



Java is a trademark of Sun Microsystems, Inc.



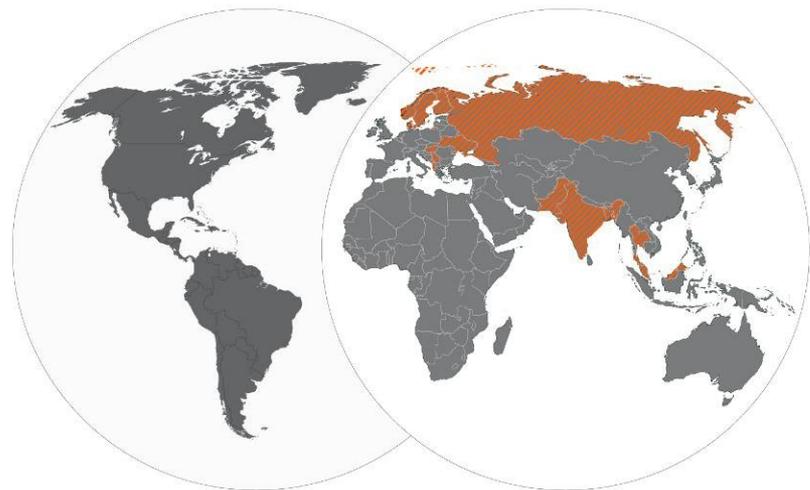
# JavaOne<sup>SM</sup>

## PlaySIM: Experimenting with Java Card<sup>TM</sup> 3 System Programming

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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.



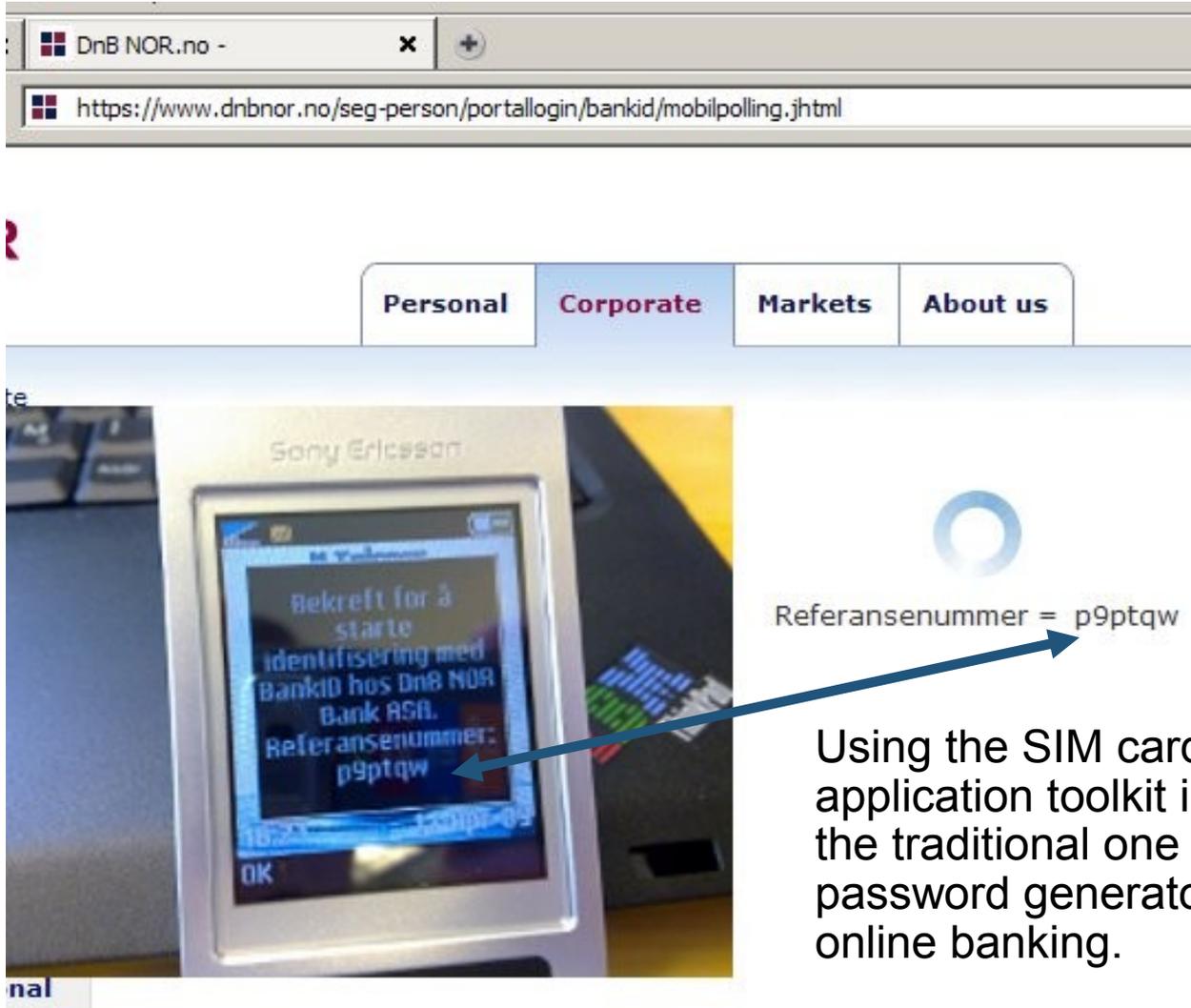
# Why PlaySIM?

- > 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.



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Personal Corporate Markets About us

Sony Ericsson

Bekreft for å starte identifisering med BankID hos DnB NOR Bank ASA. Referansenummer: p9ptqw

OK

Referansenummer = p9ptqw

nal

Using the SIM card and SIM application toolkit instead of the traditional one time password generator for online banking.

# 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 pa applica makin 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

07 10:04 GMT

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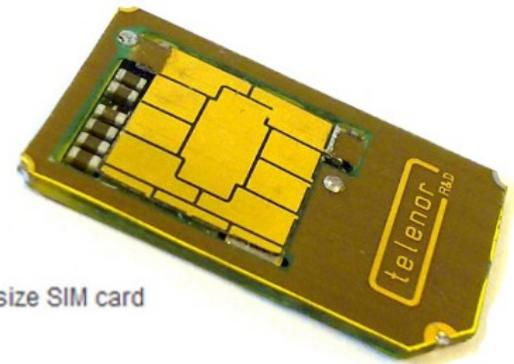
## engadget

## 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. ...r 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.

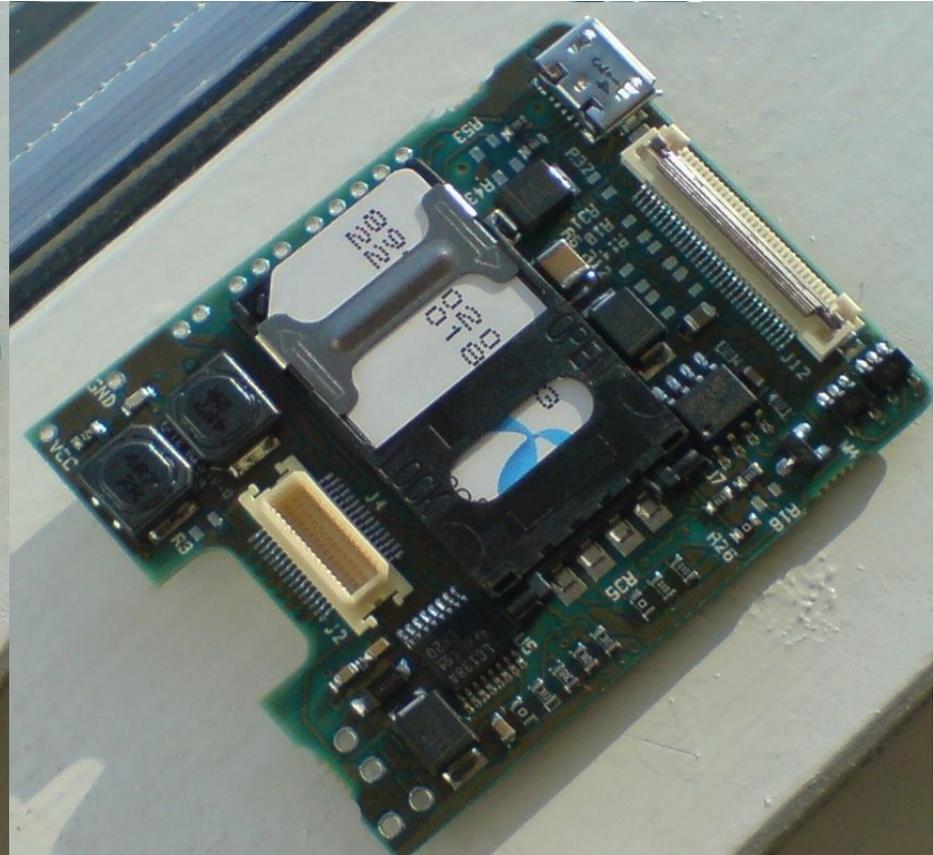
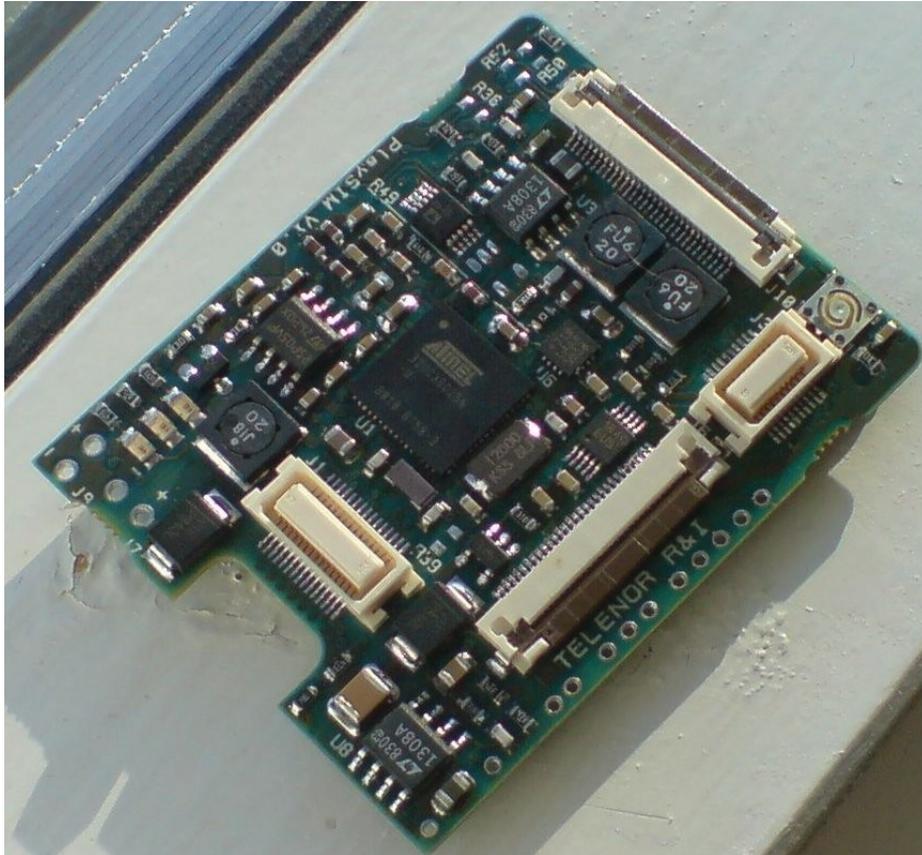


## Some new ideas..

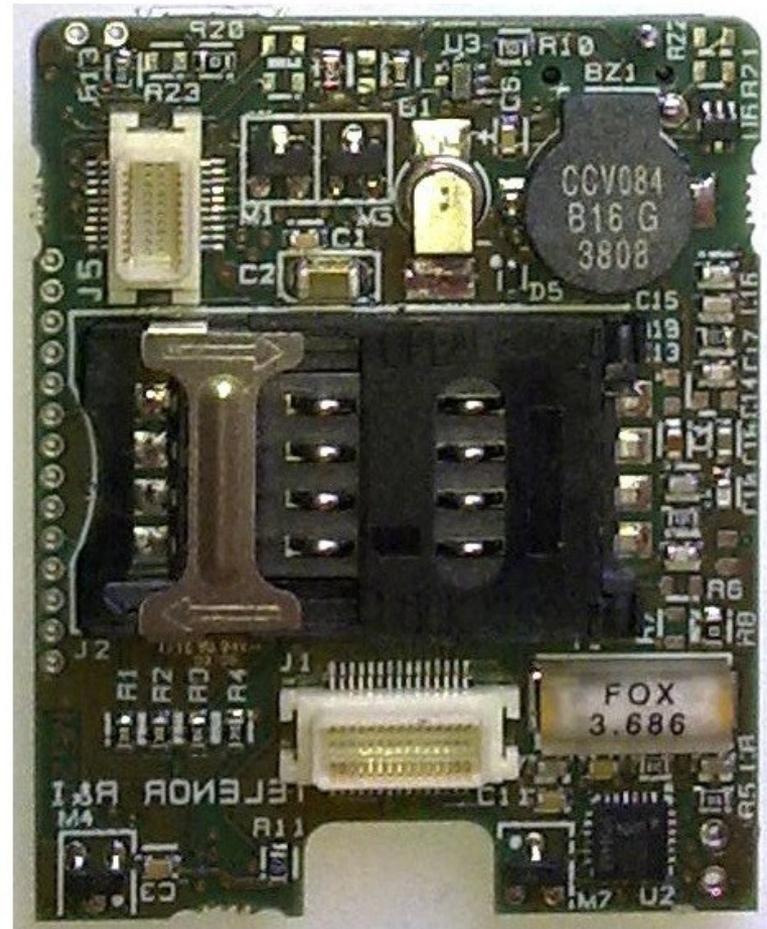
- > Our student interns love to play with the SunSPOT platform and it is popular at the local university!
- > Maybe we can leverage this enthusiasm to spur SIM card and service innovation?



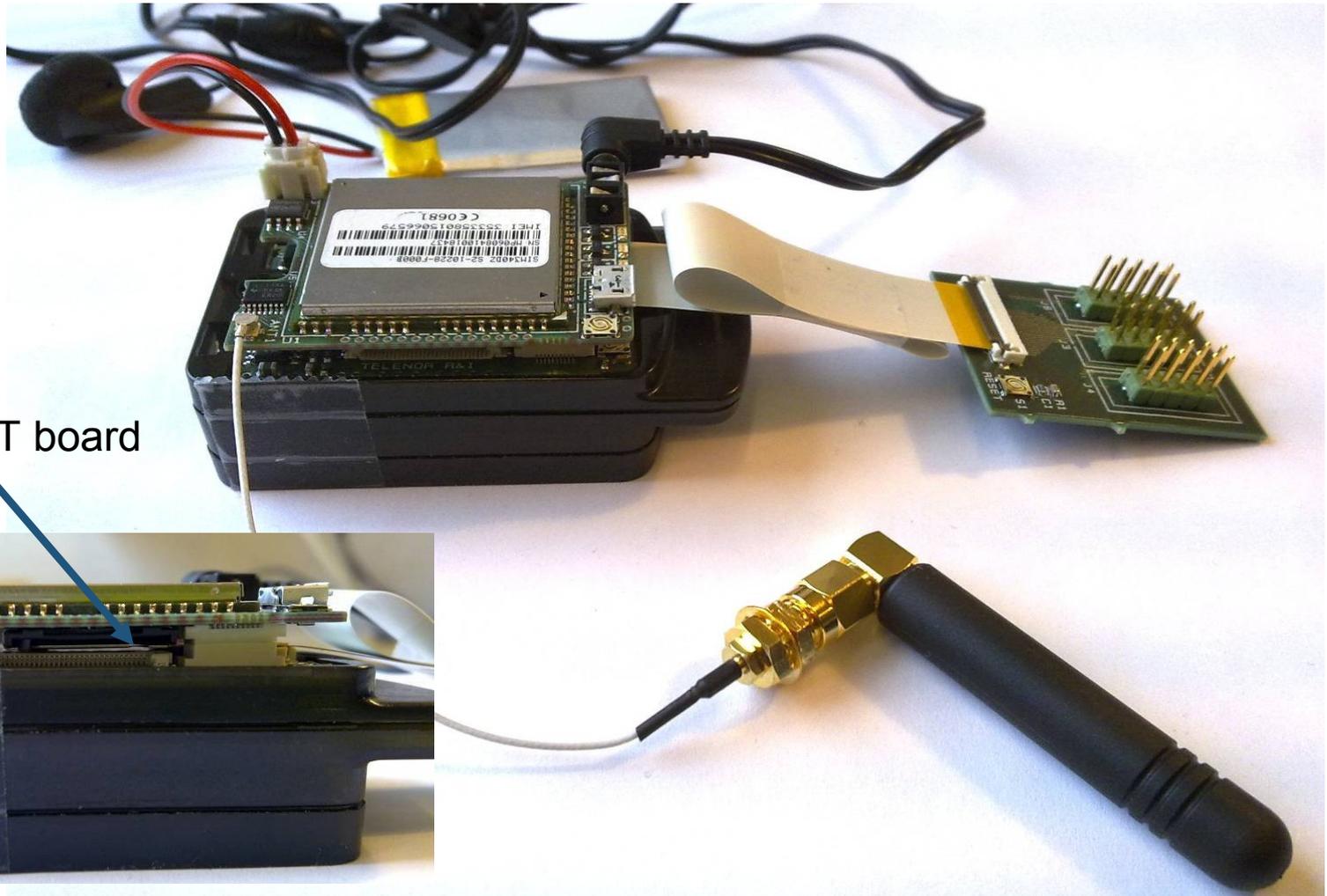
## Say hello to the PlaySIM add on board



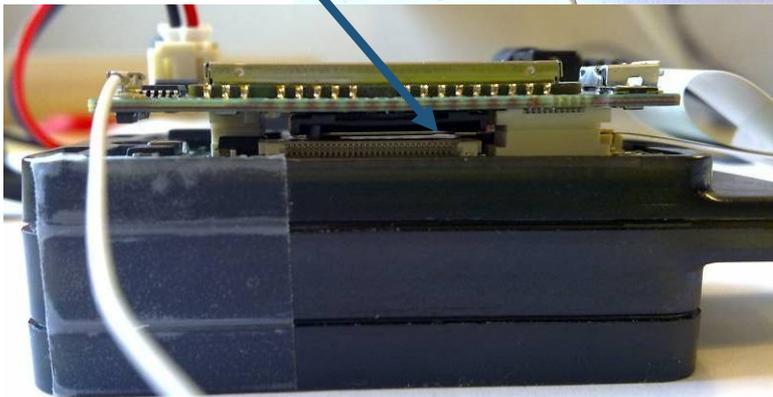
## Why not add a GSM phone as well?



## Yes, it is also a phone



Other SunSPOT board



## PlaySIM theory of operation

GSM/UMTS terminals



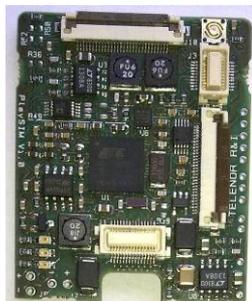
“or”



SunSPOT M2M  
GSM module

Java Card™ 3 “like”  
environment for  
prototyping

Inexpensive add on  
board to the SunSPOT



SIM  
emulation

SIM  
interface

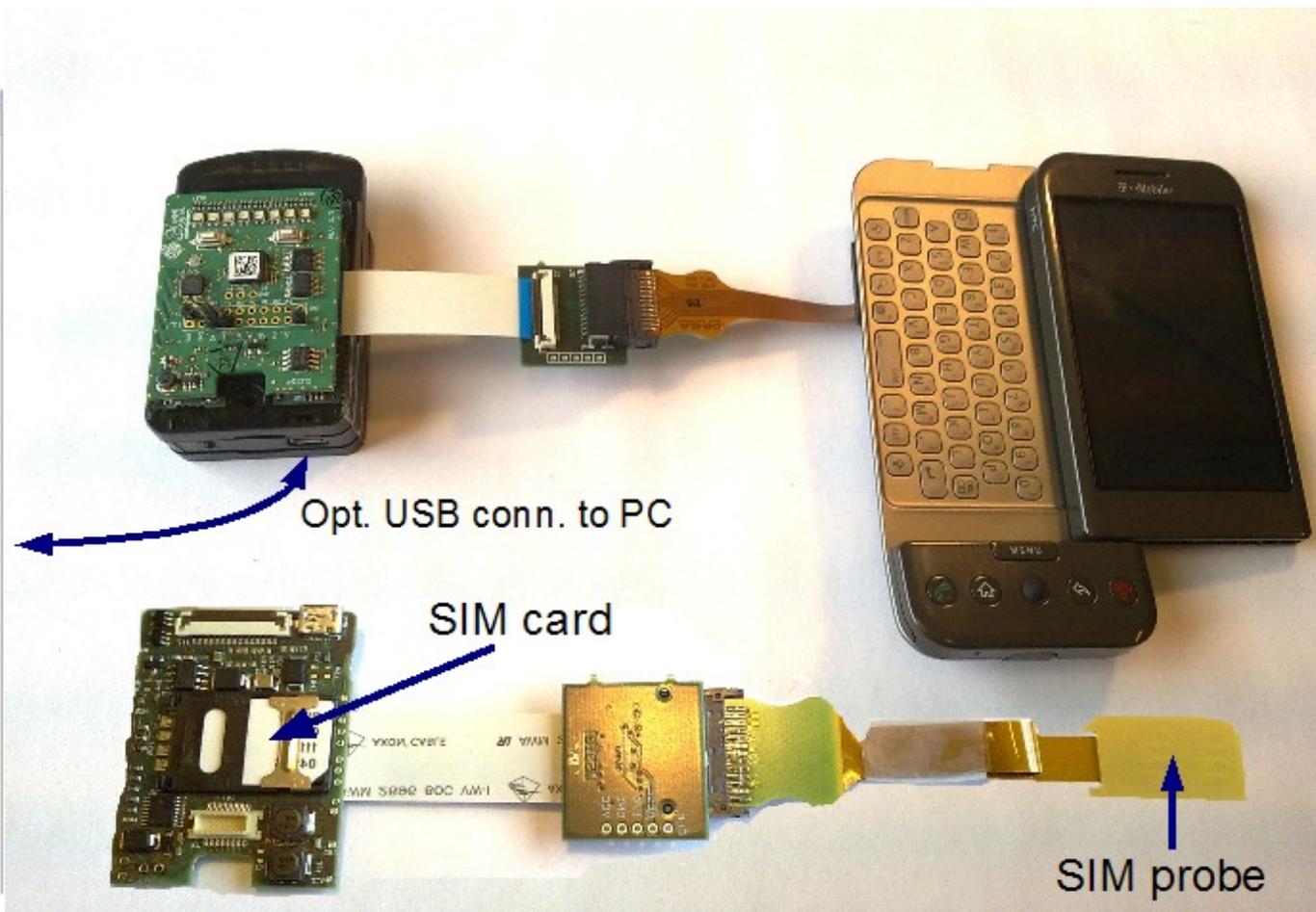
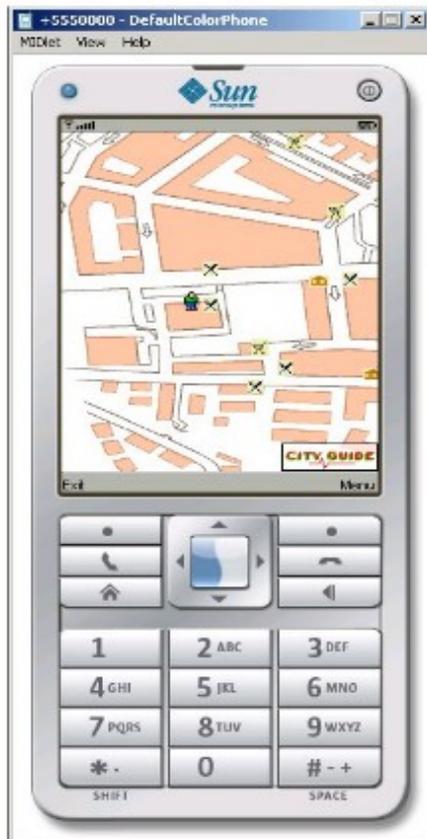
Authentication  
algorithms and  
secret keys



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/>



# JavaOne<sup>SM</sup>

# Thank You

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