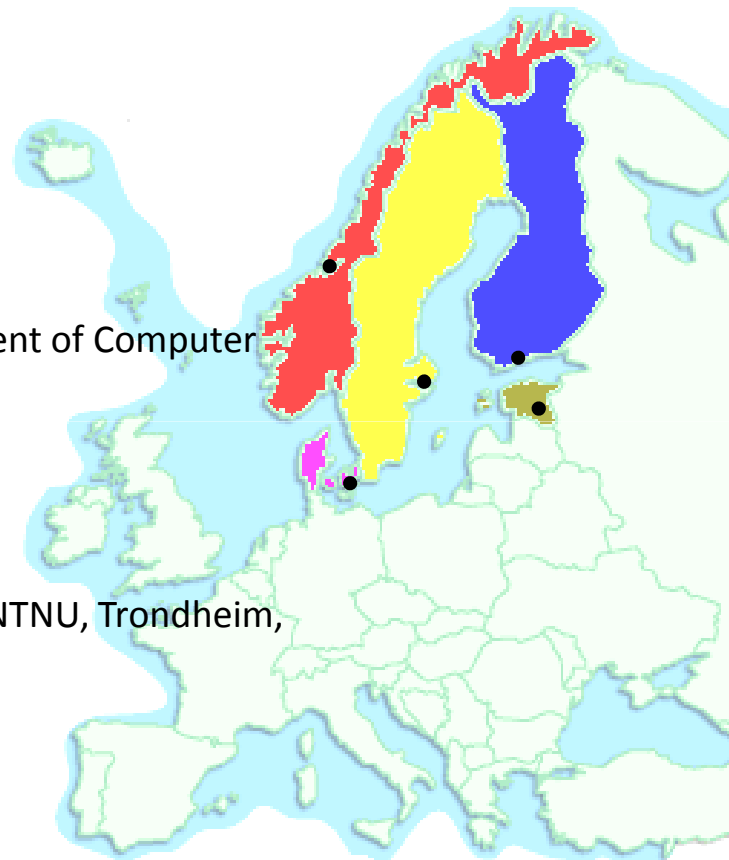


NordSecMob Master's Programme in Security and Mobile Computing

8.2.2010

NordSecMob-consortium

- Aalto University School of Science and Technology,
Faculty of Information and Natural Sciences, Department of Computer
Science and Engineering, Espoo, Finland
- Technical University of Denmark DTU,
Lyngby, Denmark
- The Royal Institute of Technology KTH,
Stockholm, Sweden
- The Norwegian University of Science and Technology NTNU, Trondheim,
Norway
- University of Tartu UT,
Tartu, Estonia



Background of NordSecMob- programme

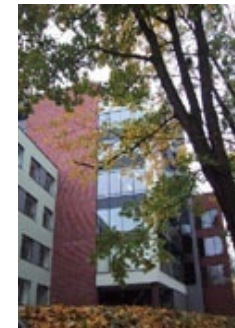
- based on long term research contacts: NordSec- workshops started in 1996
- the aim of NordSec-workshops is to bring together researchers and practitioners within computer security in the Nordic countries
- first discussions of joint study programme in NordSec-workshop 2004 with the members of NordSec -programme Committee
- Erasmus Mundus application 2005
- Erasmus Mundus NordSecMob-programme running 2006-
- NordSecMob-students and alumni are active participants of NordSec-conference since 2008

NordSecMob Master's Programme in Security and Mobile Computing

8.2.2010

Why Data Security and Mobile Computing in Nordic Countries?

- Scandinavia and Nordic countries have been very innovative in mobile communication.
 - The first regional cellular network started here giving the telecom industry a very good starting point to the second and third generation networks and devices
 - We were pioneers in large scale internet-usage in Europe.
 - The biggest on-line banking system in the world has covered the area of Scandinavia for over fifteen years.
 - A broadband Internet-connection to every home is assumed as a public service.
- Research and development in security and mobile computing have created a world class industrial and scientific cluster



NordSecMob Master's Programme in Security and Mobile Computing

8.2.2010

Why a Joint Study Programme Between Nordic Universities?

- The participating universities are renowned research and educational institutions in Europe and top-ranking universities of technology in Nordic countries.
 - Each University has their own area of expertise
 - Each offers their best to the student
 - A good start for an international career
- The Nordic countries have individual identities but share a common heritage
 - One area, several countries



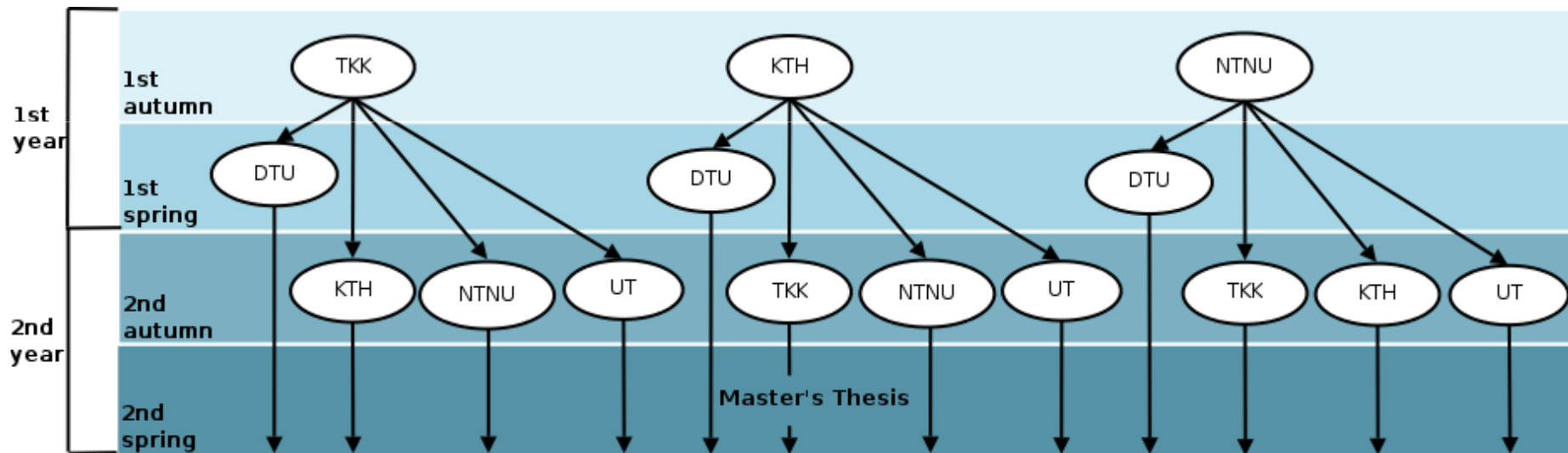
NordSecMob-curriculum

- A joint two year curriculum is defined which involves always two universities
- The 120 ECTS credit points will be divided into two blocks:
 - 1-2 semesters of teaching (30-60 ECTS) will be provided by a **home** university
 - 1-2 semesters of teaching (30-60 ECTS) will be provided by a **host** university.
- The programme includes three semesters of courses + a fourth research semester (Master's thesis, 30 ECTS)
- Double degree: All students will graduate with M.Sc degree or equivalent from both their home university and a M.Sc degree or equivalent from their host university.

NordSecMob Master's Programme in Security and Mobile Computing

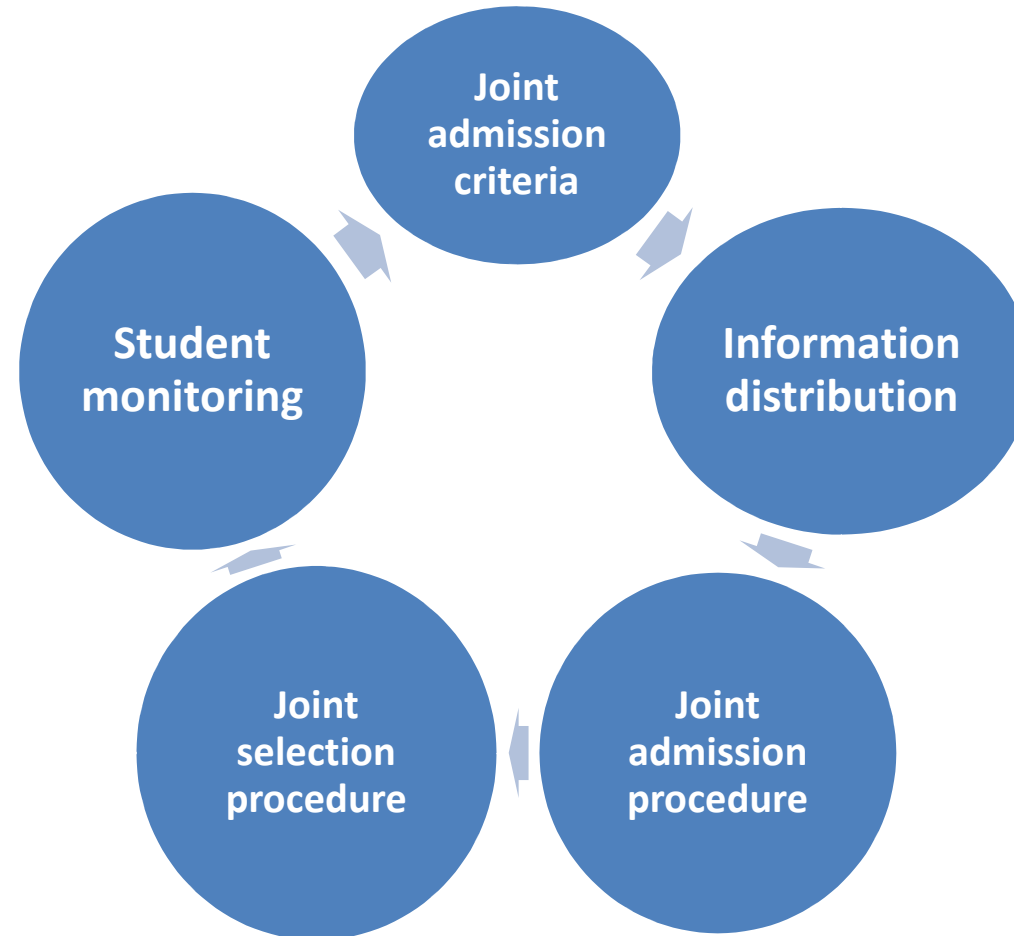
8.2.2010

NordSecMob-student mobility plan

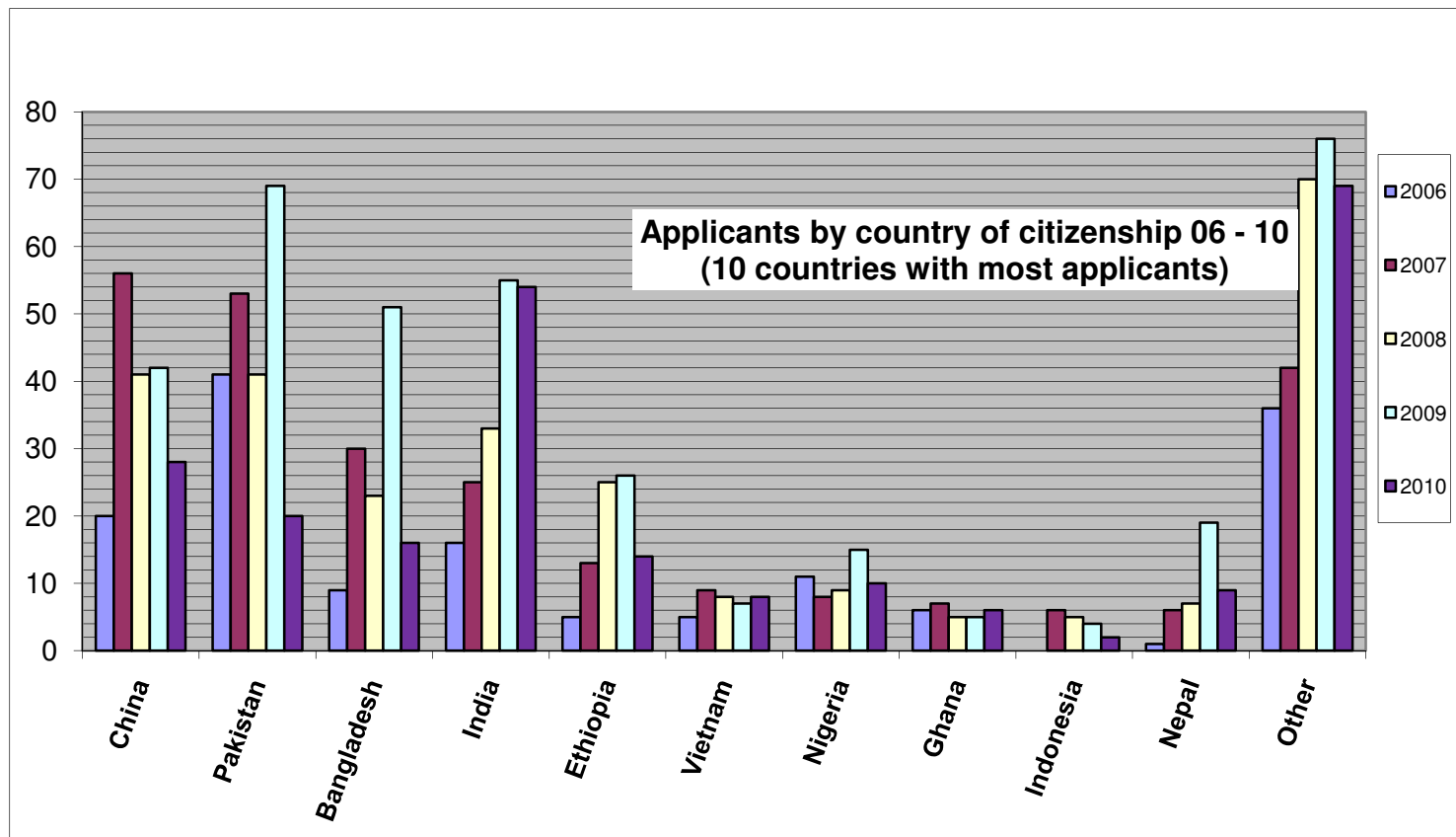


NordSecMob Master's Programme in Security and Mobile Computing

8.2.2010



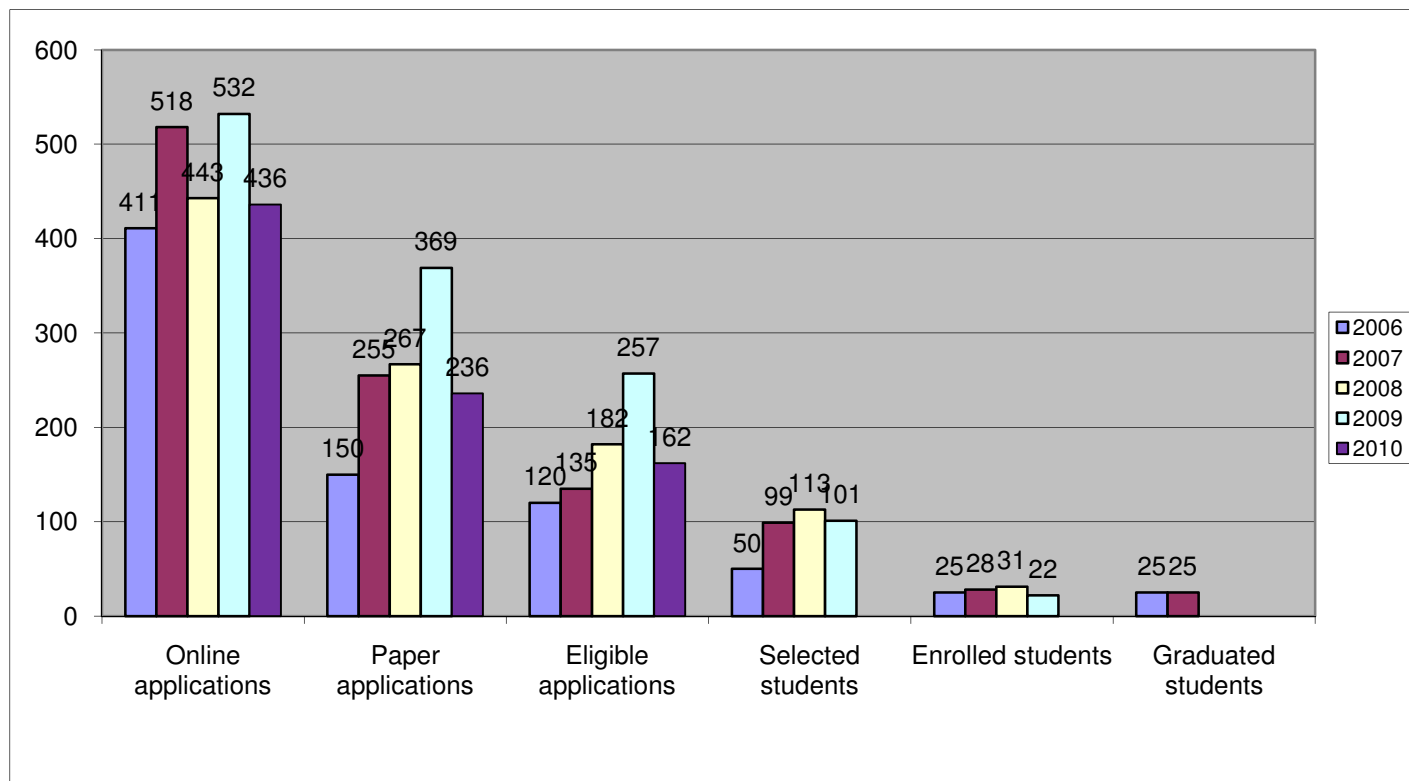
Statistics 2006-2010



NordSecMob Master's Programme in Security and Mobile Computing

8.2.2010

Statistics 2006-2010



Joint admission criteria

- joint admission criteria for the whole programme
 - several study tracks
- **Academic background of the student - required degree**
- NordSecMob: “Admission criteria to the programme is a high quality Bachelor's degree encompassing a minimum of 180 ECTS credits in Engineering (Computer Science or Information technology) or equivalent studies i.e. a degree consisting of at least three years of full-time studies. “
- “The applicants should have **solid knowledge of** mathematics (discrete mathematics), programming skills, data structures and algorithms, computer architecture and basics of computer networks. In addition, **basic knowledge of the following subject areas will be an advantage:** databases and database management, principles of theoretical computer science, logic in computer science, software engineering, operating systems, concurrent programming.”
- →the content of previous studies to be analysed carefully

NordSecMob Master's Programme in Security and Mobile Computing

8.2.2010

- **language requirements**
 - joint language requirements : joint minimum criteria
 - TOEFL, IELTS, other recognized certificates (from the testing center!)
 - NordSecMob:
 - **TOEFL**
 - » TOEFL minimum scores are:
 - » 580 / writing 4,0 (paper-based test)
 - » 237 / writing 4,0 (computer-based test)
 - » 92 / writing 22 (internet-based test)
 - **IELTS**
 - » IELTS minimum score is 6,5 / writing 5,5
 - **Cambridge Certificate in Advanced English (CAE) or Cambridge Certificate of Proficiency in English (CPE)**
 - » grade B or A
- **methods:**
 - paper-based selection
 - international (subject) tests (GRE)
 - interviews
 - portfolios



NordSecMob Master's Programme in Security and Mobile Computing

8.2.2010

Joint admission and selection procedure

- joint programme website for the distribution of information for applicants
 - centralized reception of email enquiries
 - centralized reception of joint on-line applications + paper applications
 - joint online form + application management system (database)
 - centralized eligibility check of applications
 - Only eligibles to academic evaluation
 - to automate the distribution of information via online-database system (from applying phase until selection) for applicants
 - to respect national and university specific rules!
-
- The consortium needs human and technical resources to implement a smooth and consistent admission and selection procedure!
 - admission officers must be professionals
 - hundreds of applications: time is limited!
 - good and quick service is a must!



NordSecMob Master's Programme in Security and Mobile Computing

8.2.2010

Joint evaluation criteria and selection procedure

- Evaluation criteria to be agreed with all consortium partners
 - recognition and quality of the home university
 - language skills
 - content of previous degrees
 - study success
 - motivation
 - recommendations
 - relevant work experience or other activity (patents, publications)

- different weights for each criteria



Joint academic evaluation of applications with database

- eligible application are scanned to the database
- all partners have access to database and participate to evaluation
- three steps:
 1. pre-screening
 - academic pre-screening (the content of previous degrees) → YES/MAYBE/NO cases
 2. full evaluation (the whole application): academic evaluation by at least two academic evaluators from different partner universities (usually 3-5)
 3. selection meeting:
 - all partners participate
 - refining and adjustments of the evaluation marks for each selection criteria
 - » ranking order of students is automatically established by the database according to numeric evaluation of the applicants
- workload can be shared!

NordSecMob Master's Programme in Security and Mobile Computing

8.2.2010

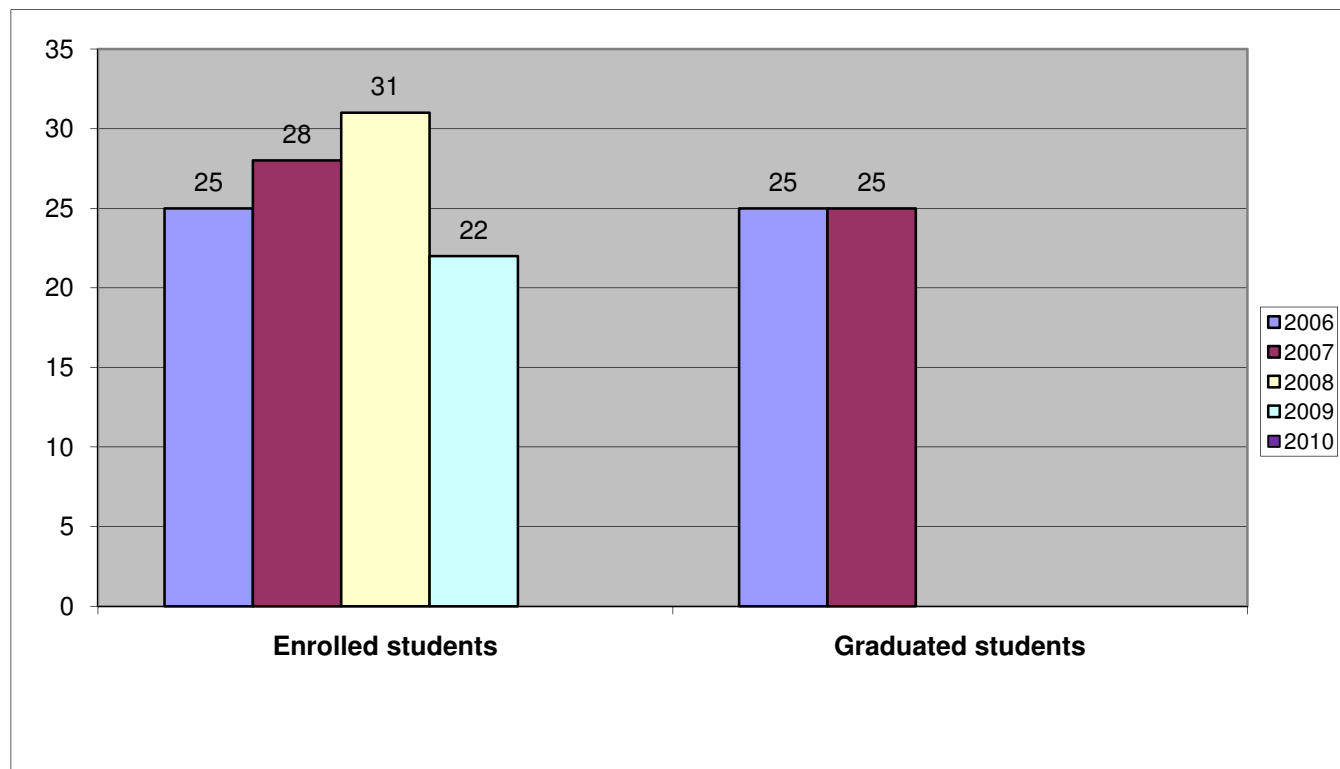
- **NordSecMob: one phase selection: student is selected to the whole study track: Univ A + Univ B**
- **two-phase selection: student is selected to the first university, the selection to second/third university is done later on**
- admission and evaluation criteria to be updated annually if necessary
- sharing best practices and knowledge about different degrees and universities
 - NordSecMob: Database of university rankings and evaluations
- excellent academic performance: good luck or result of an effective selection process?
 - monitoring of the students: feedback to selection procedure
 - alumni may contribute to selection procedure: country specific knowledge regarding universities and degrees



NordSecMob Master's Programme in Security and Mobile Computing

8.2.2010

NordSecMob enrolled and graduated students



NordSecMob Master's Programme in Security and Mobile Computing

8.2.2010

Coordinator Eija Kujanpää
Aalto University
School of Science and Technology
Faculty of Information and Natural Sciences
Konemiehentie 2 ,
FI-00076 AALTO (city: Espoo)
Finland

eija.kujanpaa@tkk.fi

<http://nordsecmob.tkk.fi/>

