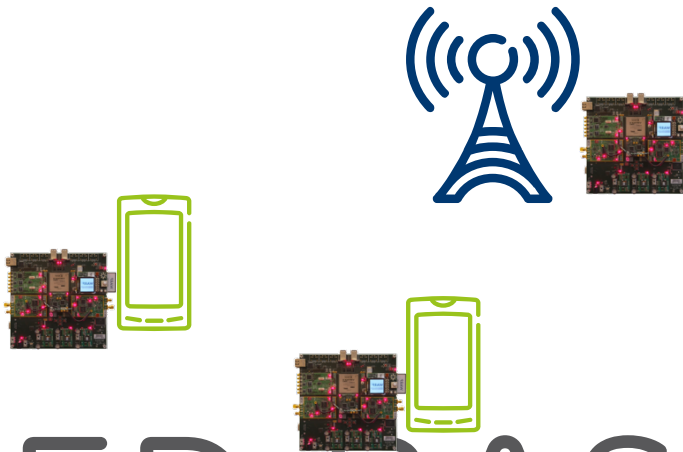




TESTBED BASED WIRELESS RESEARCH, D2D

Scandinavian workshop on testbed based wireless
research, 2012-05-29

Mikael Prytz and Vicknesan Ayadurai

OUTLINE



- › Wireless Research at Ericsson
- › Small-Scale Testbeds for Future Concepts Research
- › WARP-board based lab / testbed setup and functionalities
- › Network-Assisted Device-to-Device (D2D) implementation
- › Other implementations
- › Demo + java

ERICSSON RESEARCH



› Technology leadership

- driver of GSM, HSPA, LTE and LTE-A

› Innovation

- 50 % of Ericsson patent filings
- a major creator of conference papers, journal articles and books

› Cooperation

- leading universities, research organizations and operators

› Strength

- a global organization in 3 continents
- 600 employees, 40 % Ph.D.



Wireless Access Networks	} ~230
Radio Access Technologies	

Broadband Technologies

Packet Technologies

Multimedia Technologies

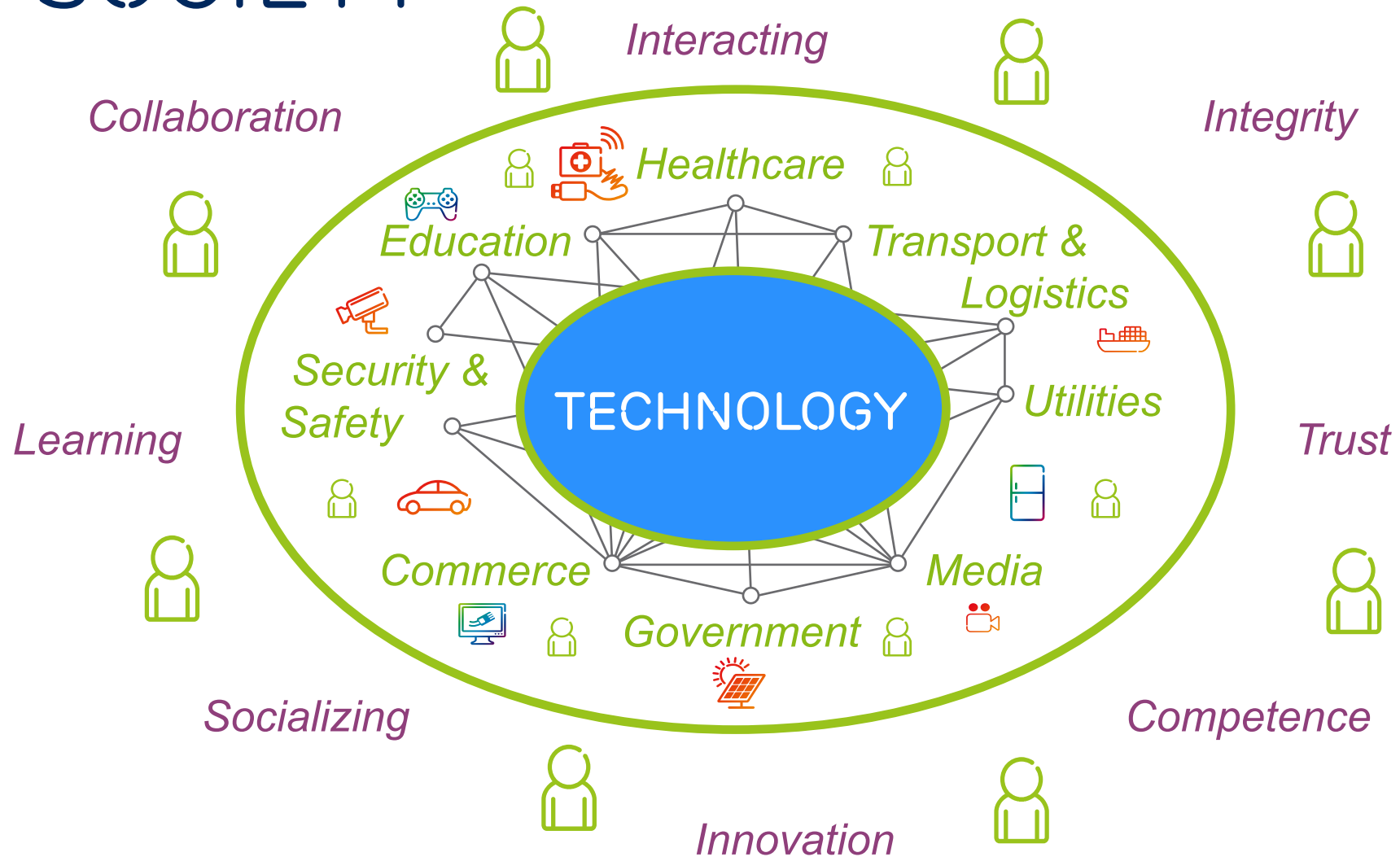
Services and Software

Security

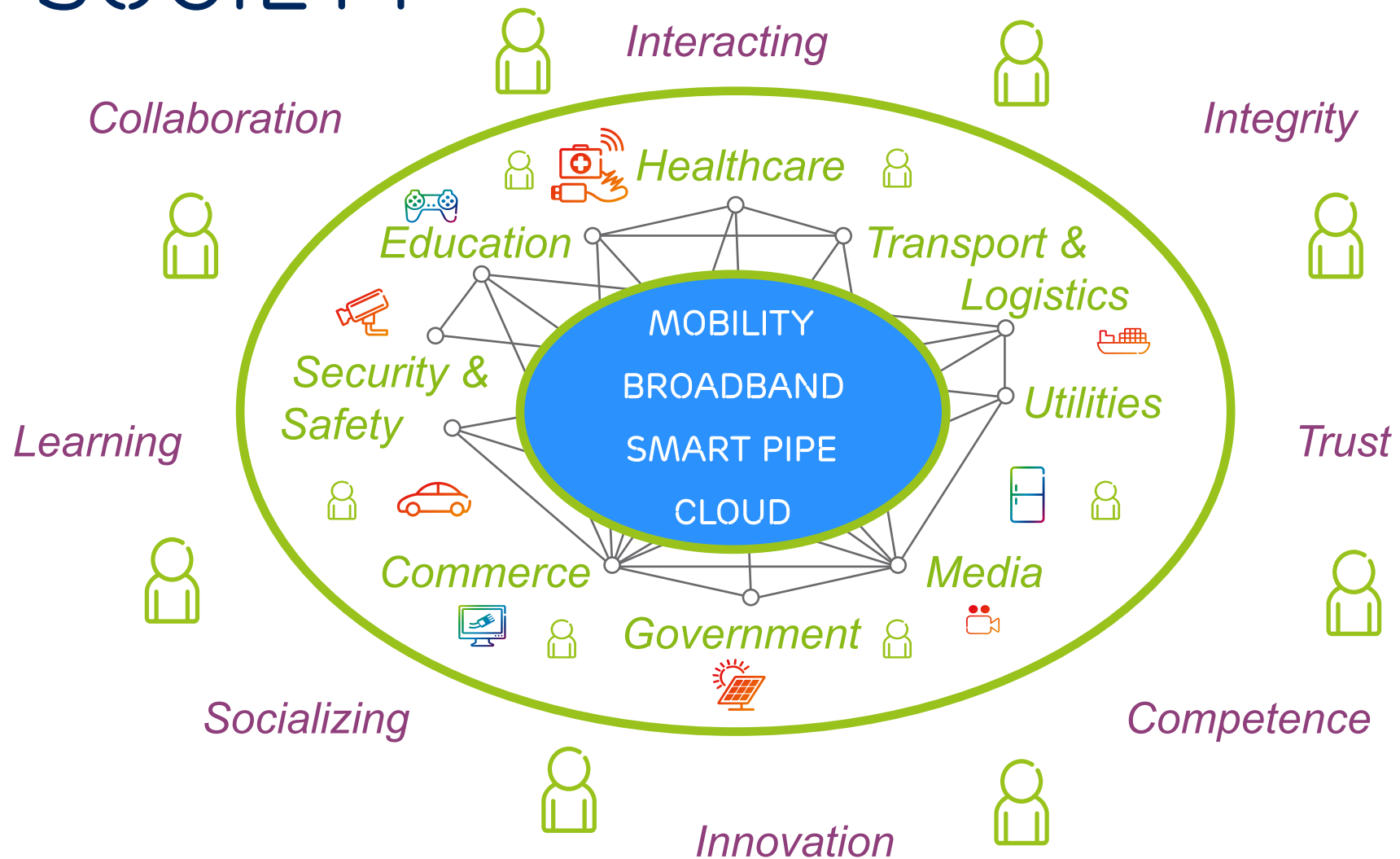
EMF Safety and Sustainability

Global Services

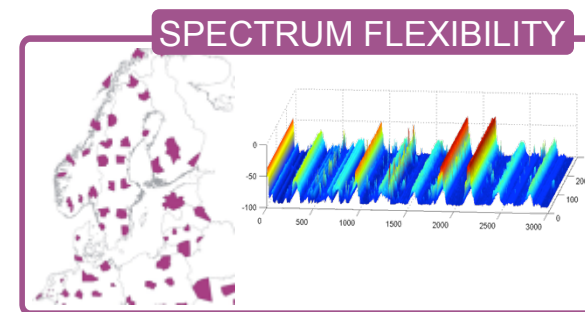
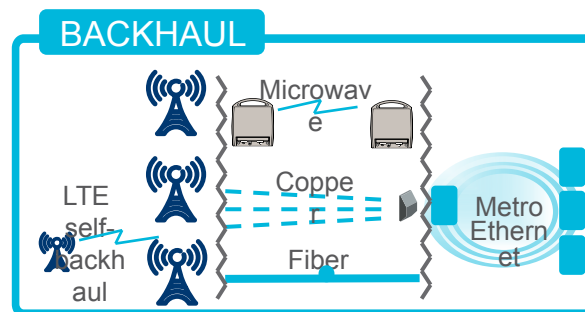
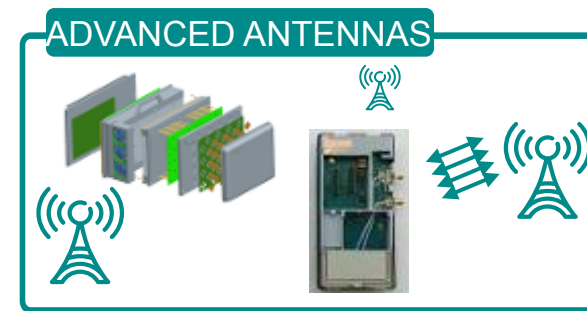
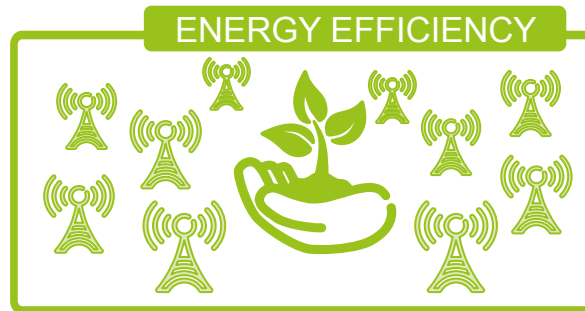
THE NETWORKED SOCIETY



THE NETWORKED SOCIETY



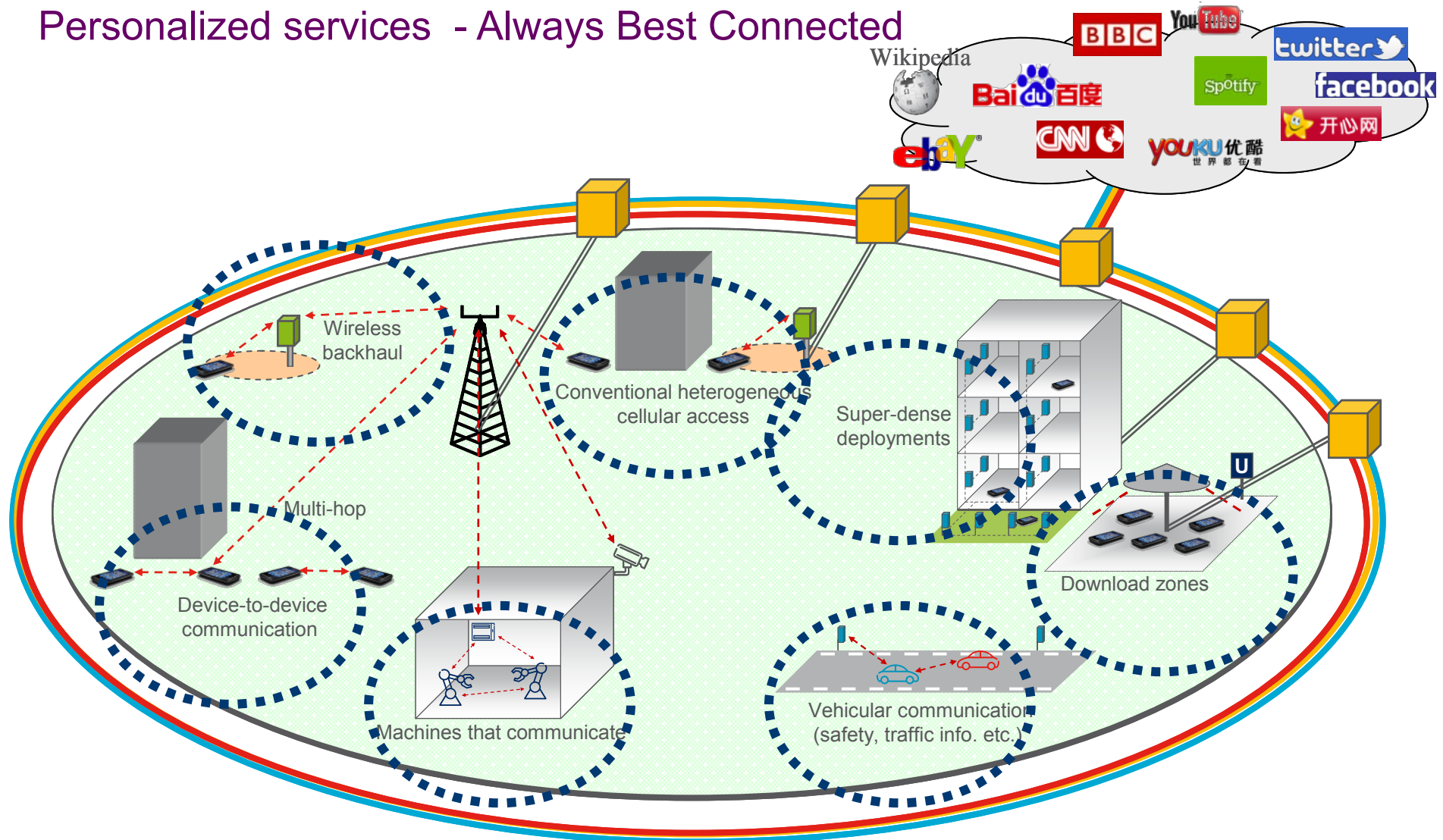
WIRELESS RESEARCH AGENDA



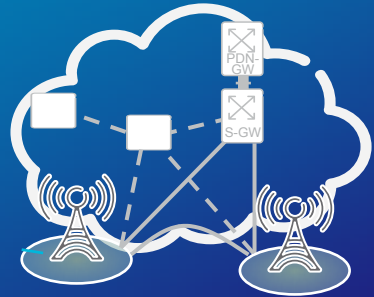
FUTURE RADIO ACCESS



Personalized services - Always Best Connected



WIRELESS ACCESS NETWORKS



Radio Network
Architecture & Protocols



Radio Network
Algorithms & Performance



Spectrum Management

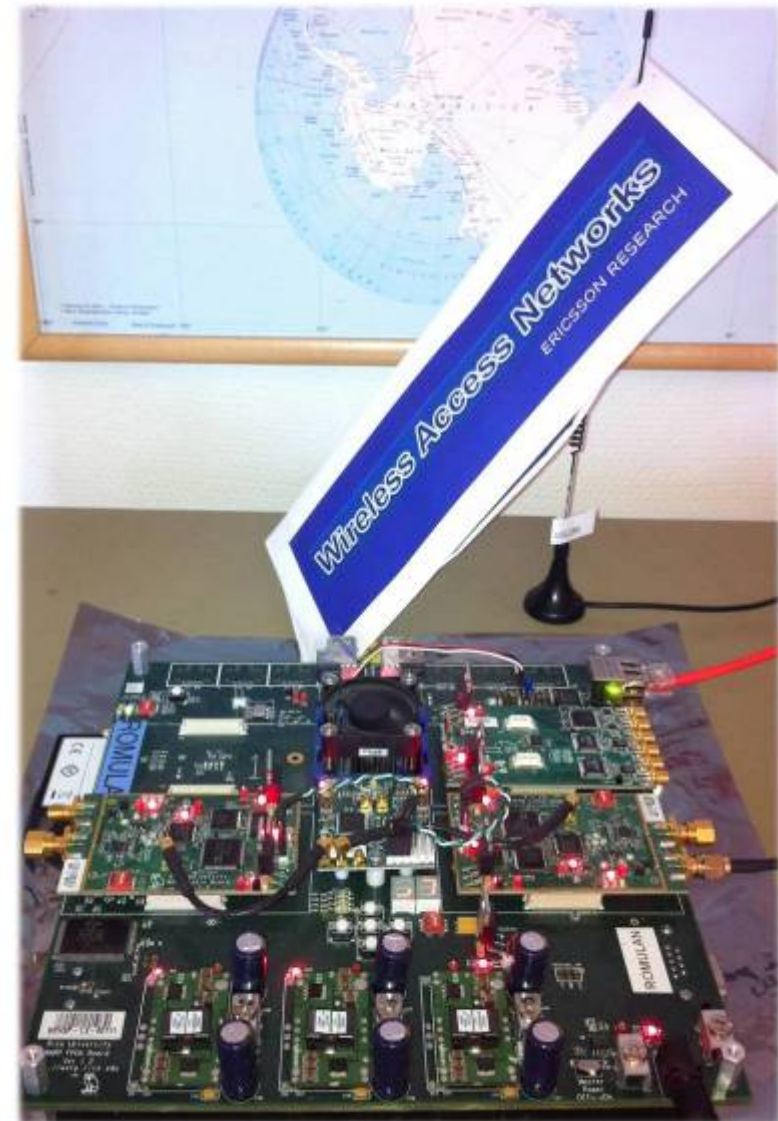


Network Management

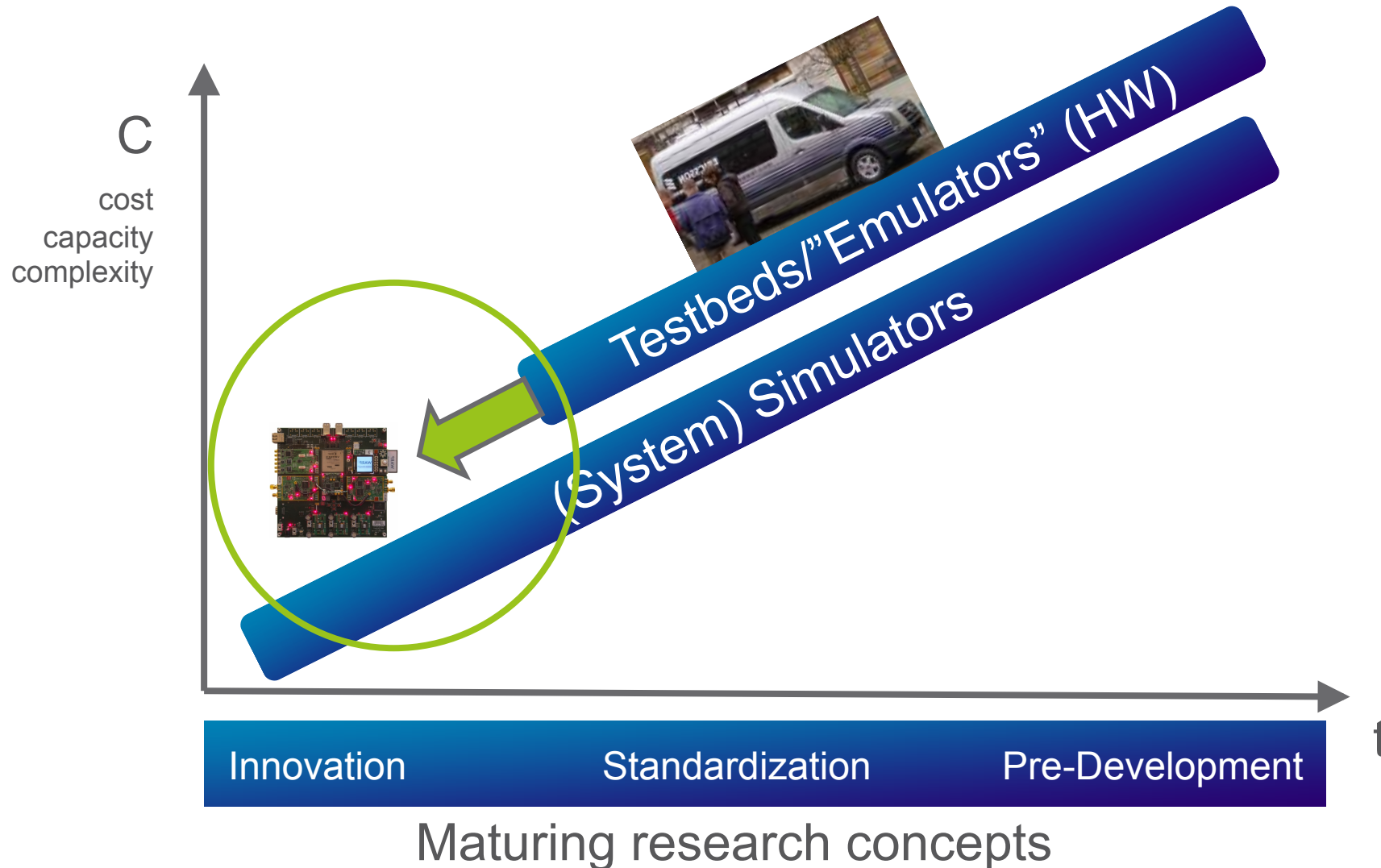
SMALL-SCALE WIRELESS TESTBEDS AT ER



- › Implement and demonstrate new radio network concepts
 - proof-of-concept
 - discovery
 - wow effect
- › University collaborations
 - KTH through RAMCOORAN (SSF)
 - UCSD
- › Building things is fun!



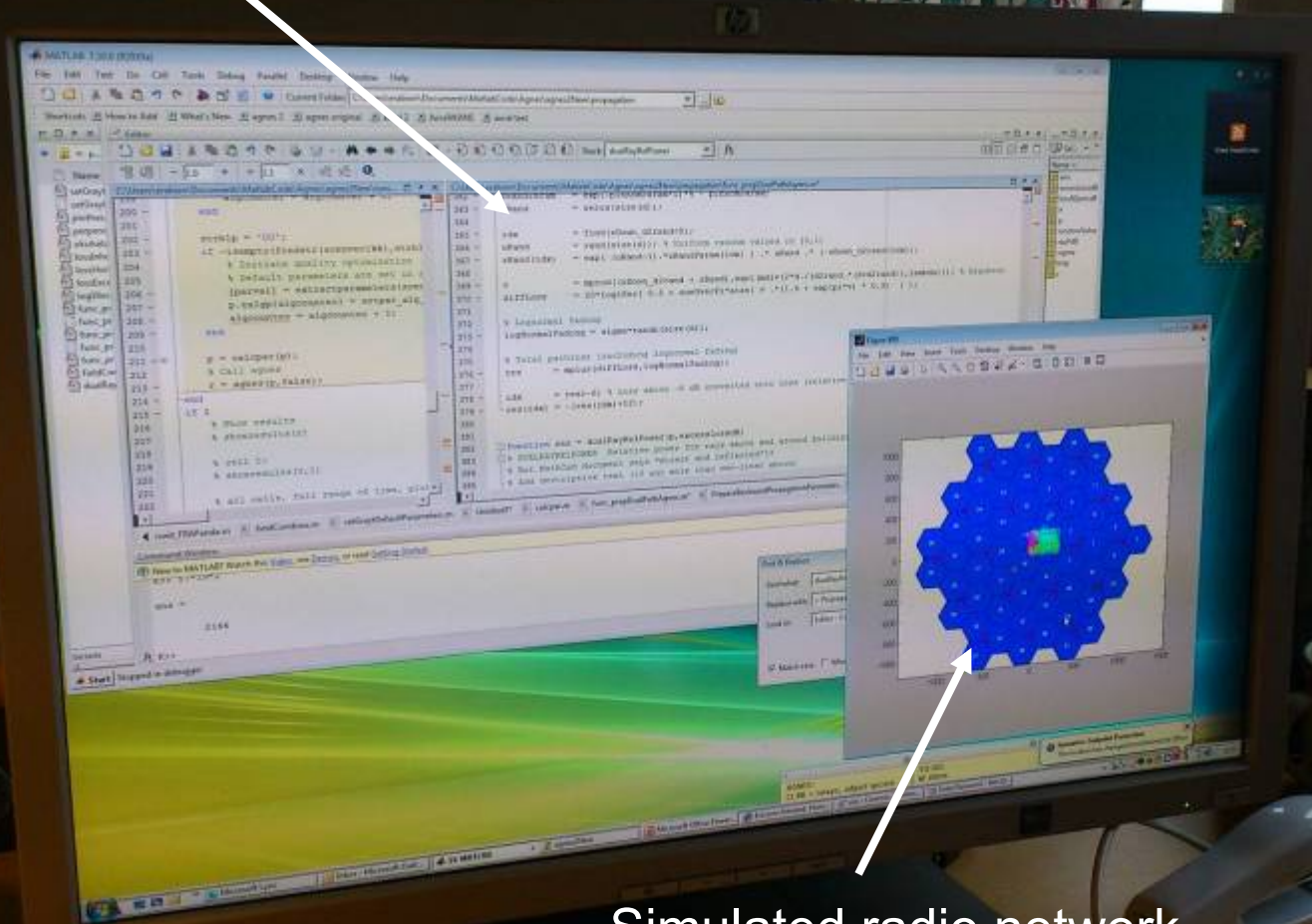
TESTBEDS FOR WIRELESS CONCEPTS



RADIO NETWORK SIMULATIONS



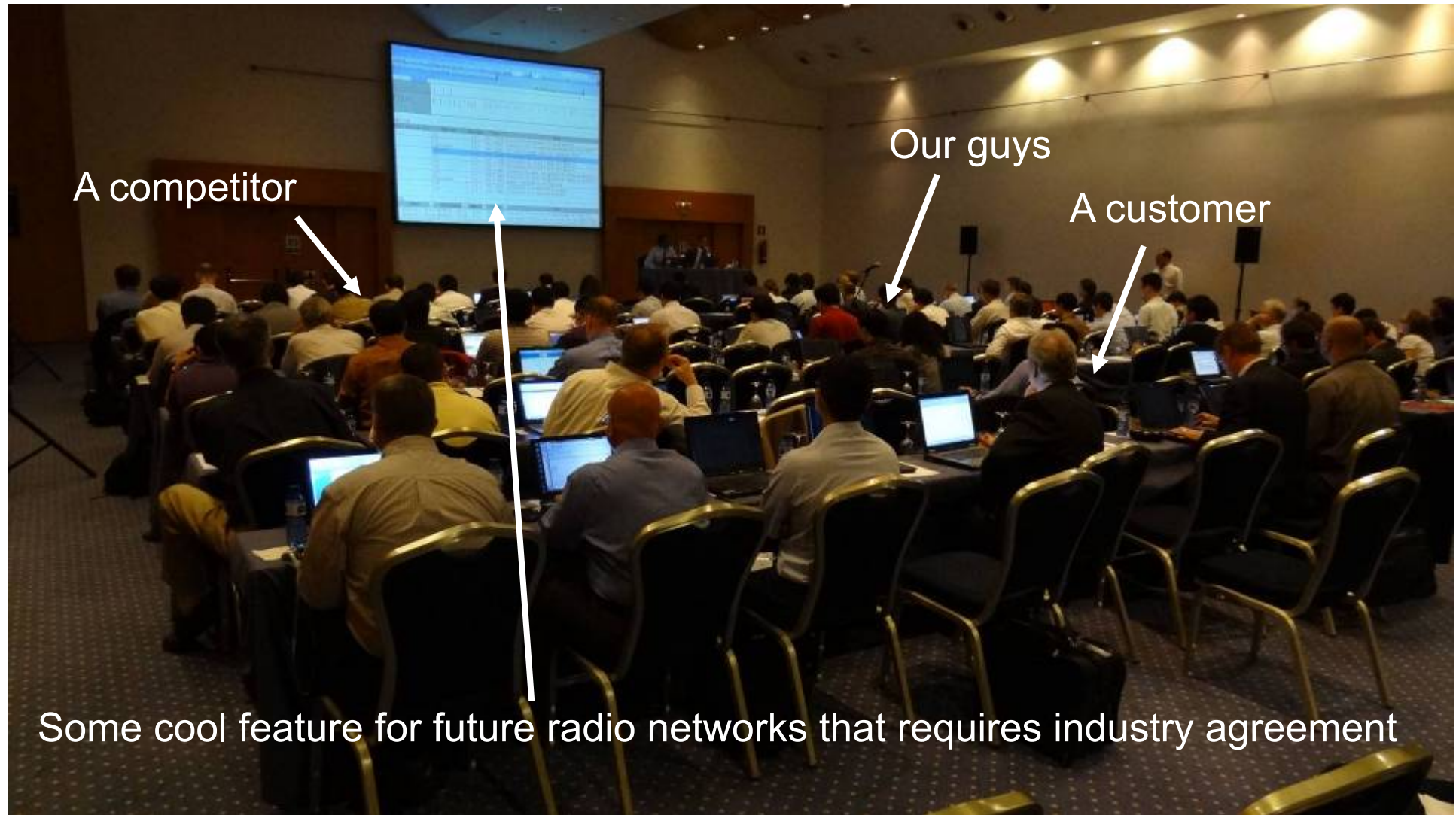
MATLAB code



Simulated radio network

STANDARDIZATION MEETING

(Somewhere in the world, a hotel
basement, late in the evening...)



A competitor

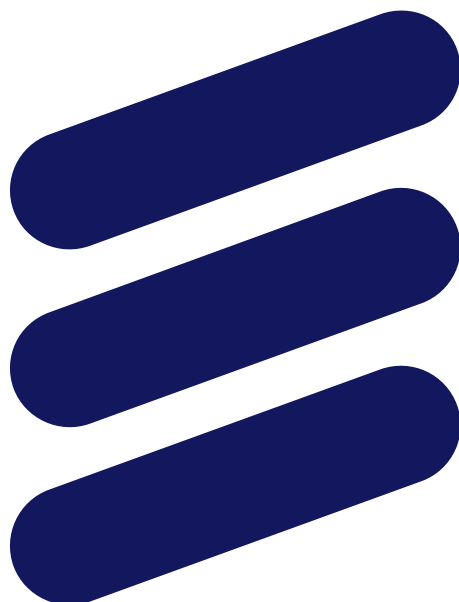
Our guys

A customer

Some cool feature for future radio networks that requires industry agreement

WIRELESS ACCESS NETWORKS





ERICSSON