



JavaOneSM

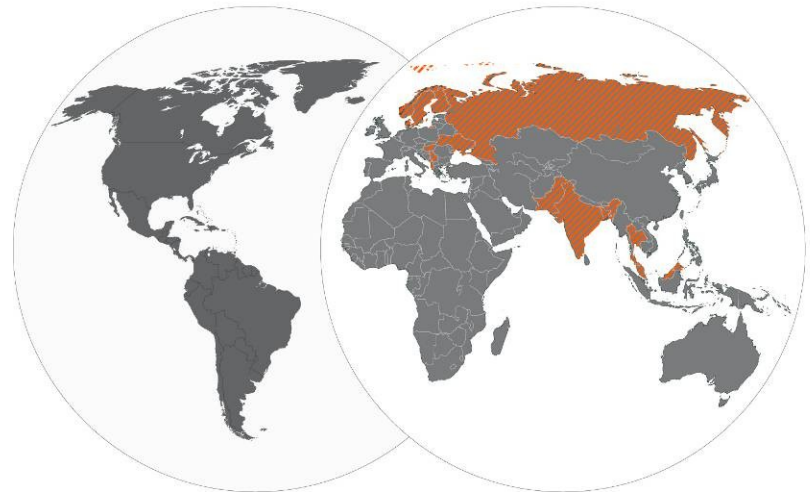
PlaySIM: Experimenting with Java CardTM 3 System Programming

Fritjof Boger Engelhardt
Telenor Research and Innovation



About Telenor

- > Among the world's largest mobile operators with 164 million mobile subscriptions.
- > Strong footprint in the Nordic region, Central Eastern Europe and Asia.
- > Our business is telecommunications
 - Global Mobile operations.
 - Fixed operations in Nordic region.
 - Broadcast operations in Nordic Region.



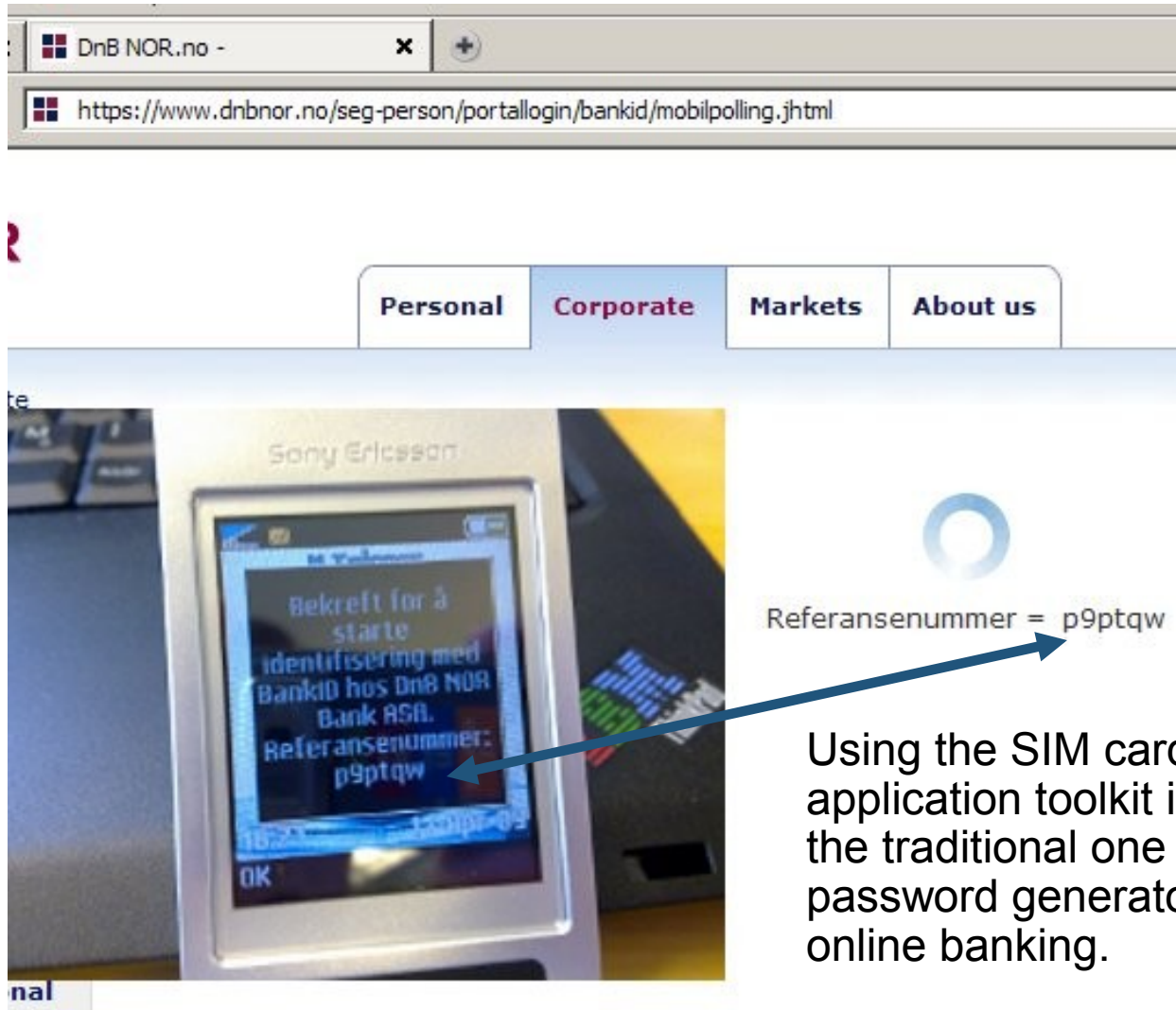
Why PlaySIM?

- > The SIM card is a secure connected service platform that you seldom leave behind.
- > There are 2,4 Billion card out there (2007).

We cannot miss the opportunity to create new and useful services for such a widely deployed platform. How do we foster innovation?

- > Creating an open platform that allows people to PLAY!
- > PlaySIM aims to give developers a platform for open innovation.
- > Telco Operators are conservative. They need services and applications demonstrated and showcases before they commit to new SIM cards.

Highly useful SIM services exist today.



But we need to move ahead!

Telecom Italia announces Z-SIM with built-in radio

by [Paul Miller](#), posted Dec 13th 2005 at 7:00AM

Telecom Italia has developed a [SIM card](#) with a built-in radio (similar to the

W-SIM meters and p applica making They'r that pl [Via S

[Print story](#)

Blue Sky squeezes GPS onto a SIM Dawn of the next killer app?

By [Bill Ray](#) • [Get more from this author](#)



007 10:04 GMT

es success

he end of SIM techn
d be a killer applica

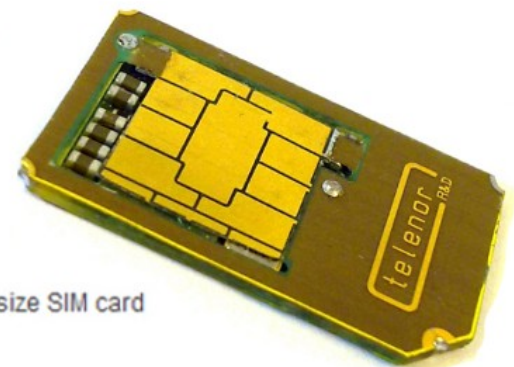
engadget

Motion detecting SIMSense SIM card opens new world of possibilities

by [Darren Murph](#), posted Feb 16th 2009 at 5:24PM



...e thought of that" category. [Technologies](#) is making a first motion detecting and e, as it's so eloquently of interaction with phones meter built in. For instance, e upon receiving a second S that explains the situation. Or they could navigate phone better still, they could program their handset to dial an n fall while close to the person's body. There's been no



Video presentation of WLANSIM

Usage of WLANSIM demonstrated in the attached video (in Norwegian and english) The WLANSIM is standard size SIM card with an embedded 802.11 radio and antenna.

Moving ahead with Java Card™ 3

- > The SIM cards have been a very closed and proprietary environment.
- > JC 3 brings IP networking, multithreading, card embedded web server and full Java language support.
- > Servlet programming model opens this platform for thousands of new developers.

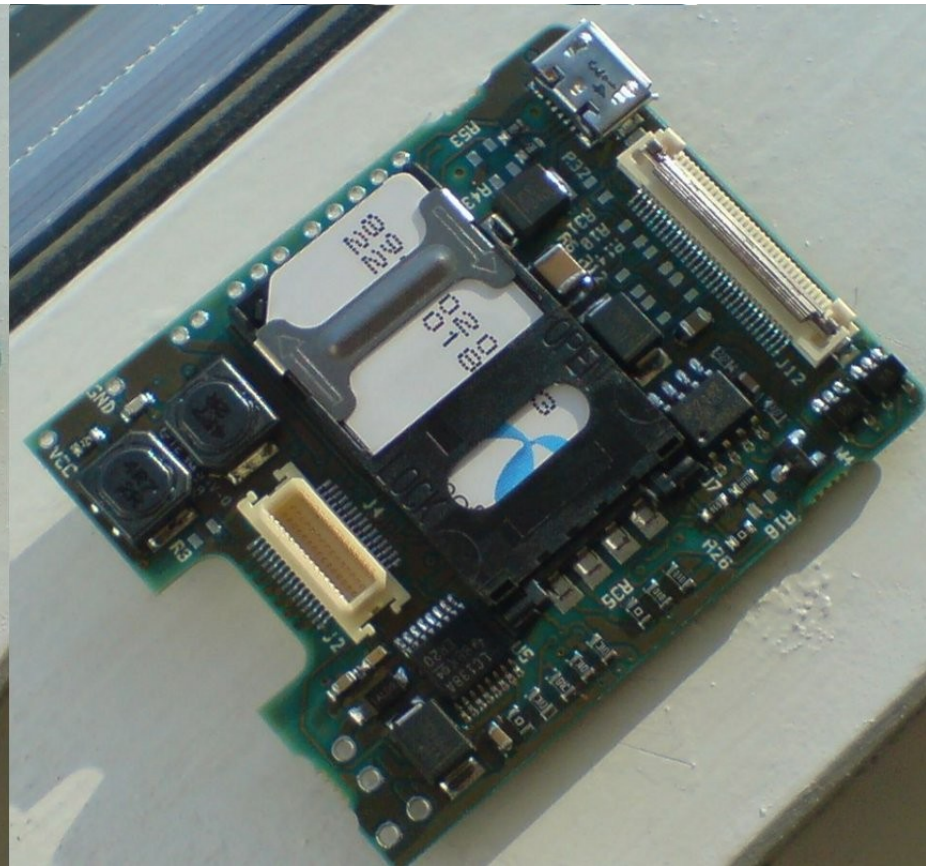
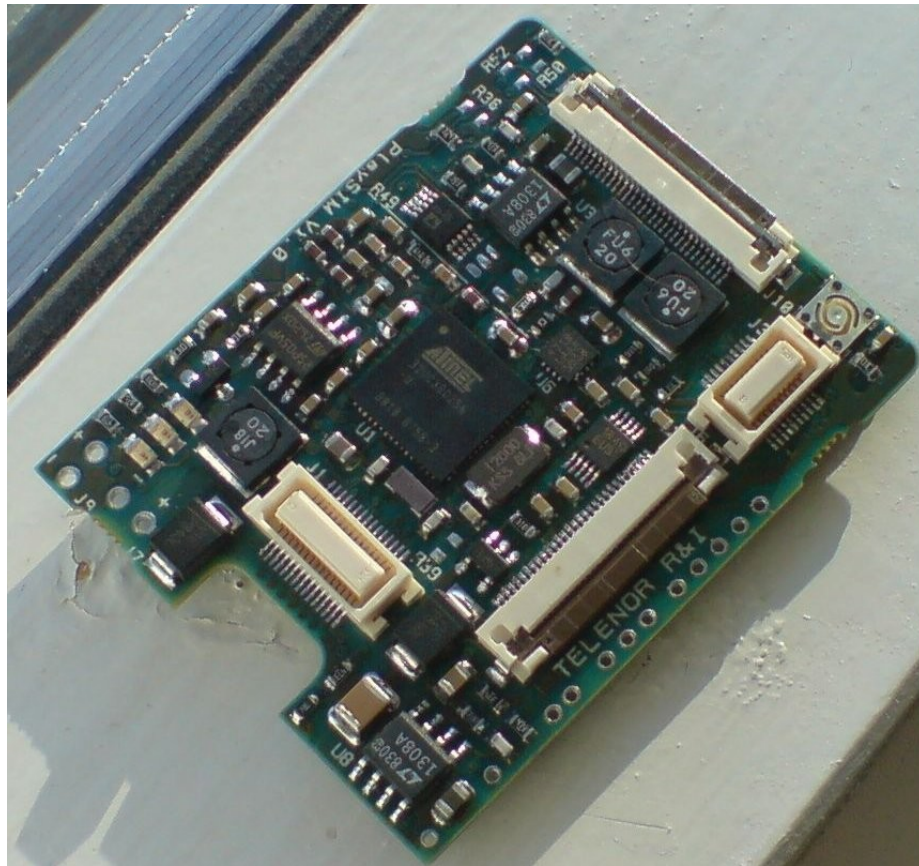


Some new ideas..

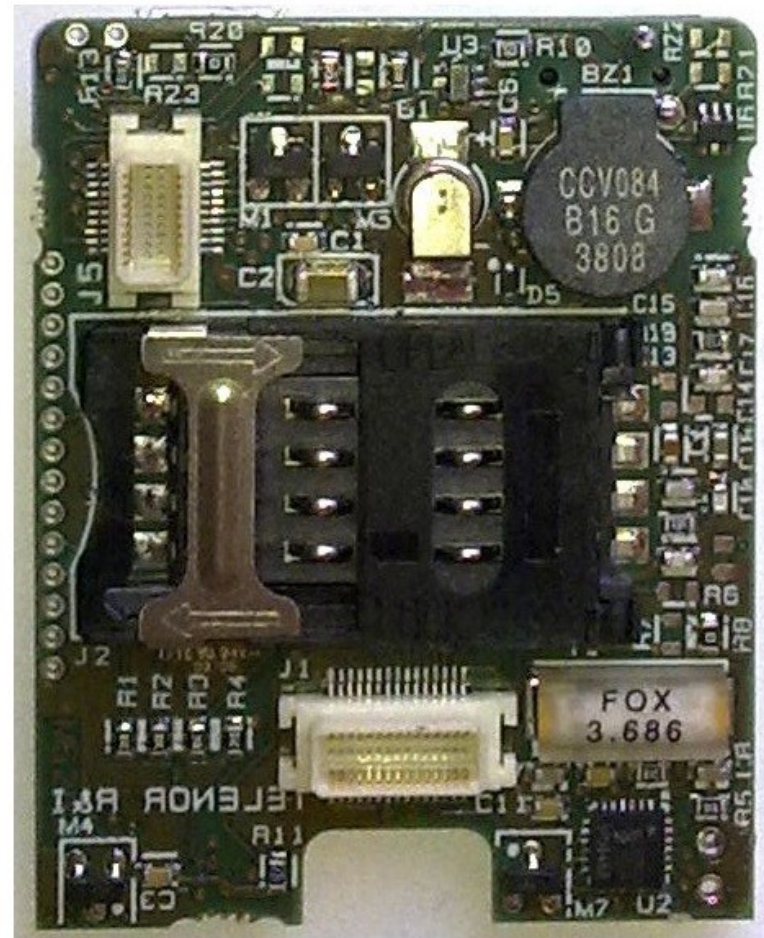
- > Our student interns love to play with the SunSPOT platform and it is popular at the local university!
- > Maybe we can leverage this enthusiasm to spur SIM card and service innovation?



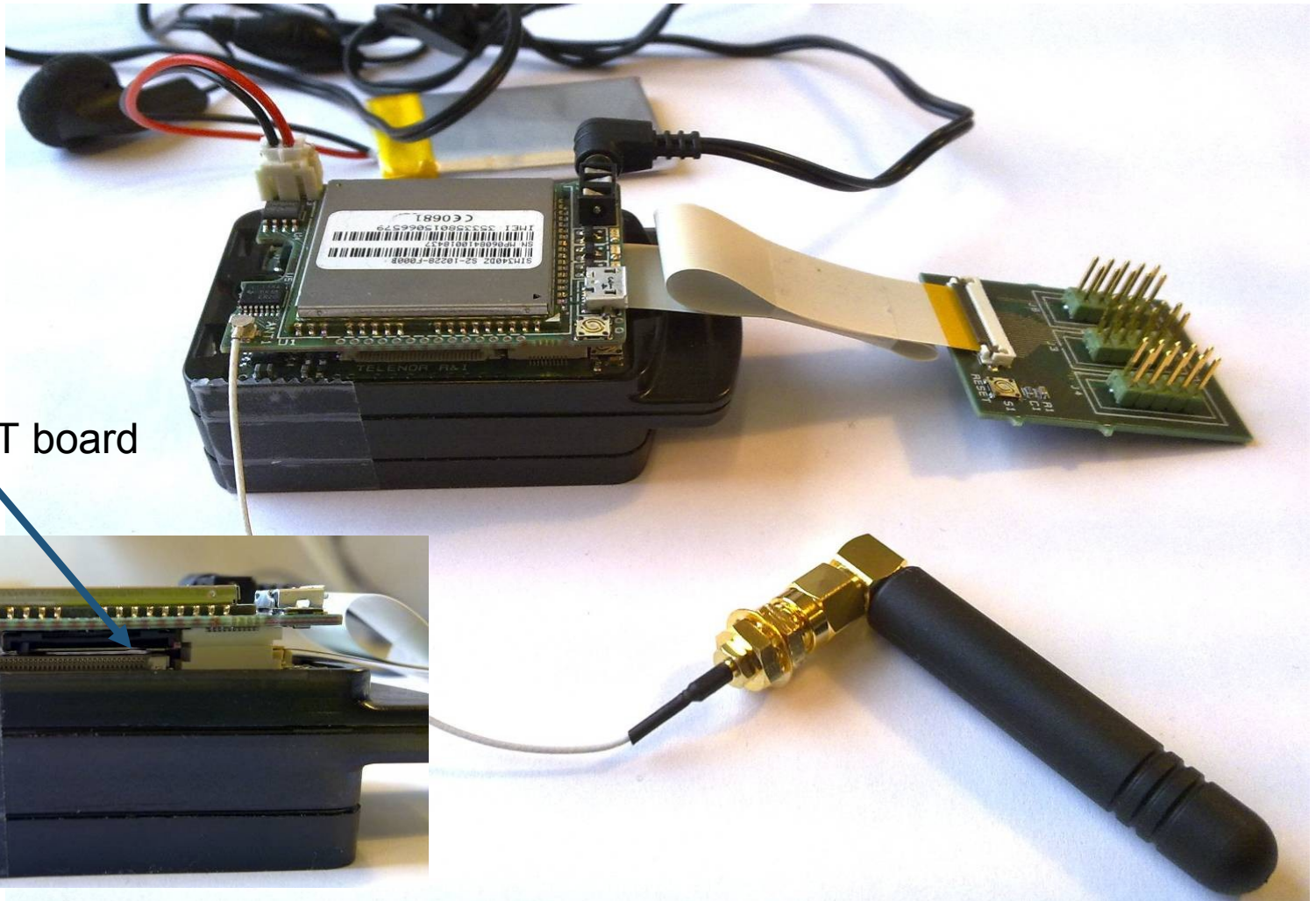
Say hello to the PlaySIM add on board



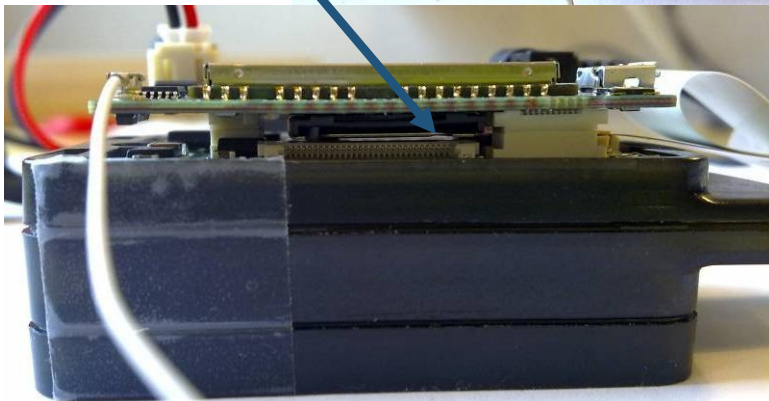
Why not add a GSM phone as well?



Yes, it is also a phone



Other SunSPOT board



PlaySIM theory of operation

GSM/UMTS
terminals



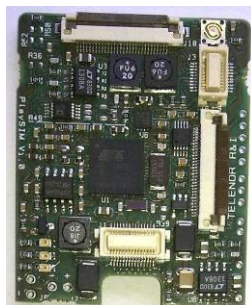
“or”



SunSPOT M2M
GSM module

Java Card™ 3 “like”
environment for
prototyping

Inexpensive add on
board to the SunSPOT



SIM
emulation



SIM
interface



Authentication
algorithms and
secret keys

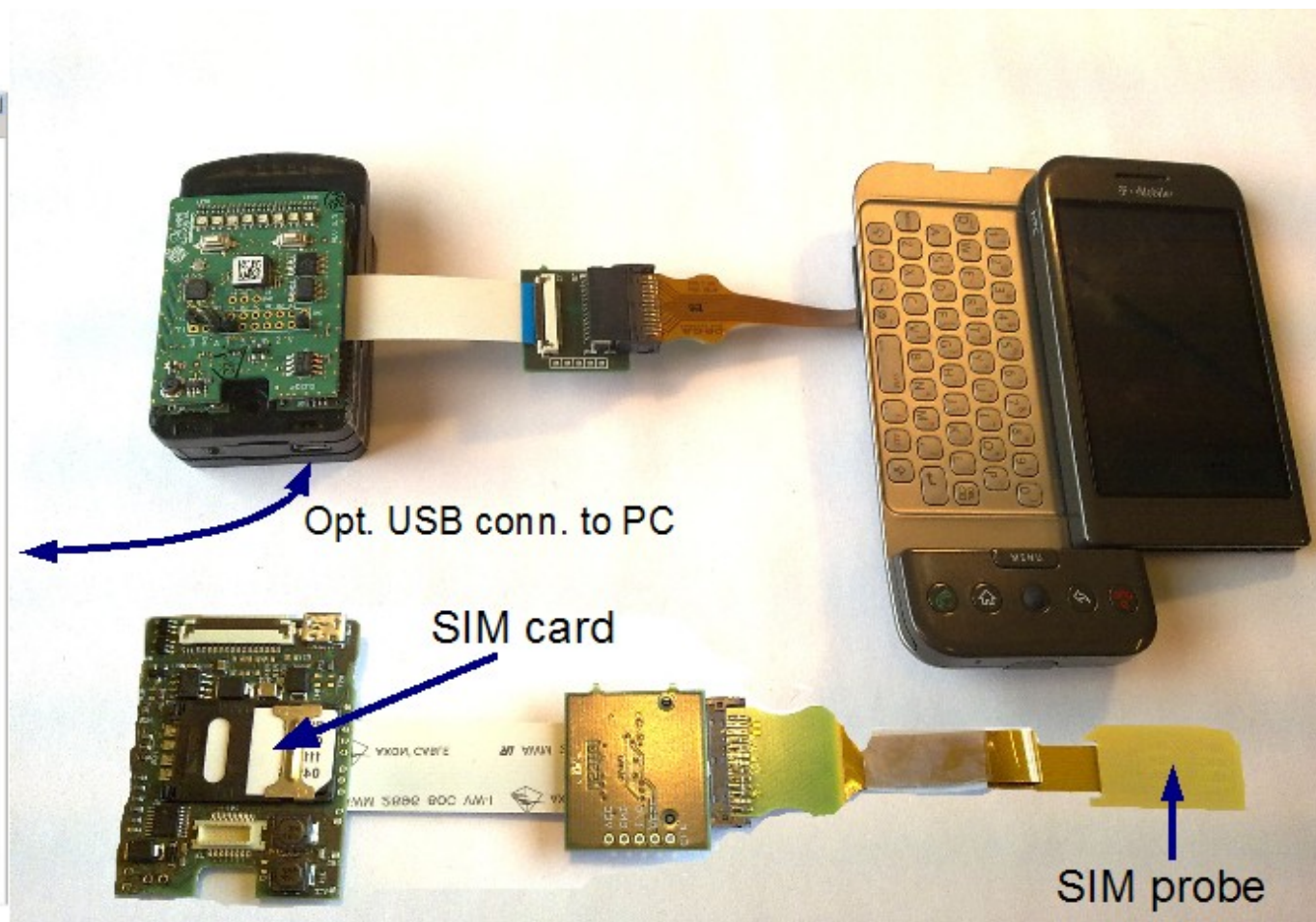
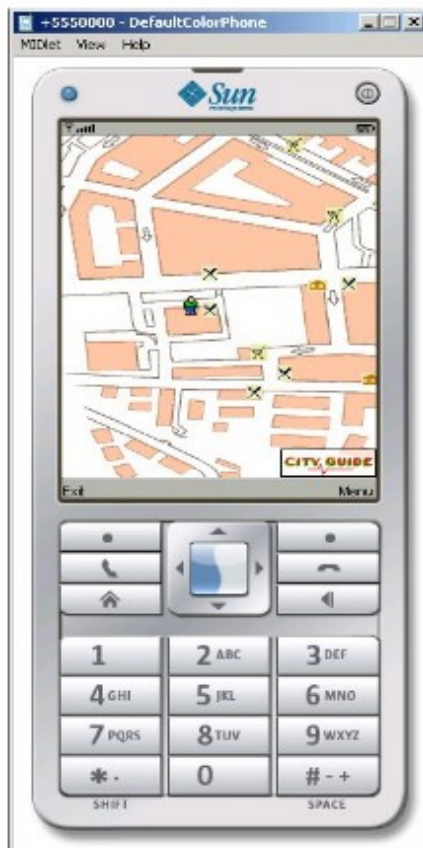


Application
deployment
flexibility



PlaySIM configured with a SIM probe

WTK on PC



Demo

PlaySIM and GSM module board

- > Wireless ticketing
- > Handset branding
- > SIM card communication tracer

- > And just for fun:
 - Making a call from the SunSPOT
 - Sending SMS messages from the SunSPOT

- > Come join the fun at: <https://playsim.dev.java.net/>



JavaOneSM

Thank You

Fritjof Boger Engelhardtsen
Fritjof.Boger.Engelhardtsen@telenor.com