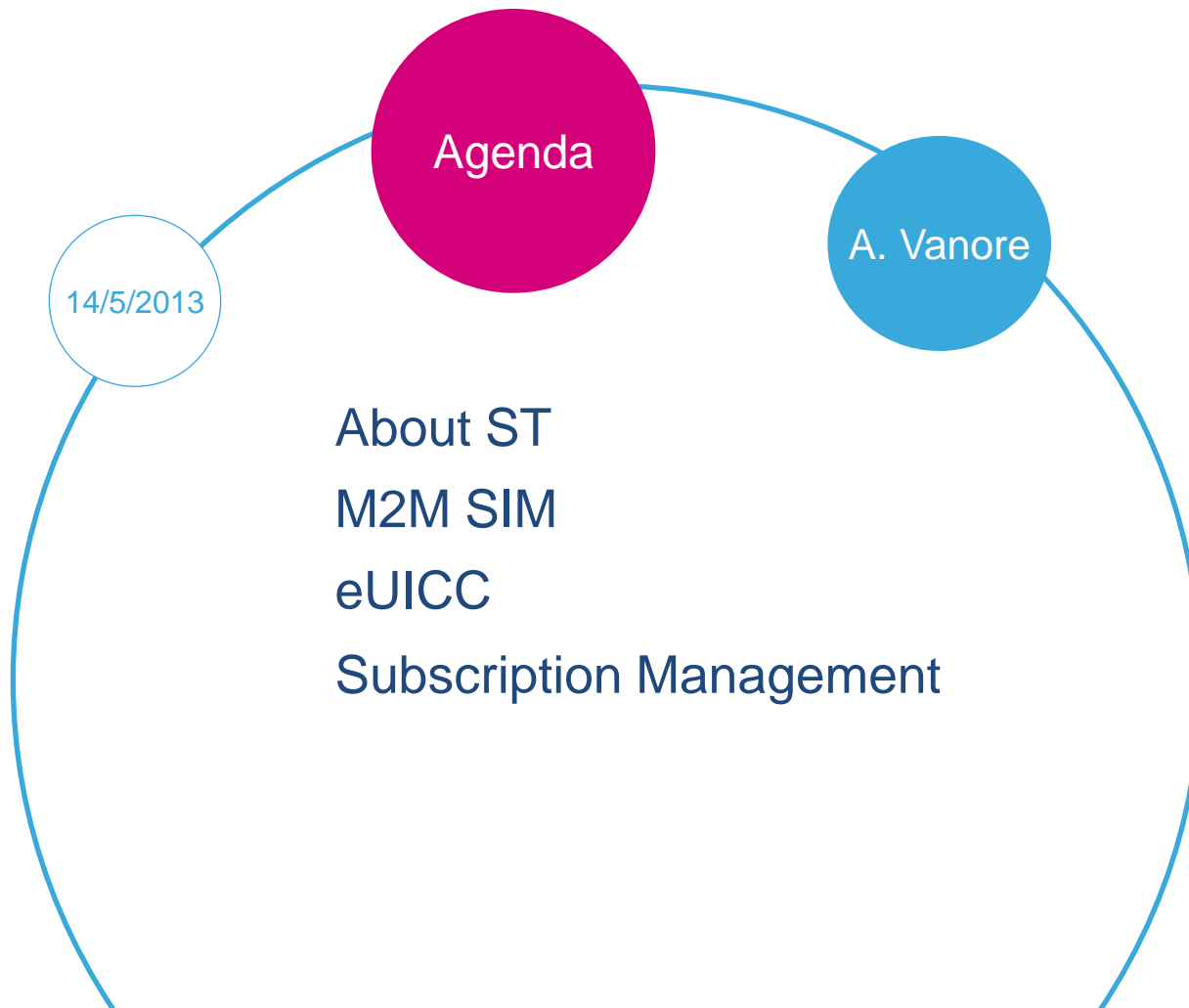




# *Subscription Management*

*a key point for the embedded UICC success in the M2M Connected World*





- A global semiconductor leader
- The largest European semiconductor company
- 2012 revenues of **\$8.49B**<sup>(1)</sup>
- Approx. **48,000** employees worldwide<sup>(1)</sup>
- Approx. **11,500**<sup>(1)</sup> people working in R&D
- **12** manufacturing sites
- Listed on New York Stock Exchange, Euronext Paris and Borsa Italiana, Milano


# ST's new vision and strategy

**OUR VISION**

Everywhere microelectronics make a positive contribution to people's lives, ST is there




  
Smart Power

  
MEMS and Sensors

**OUR 5 GROWTH DRIVERS**

  
Application Processors & Digital Consumer

  
Automotive

  
Microcontrollers

**OUR STRATEGY**

Leadership in Sense & Power, Automotive Products and Embedded Processing Solutions



# Exploiting the Internet of Things

**Connected Machines** will:

- *Reduce* operational costs
- *Limit* churn
- *Improve* service uptake
- *Roll-out* new services



ST enables solutions in all M2M domains

# M2M SIM: Hardware Platforms



- M2M "For Cars":**
- Higher reliability
  - Higher quality
  - AEC-Q100 certification

**ST32-MC**  
ARM Cortex M3

**ARM**



- M2M Industrial Products:**
- Hi Environmental Resistance
  - Extended Temperature range

**ST32-M**  
ARM Cortex M3

**ARM**



Classical range

**ST32**  
ARM Cortex M3

**ARM**

64K

128K

256K

MB

# M2M SIM: ST Operating System

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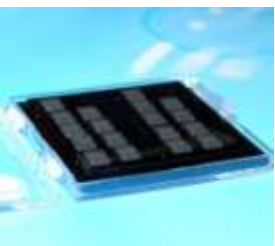
In-house design by STMicroelectronics

Scalable memory sizes for customers data  
(from 64kB minimum up to about 300kB)

OS flexibility as empowered by the Java Card™ Virtual Machine

Adapted to a number of different network carrier technologies  
Enabling secure access to GSM, 3G and LTE networks; easy adaptation to further networks (e.g. CDMA or proprietary)

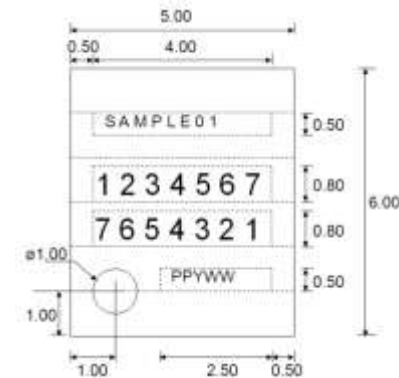
HW / SW measures to improve endurance



# M2M SIM: personalization



- M2M SIM cards, go to the field in a “personalized” state
  - Graphical: a identifier of the subscription is printed on the SIM at manufacturing time
  - Electrical: sensitive information and key material loaded into the SIM at manufacturing time



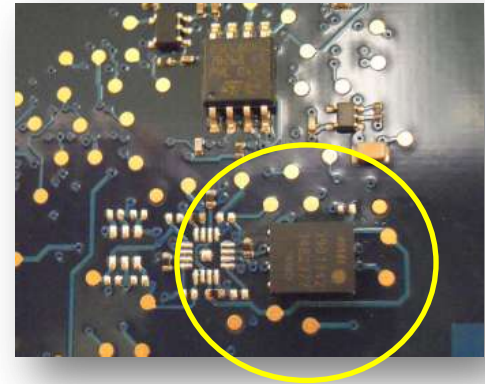
- M2M SIM has some data that make it unique, in order to uniquely identify a subscriber on a mobile network
- M2M SIMs are delivered to HW integrator
- Activation time might impact production lines



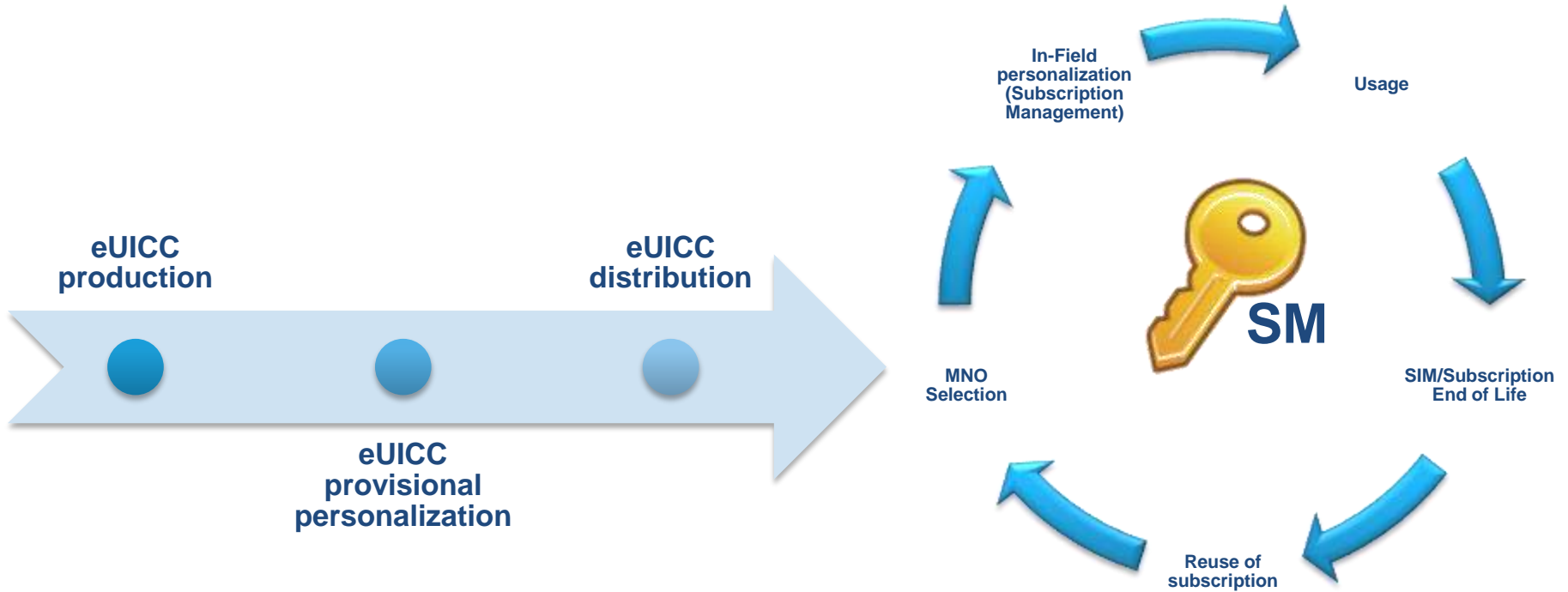


# Embedded Solution needs

- The M2M SIM matches the following requirements:
  - It is installed in a device at manufacture time, replacing the need for a traditional SIM
  - is not intended to be removed or replaced
- The Subscription Management is needed
  - Personalization of the SIM card with the MNO profile later in the supply-chain, including post-sale.
  - The MNO profile can be revised during the lifetime of a device to allow the subscription change.



# eUICC: Life-cycle model

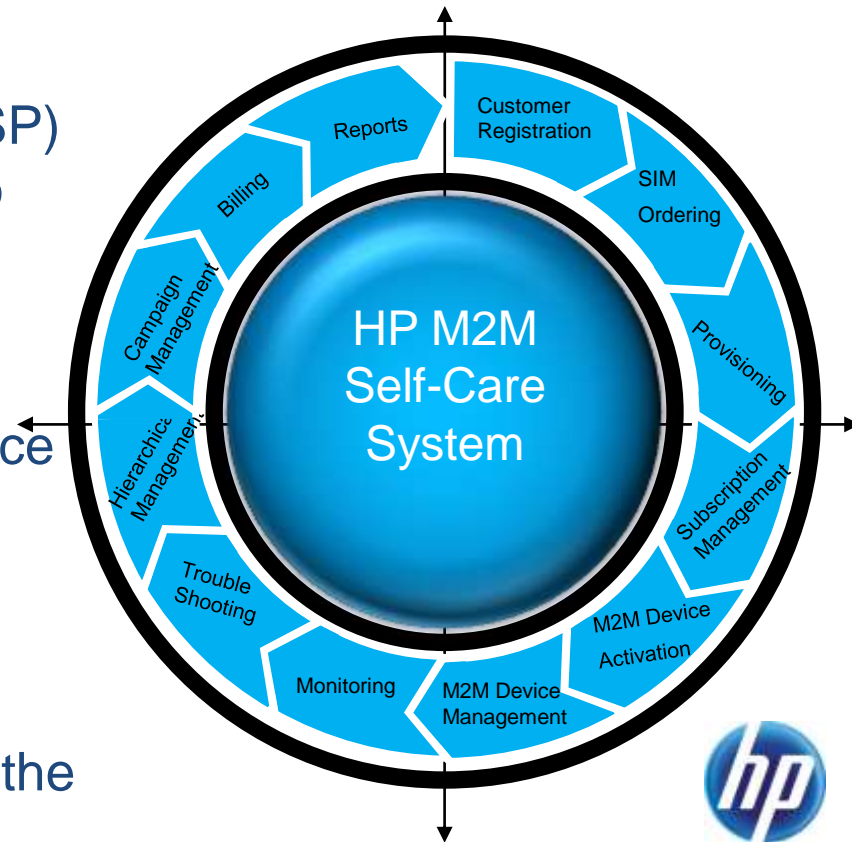


# eUICC: Subscription Manager Overview

- A Subscription Manager (SM) is a system designed to perform remote management and provisioning of these special SIMs already deployed in the field (eUICC).
- Subscription Management is designed to rely on the connectivity provided by a Mobile Network Operator
- Nevertheless the SM architecture works as well with Over The Internet (OTI) connectivity

# Challenges on Subscription Management /1

- M2M means large volumes with reduced ARPU so pressure on OPEX
- Communication Service Providers (CSP) do not have the structure/bandwidth to deal with all of the very different M2M customers (M2M Service Providers)
- Self-Management of SIM/Module/Device and M2M services will results in
  - reduced OPEX for service providers
  - better control for the MSP
- On time Provisioning and activation is the corner stone



# Challenges on Subscription Management /2

- Aggregation and exposure to MSP by CSP of parameters related to SIM cards/Subscription
  - Creation and enforcement of differentiated subscription packages to meet the specific needs of MSP
  - Management of SIM cards as group (not as individual)
  - Managing the SIM status in real-time as required by the M2M service
  - Proactive monitoring of the health of the SIM, Device and the M2M Service
- Efficient management of complex device life cycles for MSP, including subscription management
  - Initial subscription to ensure initial access to the device wherever located
  - Different subscriptions for the different testing and integration phases
  - Different subscriptions during the production lifecycle, depending on location, owner, business agreements

# eUICC: overall advantages

eUICC brings advantages to the ecosystem stakeholders

## SIM Logistic Optimization

- reduced products differentiation

## Easy Supply Chain *management*

- remote and post-sale eUICC activation
- simplified warehouse management
- embedding before activation

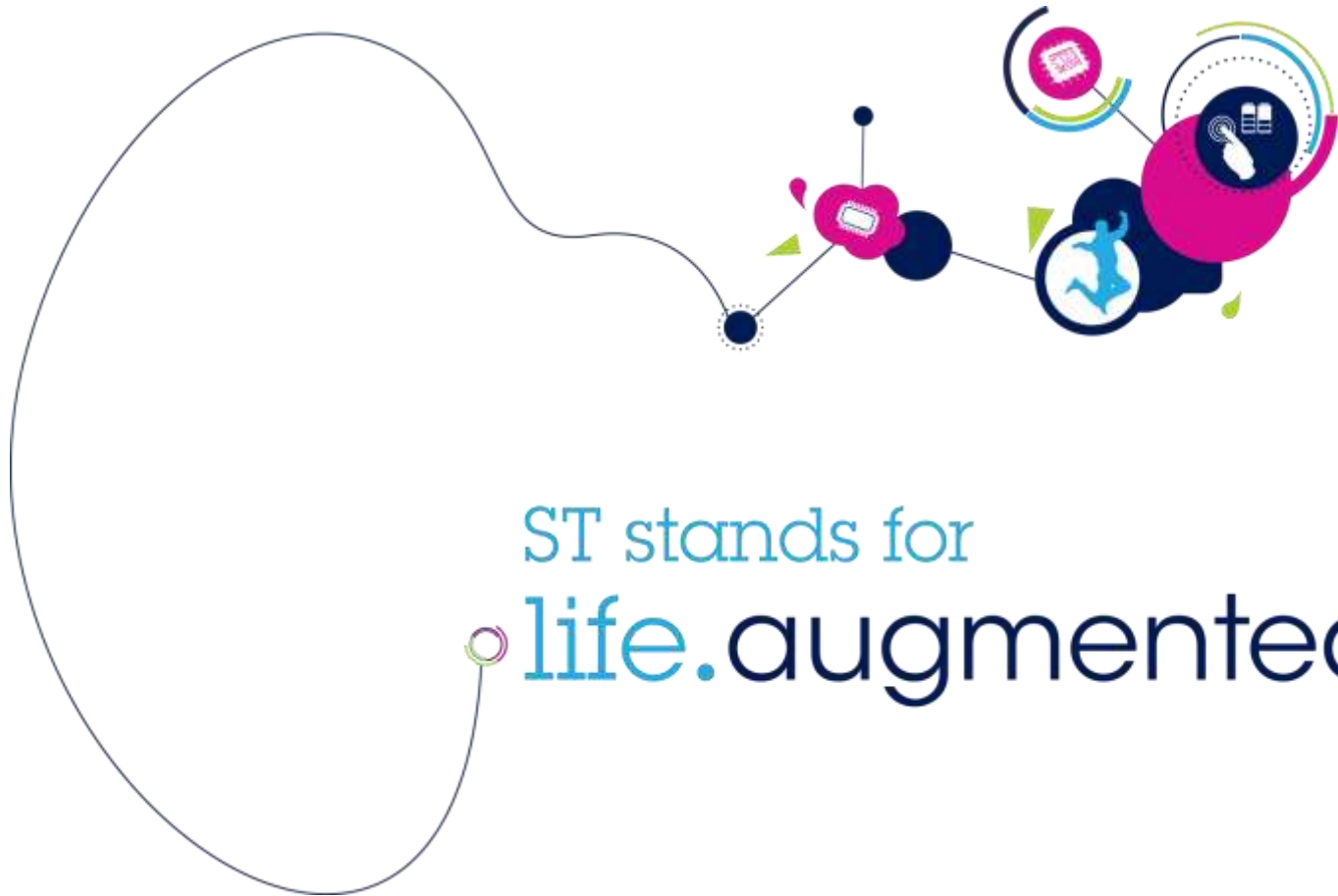
## *New business opportunities* for MNOs

- remarkable growth of the subscribers
- offer as service provider

- ST believes that M2M is a field of sustained growth in the coming years
- ST can be a strategic partner for M2M deployment, thanks to huge expertise in Automotive, Industrial, e-Health, Metering, Consumer Electronics applications
- ST and ST partners can proactively contribute to accelerate M2M market development and services adoption

Thank you!

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ST stands for  
**life.augmented**