



NFC – Near Field Communication Mobile Phone as enabler for wireless health services

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Agenda

- 1. NFC handsets today**
- 2. Contact less eID for various subjects**
- 3. Use cases**



NFC Mobile architecture

NFC chipset = CLF

- RF layer, CLT mode (mifare)
- Multi-protocol (type A, B, felica, 15693. Emulation / Reader)
- Inside contactless, ST, NXP

Standardized (ETSI 102.622)

HCI - Host Controller Interface

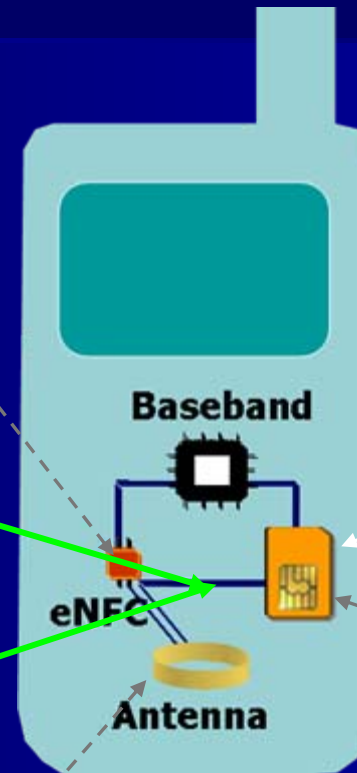
- Communication interface between e-NFC chipset & SIM

Standardized (ETSI 102.613)

SWP - Single Wire Protocol

- 1.5 Mbit/s
- Battery off mode
- Open solution (free IP)

RF antenna



SIM

- Application (java)
- User credentials
- Open Platform enabled



Graphical User Interface

- ... and more on
- www.race-networkrfid.eu
RACE network RFID
- <http://www.nfc-forum.org>
NFC forum
- www.bio-health.eu
proactive repository of standards
for
RFID,
IDM,,
biometrics



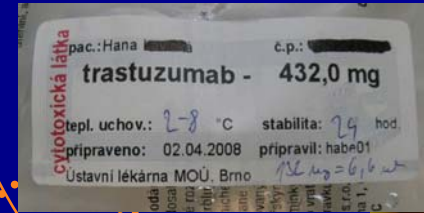
NFC device roles



Health professional
ID, Access, electronic
signatures



Patient's ID
and TAGs
reading..



Working Mobile Off or
Battery Off

Card emulation mode

Reader Mode

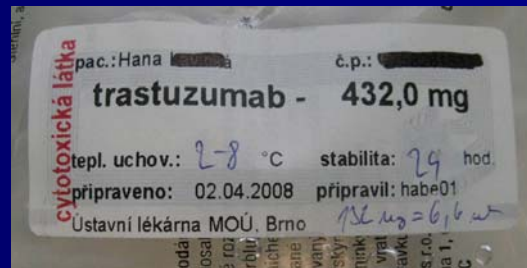
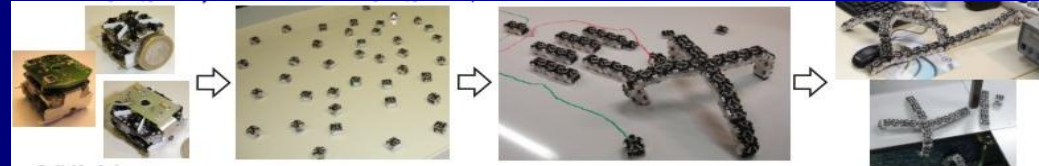
P2P data
exchange and
authentication



Peer to Peer mode



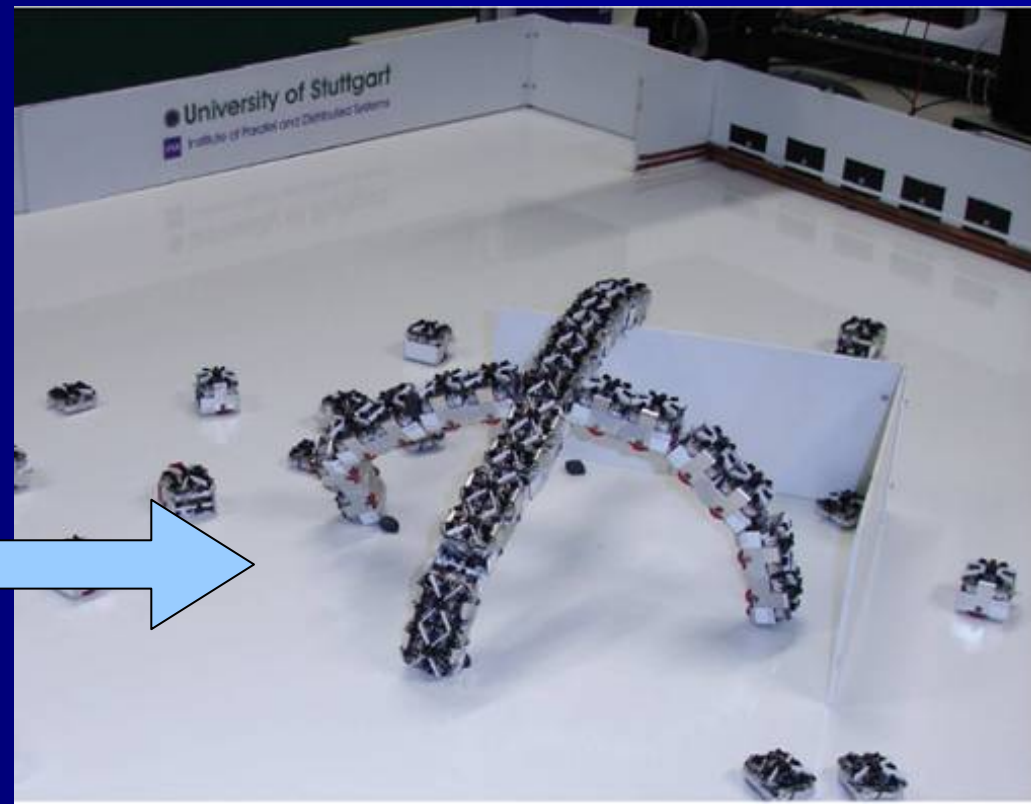
Things are different ...





Swarm of things

- Replicator *„Robotic Evolutionary Self-Programming and Self-Assembling Organisms“*
- Identification and localization of robots -> localization of staff and inventory





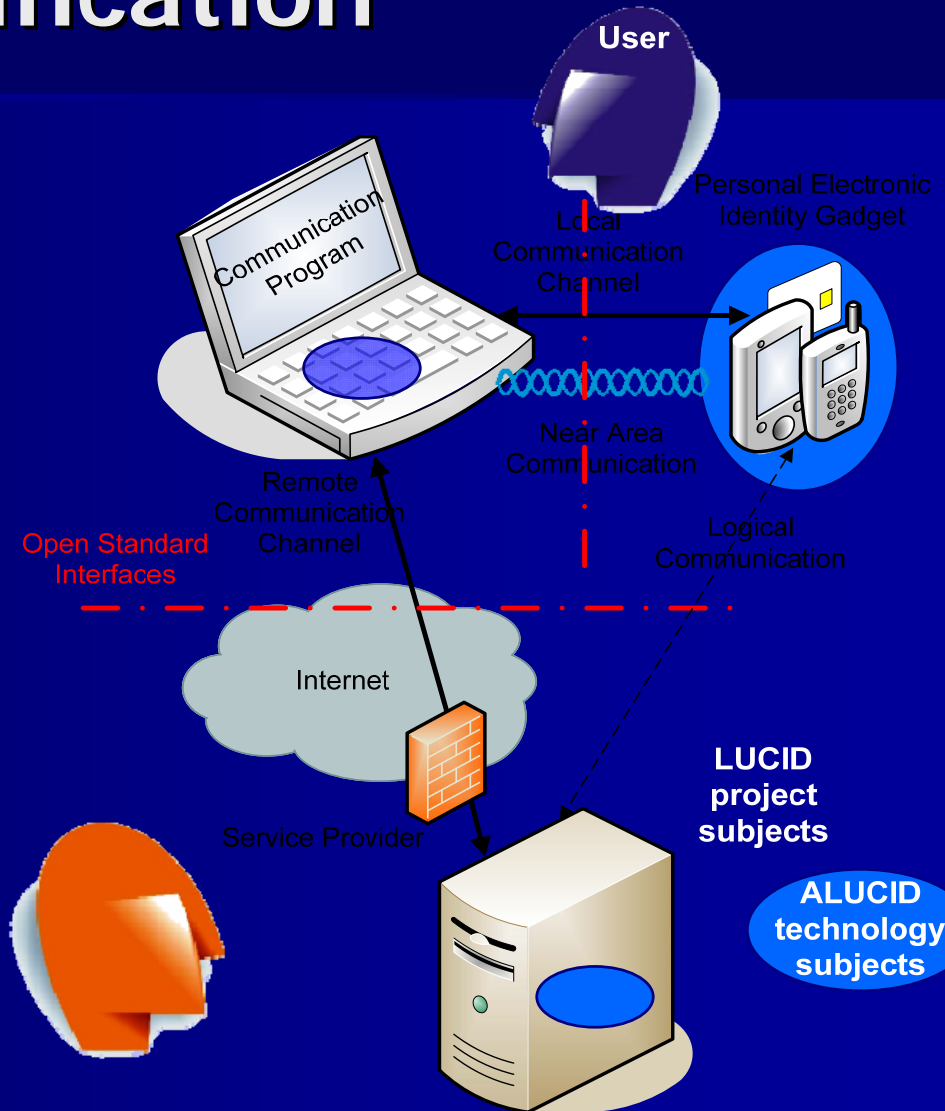
Anonymous Liberal User Centric Identification

PEIG

Personal Electronic Identity Gadget

NO THIRD PARTY INVOLVEMENT

pretty new





Use cases



Masarykův onkologický ústav v Brně

RFID in izolator

- Personal identification-
RFID card
- Identification of patient
(infusion bag)
- Identification of RFID
marked vials
(amount of CD)
- Automatic control of
prescribed compared
to used CD
- Finalization of preparation





RFID for safety



- **Critical moments** despite all control mechanisms errors can occur:
 - medication replacement
 - wrong dose calculation
 - medication (dose) duplication
 - patient confusion
 - error in the way of application

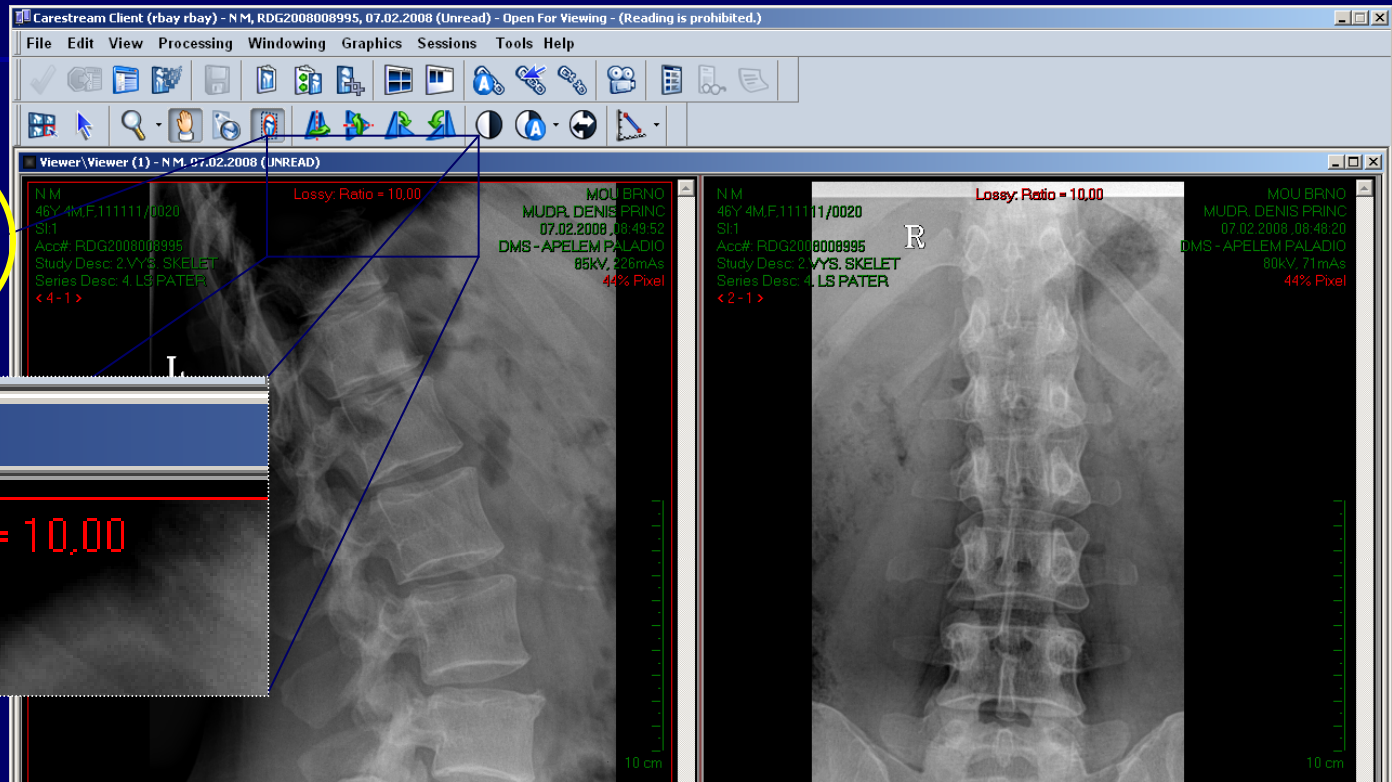


R-Bay /Streaming technology

? Who is reporting

UNREAD)

Lossy: Ratio = 10,00



1. All features available in each of the profiles continue to exist when using the streaming technology to access the study data over slow lines.
2. The Carestream Client streaming technology delivers the first image layer in less than 2 seconds for any image up to 10MB over 2 Mbit/sec line.



Eurostars INsider

SITE-WIDE IDENTITY TRACKING

- Collects object information from OTS Stations
- Receives identity information from external system
- **Identity tracking** through multiple scenes
- Examples of provided features:
 - Visualizing the path one has walked through
 - Where a person is or was at a certain time
 - Detecting anomalies and suspicious situations





Eniac MAS PO -> "nano"

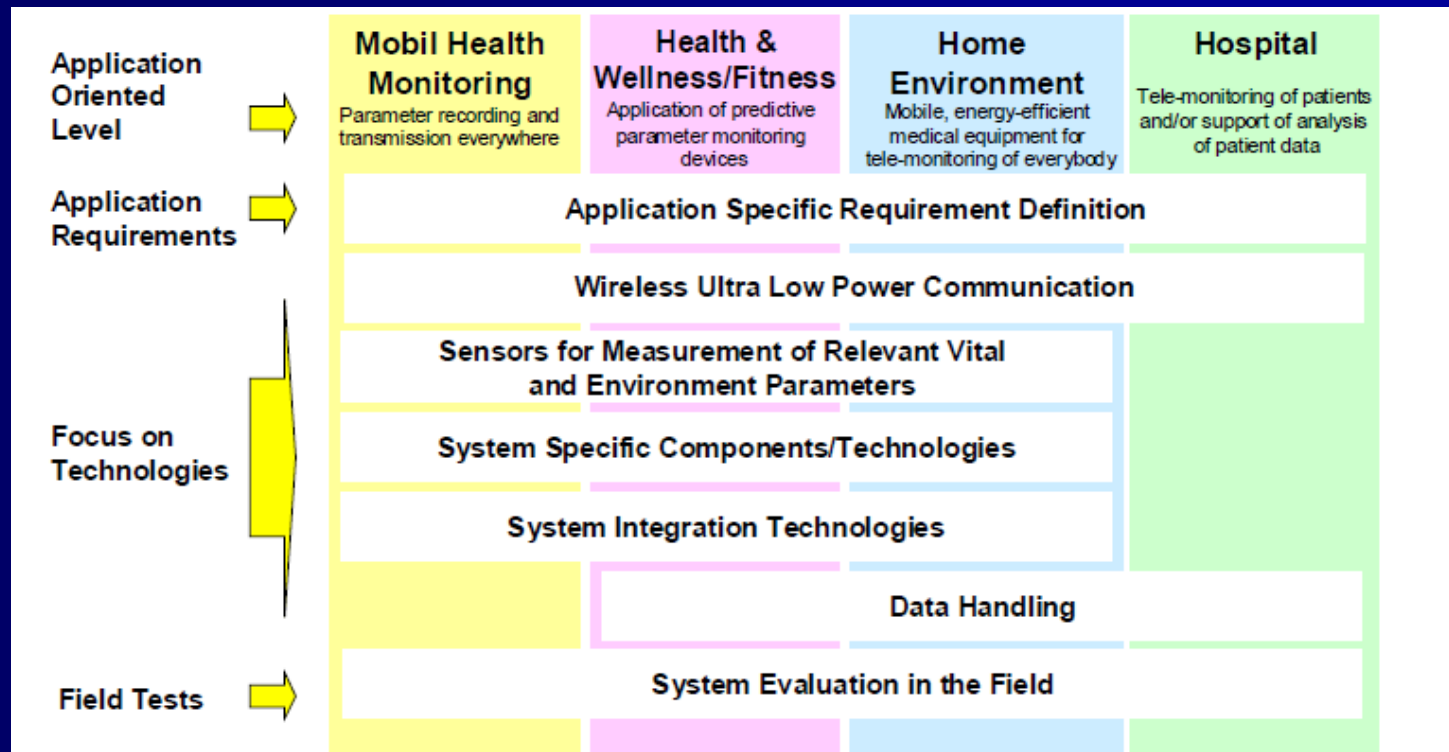


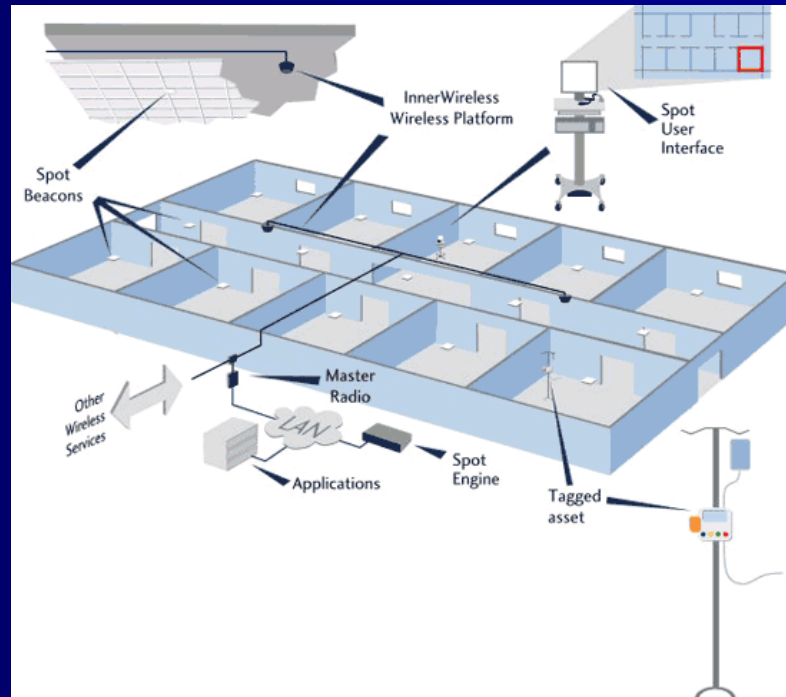
Figure 2 MAS cooperation on several supply and design chains (focused on four use cases)



RFID2Health

Clinical Risk reduction by RFID

- Side effect of the co-presence of the drugs (IT)
- Haemo-derivates, haemo-transfusions (NO)
- Department logistics (HU)
- Cytotoxic drugs in oncology (CZ)



RFID-enhanced
Intelligence
(context-awareness)





Thanks for your attention!

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