I:SIM
Sikkerhet & Mobilitet

UNIK
UNIVERSITY GRADUATE CENTER

Master Thesis @ UniK
-
Sikkerhet & Mobilitet

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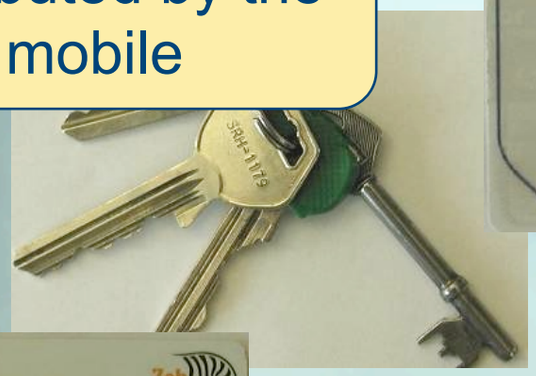
Intro to Master Theses
Kjeller, Juli 2012
http://wiki.unik.no

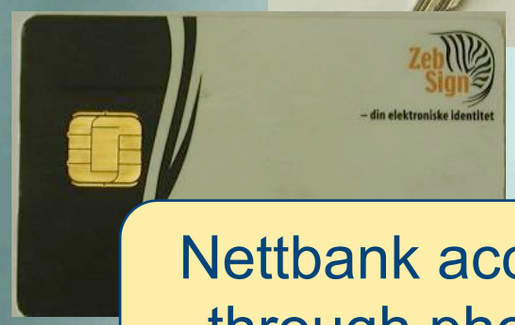
Examples of Master Theses (completed)

I:SIM

Mobile key (mkey) distributed by the mobile



Roles



Nettbank access through phone authentication

Virtual.

Interworking Mobile, Devices, Sensors

Seamless access to home content

SIM with NFC & PKI

The real world developments

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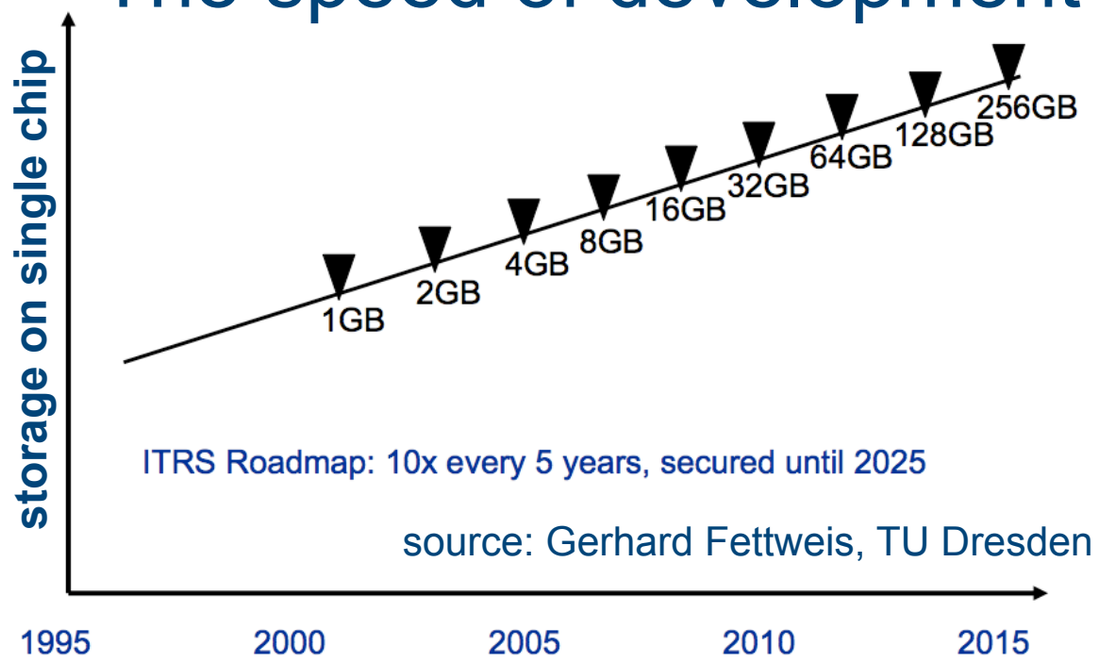
"Last year (2007) the world produced more transistors than rice corns"
– *Hans Christian Haugli, CEO, Telenor R&I*

"By 2012, iPods ... be capable of holding all music you will ever hear in your life (or one year of video)
By 2018 it can hold all videos ever produced"
– *Nikesh Arora, EMEA manager, Google*

"The privacy you are so fond of is mostly an illusion"
– *Scott Mc Nealy, Sun Microsystems*

"And the personal mobile is the representative in the digital world"

- The speed of development



- ever increasing digital capacity (memory and computing)
- "everyware" computing and communication

Q: "What happens if you loose your mobile phone?"
A: "It's a real crisis in life."
– *Youngster, interviewed in Norway*

Main challenge
The Internet of the Real World

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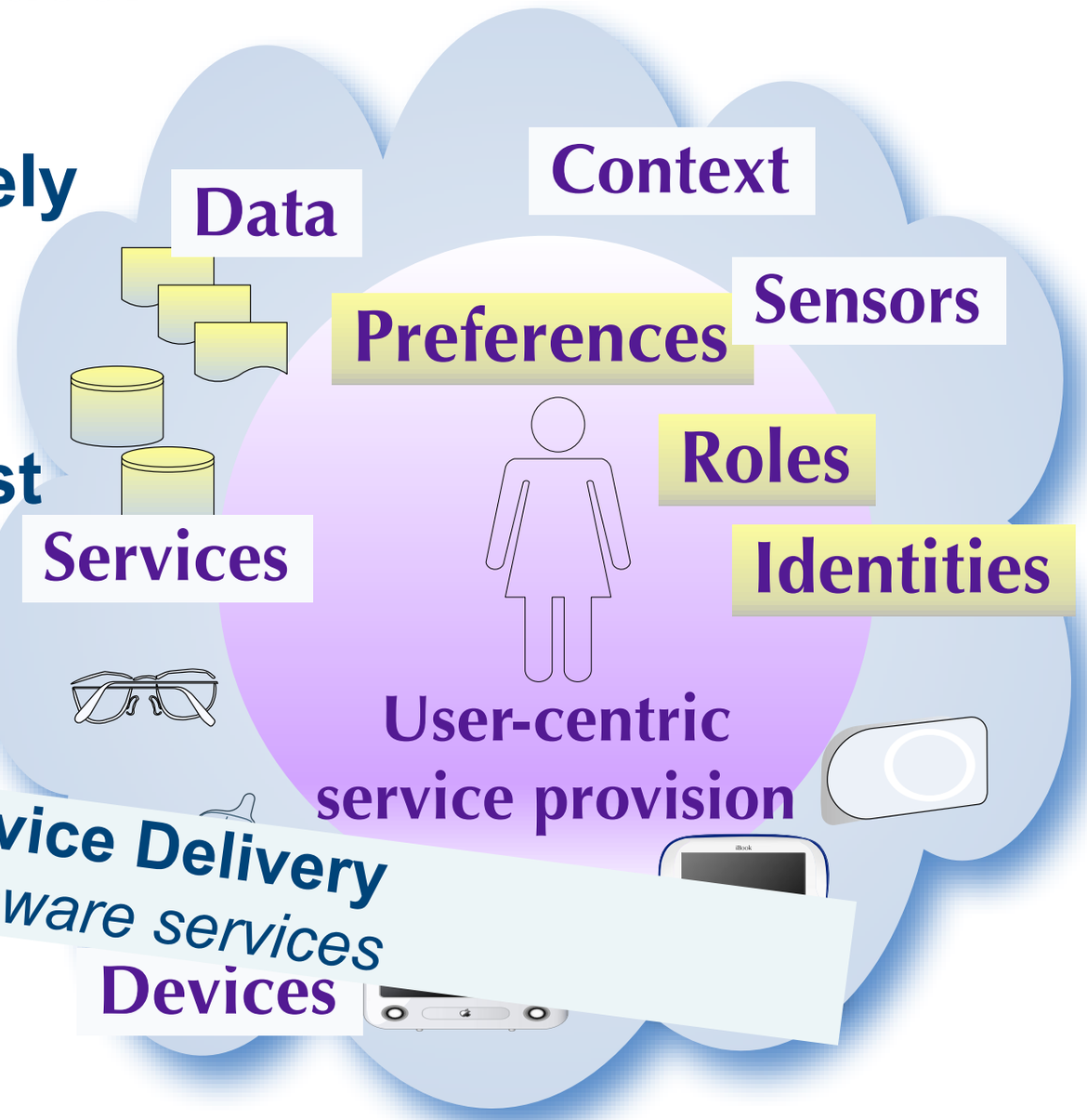
- An ever increasing complexity in the digital environment
  -> **Hiding the complexity from the user**
- User-centric service provisioning
  -> **Representing the user adequately**
- Connecting to sensors, devices and services
  -> **Provide privacy and ensure trust relations**



Course: UNIK4710: Mobile Semantic Service Delivery
– *how to provide personalised and context aware services*

http://wiki.unik.no - sorted by areas
http://cwi.unik.no - even more theses

Proposed Master Projects

A supervisor is specified for each project. Contact the supervisor if you are interested in doing a project.

If you are not a student of a Norwegian University, please find information on remote thesis supervision here

Presentations Info Meet
Security and Mobility (J
.pdf)Δ
Pål's topics
FFI topics (Torleiv)

- Network of Things for Medical Care
- Performance evaluation of customized opensource SSL/TLS solutions in resource constrained environment
- Sensor Integration into Heterogenous Service Platform
- Smart metering home applications
- Trust and transitive trust measures

Novel network infrastructure for emerging economies	Kjetil Frigstad	Guy Kamanda Josef.Noll
Routing in wireless sensor networks	Jan Egil Vestbø	Josef.Noll Knut.Øvsthus

Security of Services Oriented Architecture

Communication in the North

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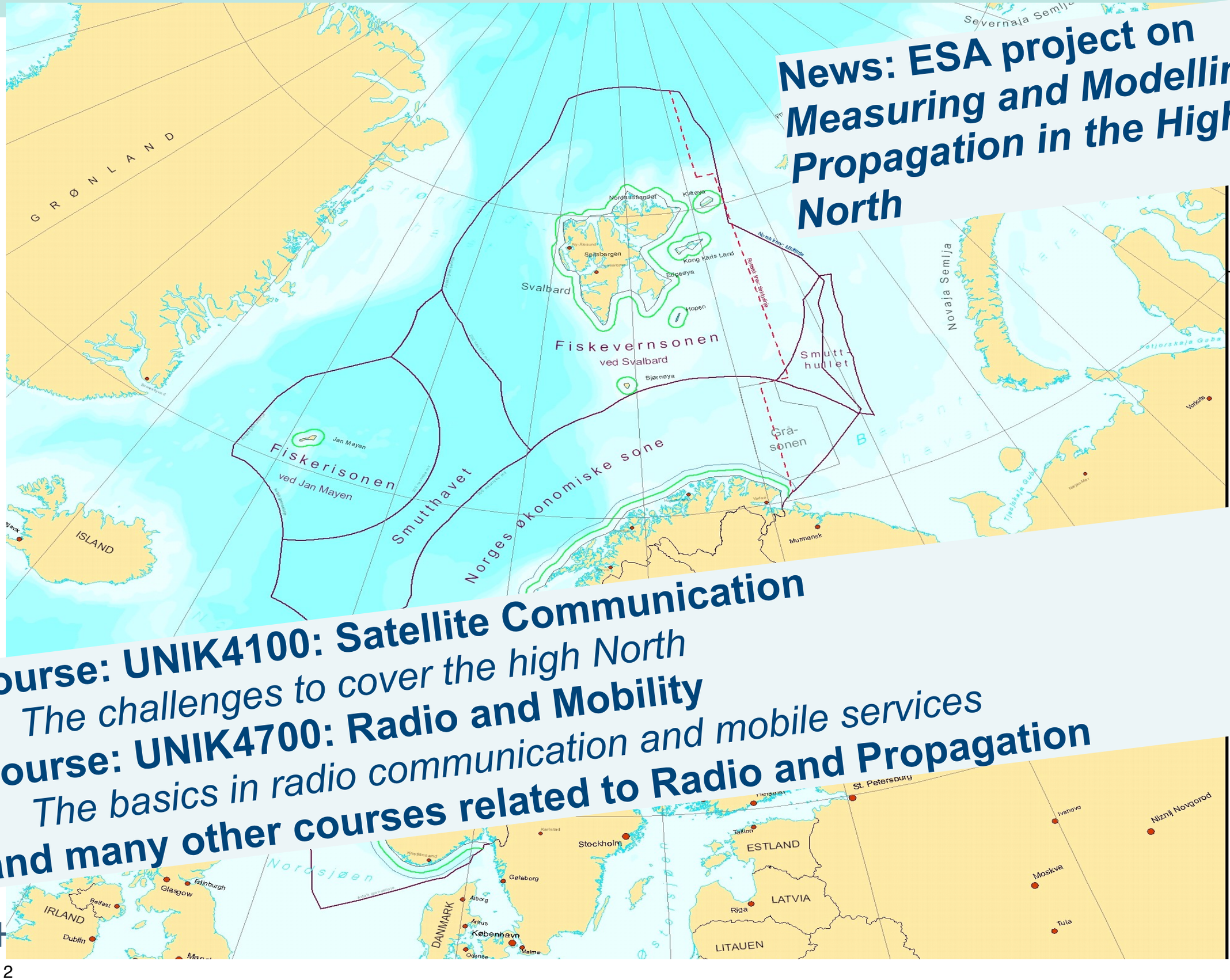

News: ESA project on *Measuring and Modelling Propagation in the High North*

Course: UNIK4100: Satellite Communication
– *The challenges to cover the high North*
Course: UNIK4700: Radio and Mobility
– *The basics in radio communication and mobile services*
and many other courses related to Radio and Propagation

Security and Near-Field Communications

Security and Near-Field Communications (NFC)

- Establish a virtual mobile in a network
- Near Field Communication enabled Personal Area Network Communication
- Communication with the car
- Security in Mobile Phone Banking

- Payment on coffee machine
- Flight tickets through SMS, boardin through the mobile phone
- Tromsbus payment

- RFID card in 2005
- Tests in OSL and Arlanda
- RFID cards
- Think

- New applications: online traffic info, SL, NSB
- Key exchange on mobile phones

Course: UNIK4700: Radio and Mobility
– *The basics in radio communication and mobile services*

Want to see all areas?

Masterthesis, courses
http://wiki.unik.no

- Information Security, Identity Management
- Web 3.0 and Semantic Web Services
- Mobile Authentication and Service Access
- Sensor networks
- Interaction between sensors and mobile phone

Courses, master thesis:
http://www.unik.no

H12, selected courses

- Radio and Mobility
- Security in OS and programs
- Introduction to cryptography
- Multicasting, routing and QoS
- Digital Communications
- Broadband radio access
- Satellite communication

.... further courses in signal processing

H12 courses:
http://www.uio.no/studier/emner/matnat/ifi/h12.xml