



**imagine**  
your  
**mobile world**  
and **build it...**

Designing secure wireless services embedded in a USIM Application Toolkit\* (USAT\*) card is today a difficult task. The deployment of such services requires rigorous programming techniques as no bugs can be tolerated.

Paradoxically, the implementation of USAT services is an extremely complex operation due to the absence of visualisation tools and debuggers.

In addition, USAT services must communicate with external servers and require an access to a network (for SMS, GPRS, etc.), which can be slow, costly and unreliable. Besides, the network service must be tested with several client phones to validate the acceptance charge.

Before committing to a live deployment of real mobile phones, imagine how convenient and convincing it would be to demonstrate your complete solution (possibly involving several phones/USAT cards) on an exact replication of a real mobile system.

Not only could you validate your software design but you could demonstrate it to your customers.

*VirtuoSimo*<sup>TM</sup> is the answer to your concerns. It provides you with a new development and simulation platform that is essential for your challenging business in the mobile service area. It makes your implementation of USAT applets and related services on the wireless network much easier and controlled.

With *VirtuoSimo*<sup>TM</sup>, your development costs are reduced to a minimum in time and money by allowing you to track all errors in an iterative manner.

You develop a Java Card<sup>TM</sup> applet for a USAT card and *VirtuoSimo*<sup>TM</sup> allows you to test it using its mobile phone simulator and a wireless network simulator.

*VirtuoSimo*<sup>TM</sup> also enables you to present your USAT services with a friendly graphical interface to your customers with no network subscription and no network dependence.

**Designing Secure Wireless Services...**

**... Without Groping...**

**... Has Become A Reality**

**Simulated or Real (U)SIM**



\* Also named SIM Toolkit

**VirtuoSimo<sup>TM</sup>**



**All SIM Cards Supported**

For standard and proprietary commands Gemplus, G&D, InCard, Oberthur, Orga, SchlumbergerSema, etc.

**Scenarios**

Applet test and validation tool included

**Integration in Sun<sup>TM</sup> ONE Studio**

Java Card<sup>TM</sup> SIM Toolkit applet debugger





A  
Wide  
Range  
of  
Possibilities

*VirtuoSimo*<sup>™</sup> provides communication between a simulated phone and any real USAT cards or with a simulated USAT card. Moreover the USAT cards can exchange data with servers on the network.

- ✓ 3GPP/GSM 11.11
  - Simulation of the *sim.access* API
  - Simulation of the card file system
  - Management and browsing of the file system of a real card
  - Full interpretation of the files stored into the card
- ✓ 3GPP/ GSM 11.14
  - Simulation of the *sim.toolkit* API v1.0.0, v7.1.0
  - Connection and USAT exchange with a a real card
  - Editable tracer/interpreter/analyser (APDU or command level) of all envelope, proactive command, terminal response exchanges
- ✓ SMS Services
  - GSM 03.40, 03.48: unformatted and formatted SMS
  - Tracers for SMS exchanges
  - Tests of services with multiple clients and multiple sessions
- ✓ Java Card<sup>™</sup> applets code debugging
  - Java Card<sup>™</sup> applets debugging with Sun<sup>™</sup> ONE Studio (breakpoints, watches during the execution)
- ✓ Scenarios
  - Validation of USAT applets in a simulated or a real card
- ✓ Extra Features
  - Simulation of several phones and servers at the same time
  - Bearer-independent commands (CSD, GPRS, Bluetooth, etc.)
  - Icon management (black&white, color)
  - Dual-slot commands
  - UCS2 support (Chinese, Japanese, Russian, etc.)

On Time  
with the  
Future  
Standards

*VirtuoSimo*<sup>™</sup> will support you in your current and future business in the mobile area. *VirtuoSimo*<sup>™</sup> is continuously upgraded according to the new wireless standard. *VirtuoSimo*<sup>™</sup> is a strategic choice for the present and a definitive advantage for the future.

A Complete Tool for Any Cards

