

# STMicroelectronics

March 3, 2015  
Barcelona





## Agenda

- 9:30 am ST Mobile & IoT Strategy  
Mobile & IoT Market  
Analog & Sensors  
Microcontrollers & Memories  
Takeaways
- Questions & Answers
- 11:00 am End

## Speakers



Carlo Ferro  
Chief Financial Officer



Francois Guibert  
EVP, President, GC&SA



Benedetto Vigna  
EVP, General Manager, AMS



Claude Dardanne  
EVP, General Manager, MMS

# Forward Looking Statements

*Some of the statements contained in this release that are not historical facts are statements of future expectations and other forward-looking statements (within the meaning of Section 27A of the Securities Act of 1933 or Section 21E of the Securities Exchange Act of 1934, each as amended) that are based on management's current views and assumptions, and are conditioned upon and also involve known and unknown risks and uncertainties that could cause actual results, performance, or events to differ materially from those anticipated by such statements, due to, among other factors:*

- Uncertain macro-economic and industry trends;*
- Customer demand and acceptance for the products which we design, manufacture and sell;*
- Unanticipated events or circumstances, which may either impact our ability to execute the planned reductions in our net operating expenses and / or meet the objectives of our R&D Programs, which benefit from public funding;*
- The loading and the manufacturing performance of our production facilities;*
- The functionalities and performance of our IT systems, which support our critical operational activities including manufacturing, finance and sales;*
- Variations in the foreign exchange markets and, more particularly, the U.S. dollar exchange rate as compared to the Euro and the other major currencies we use for our operations;*
- The impact of intellectual property ("IP") claims by our competitors or other third parties, and our ability to obtain required licenses on reasonable terms and conditions;*
- Restructuring charges and associated cost savings that differ in amount or timing from our estimates;*
- Changes in our overall tax position as a result of changes in tax laws, the outcome of tax audits or changes in international tax treaties which may impact our results of operations as well as our ability to accurately estimate tax credits, benefits, deductions and provisions and to realize deferred tax assets;*
- The outcome of ongoing litigation as well as the impact of any new litigation to which we may become a defendant;*
- Natural events such as severe weather, earthquakes, tsunamis, volcano eruptions or other acts of nature, health risks and epidemics in locations where we, our customers or our suppliers operate;*
- Changes in economic, social, political, or infrastructure conditions in the locations where we, our customers, or our suppliers operate, including as a result of macro-economic or regional events, military conflict, social unrest, or terrorist activities;*
- Availability and costs of raw materials, utilities, third-party manufacturing services, or other supplies required by our operations.*

*Such forward-looking statements are subject to various risks and uncertainties, which may cause actual results and performance of our business to differ materially and adversely from the forward-looking statements. Certain forward-looking statements can be identified by the use of forward looking terminology, such as "believes," "expects," "may," "are expected to," "should," "would be," "seeks" or "anticipates" or similar expressions or the negative thereof or other variations thereof or comparable terminology, or by discussions of strategy, plans or intentions.*

*Some of these risk factors are set forth and are discussed in more detail in "Item 3. Key Information — Risk Factors" included in our Annual Report on Form 20-F for the year ended December 31, 2013, as filed with the SEC on March 5, 2014. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those described in this release as anticipated, believed, or expected. We do not intend, and do not assume any obligation, to update any industry information or forward-looking statements set forth in this release to reflect subsequent events or circumstances*

# Mobile & Internet of Things Strategy

**Carlo Ferro**  
Chief Financial Officer



# Who We Are

5



- A global semiconductor leader
- The largest European semiconductor company
- 2014 revenues of **\$7.40B**
- Approximately **43,600** employees worldwide
- Approximately **8,700** people working in R&D
- 11 manufacturing sites
- Listed on New York Stock Exchange, Euronext Paris and Borsa Italiana, Milano



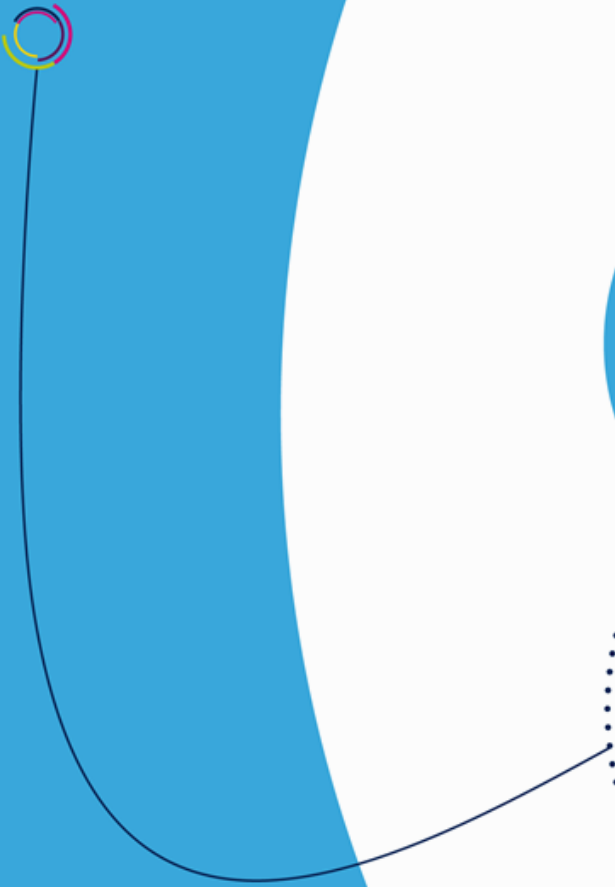
# ST's Vision and Strategy

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

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

**OUR 5 GROWTH DRIVERS**

- MEMS and Sensors
- Smart Power
- Automotive
- Microcontrollers
- Digital Consumer & ASICs



# ST at MWC: One Year Later

## Product & Technology Leadership

### New flagship products based on Proprietary leading-edge technologies

- 32-bit MCU for general purpose & automotive
- Microphone & Motion MEMS
- Touchscreen controllers
- UHD products for Set-top Box
- Low voltage power MOSFET & IGBT

## Customers

### Distribution

- 32% of revenues in 4Q14 vs. 27% in 4Q13
- Design-wins in 2014 up 50%
- Success driven by MCU, automotive, industrial, power and discrete products
- Serving IoT applications

### OEM

- Top 10 customers are diversified and important players in their industry

## Operational and Financial Performance

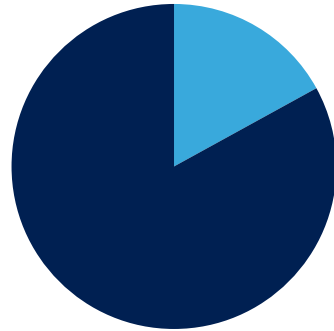
### 2014: Year of progress

- Net income: \$128M vs. net loss of \$500M in 2013
- Free cash flow: \$197M vs. negative \$179M in 2013
- Operating margin before restructuring and impairment: 4.0% and 3.2% in 3Q14 and 4Q14, respectively
- Dividend (LTM): \$0.40 per share
- Net cash balance: \$546M

Macroeconomy improving and favorable currency effect

# ST Wireless Business in 2014

## 2014 (Ex ST-Ericsson)



**Wireless  
About \$1 Billion**

Key revenue contributors:

- MEMS and sensors
- Microcontrollers
- Power management
- Imaging

## Customers

**Selling to the top Smartphone OEMs\***

- Apple\*\*
- Blackberry
- Coolpad
- HTC
- Huawei
- Lenovo
- LG
- Motorola
- Microsoft\*\*
- Samsung\*\*
- Sony
- TCL
- Xiaomi
- ZTE

**and many others...**

\*Listed alphabetically

\*\*ST top ten OEM customer





# Product Highlights 2014

## MEMS & Sensors



Motion Sensors



Environmental Sensors

9 Billion MEMS shipped to date

Strong growth in microphone & touch-screen controller sales

In over 60 new phone models from 12 Chinese customers



FingerTip Touch Sensor



MEMS mirrors

## Power Management



Wireless charging



Energy harvesting



Power conversion



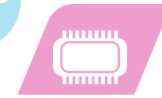
Thin film batteries

Continued Leadership in AMOLED power supply ICs

Shipping Field-Effect Rectifier Diodes to leading mobile phone charger manufacturers

STM32 general purpose MCU sales grew over 50%  
Major success in Sensor Hub applications  
Ramp-up dedicated EEPROM with key mobile customers

## Microcontrollers & NFC



Dynamic NFC tags

EEPROM

## Connectivity, Audio, Interfaces and RF



Audio processors  
Audio amplifiers



Antenna tuning



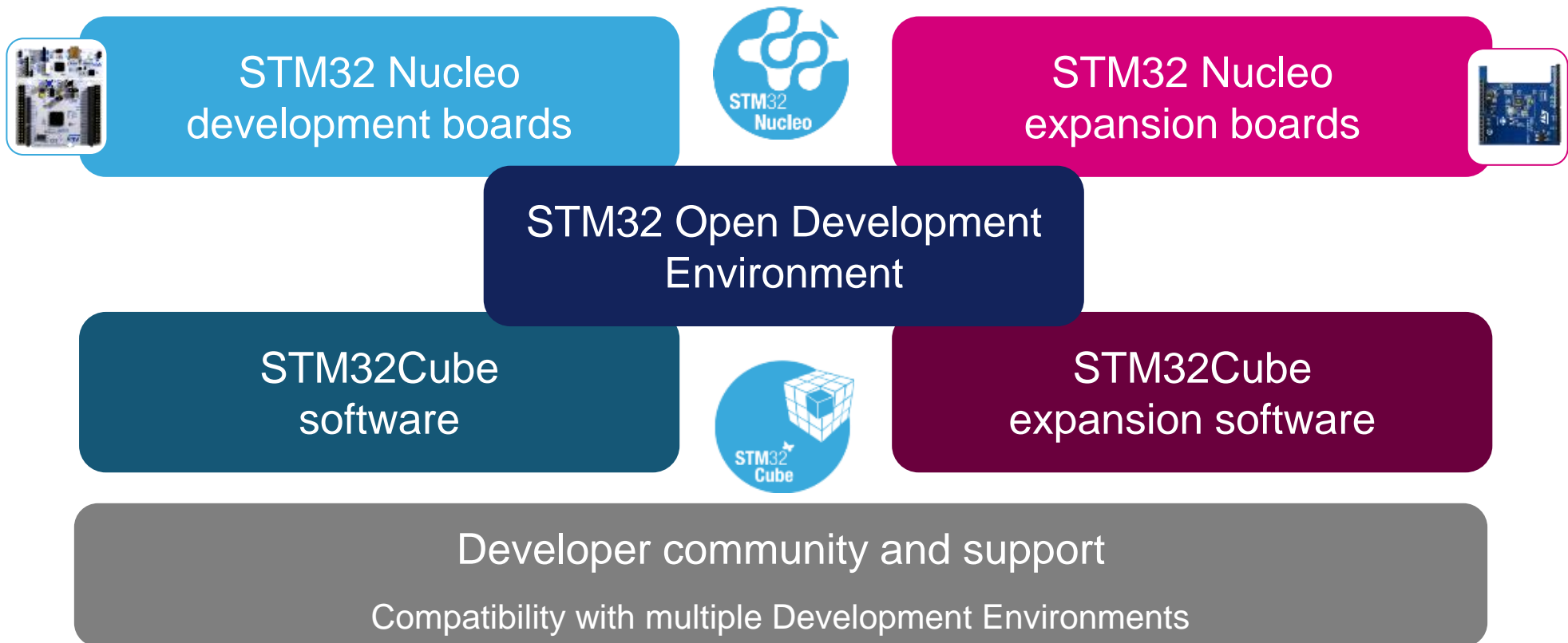
Ultra-low power connectivity

Ramped protection devices at mobile customers  
Strong traction with our Bluetooth Smart solution for wearable

# Selling the ST Portfolio together

The **STM32 Open Development Environment** is an flexible, easy and affordable way to develop innovative applications using ST components

Over 80K boards shipped in 2014



# ST Mobile & IoT Strategy

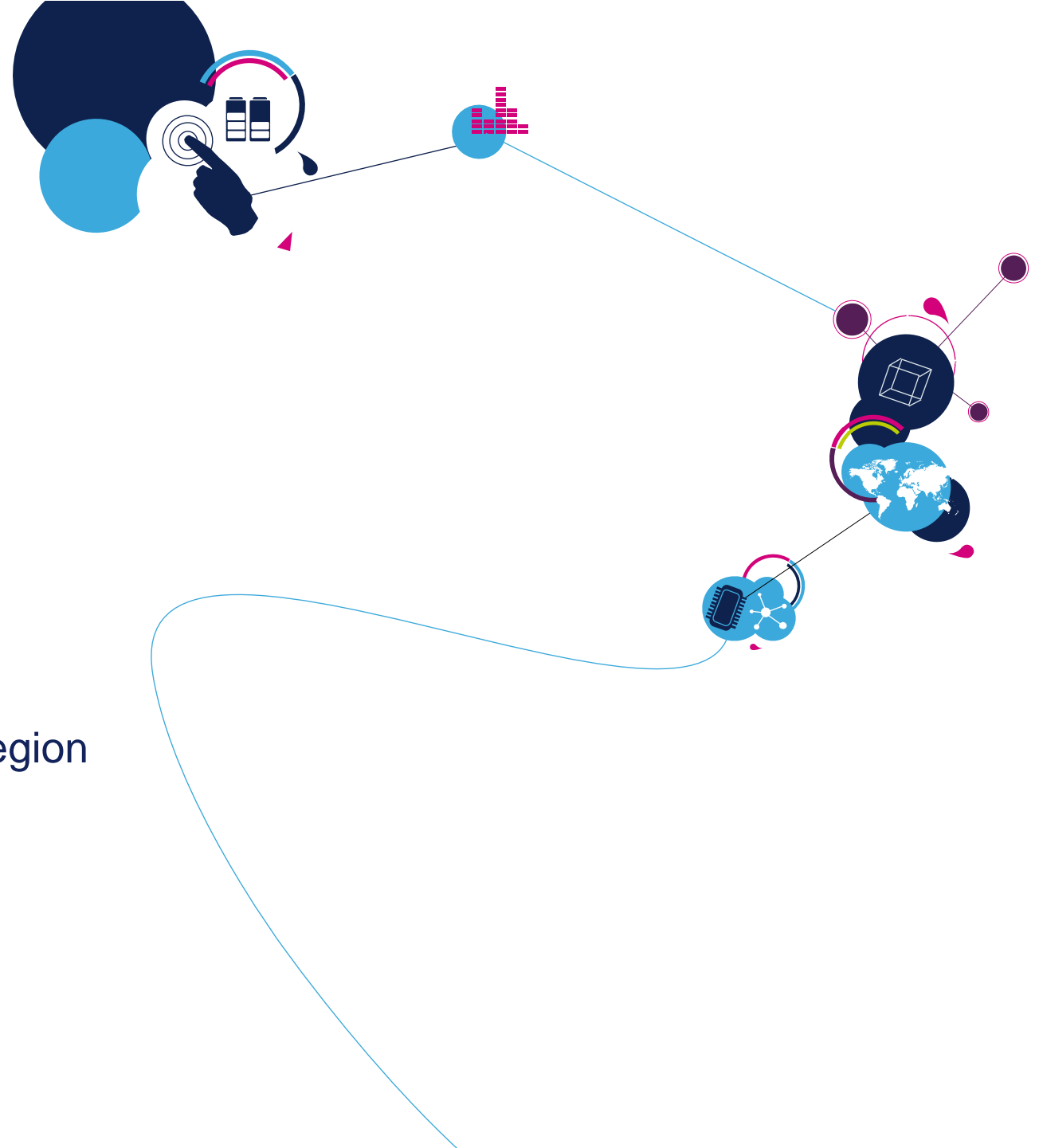
12

- Leverage one of the strongest and most complete product and technology portfolio in Mobile & IoT
- Continue to innovate with large Mobile OEMs worldwide introducing new products and functionalities
- Support expansion of our customers beyond smartphones and tablets
- Provide the building blocks to enable billions of new “augmented things” to connect to the Internet
- Focus on Mass Market proliferation and tools to enable easy access to key technologies



# Mobile & IoT Market

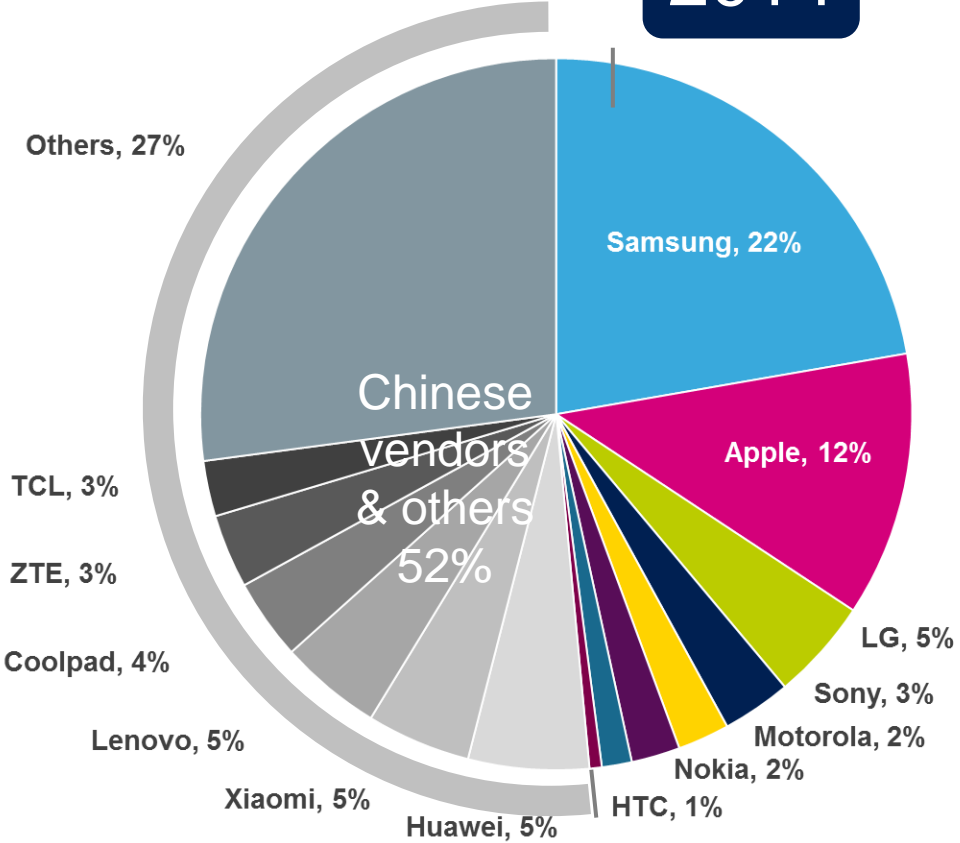
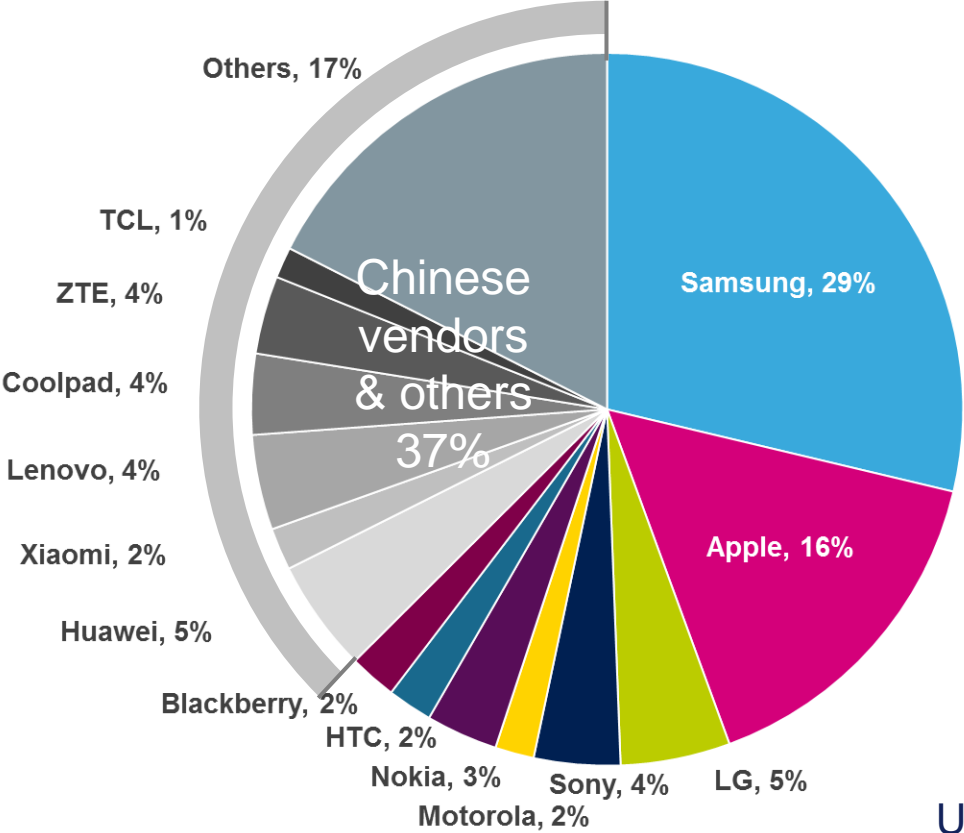
**Francois Guibert**  
Executive Vice President  
President, Greater China and South Asia Region



# Smartphone Market Evolution

2013

2014



Unit Shipments

# Success at the largest OEMs



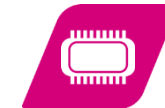
**Motion Sensors**



**MEMS microphones**



**FingerTip Touch Sensor**



**Low-power microcontrollers**



**Environmental Sensors**



**Ranging & ambient light sensor**



**Protection & EMI-filtering devices**



**Power conversion**

# Keys to Success in the China Market

## Dynamic Mobile Market

- > 50% of WW smartphones produced by Chinese OEM/ODM/IDH in 2014 from a few percent 5 years ago
- ~600M smartphones in 2014 and expected to grow more than 10% annually in coming years
- ST SAM ~\$15B for smartphones in China in 2014



## Broad Portfolio of Products and Solutions



## ST's Strong Presence

- \$2.4 Billion revenue
- 10 Sales offices
- 1 Back-End Plant
- R&D and IC Design
- Sales & Marketing
- >5,700 Employees



# Winning in Greater China Smartphones in 2014



HUAWEI



Ascend Honor 4  
Honor 4X



Ascend G7



Ascend GX1



Ascend Mate7



Ascend P7



Honor X1



Honor 6



Honor 3X



Honor 3C



G730



C199



Xiaomi



Redmi Note  
W/C and LTE



Mi3  
W/C and T



Mi4



Mi PAD



htc



One W8



One E8 vogue



One M8  
M8 Lifestyle



One M8 Eye



Butterfly 2



19 models



ZTE中兴



V5 max



星星2号  
Star 2



青漾2  
Qingyang 2



Z max



小鲜  
Xiaoxian



Blade Vec 4G



Q802C



Nubia X6



清漾  
Qingyang



2 models



Xplay3S



Xshot



X5



Vibe Z2



Vibe X2 pro



Vibe X2



B8080-F



S810t



Elife E7



IUNI U2



MX4 Pro



ONEPLUS 1



大神 F1

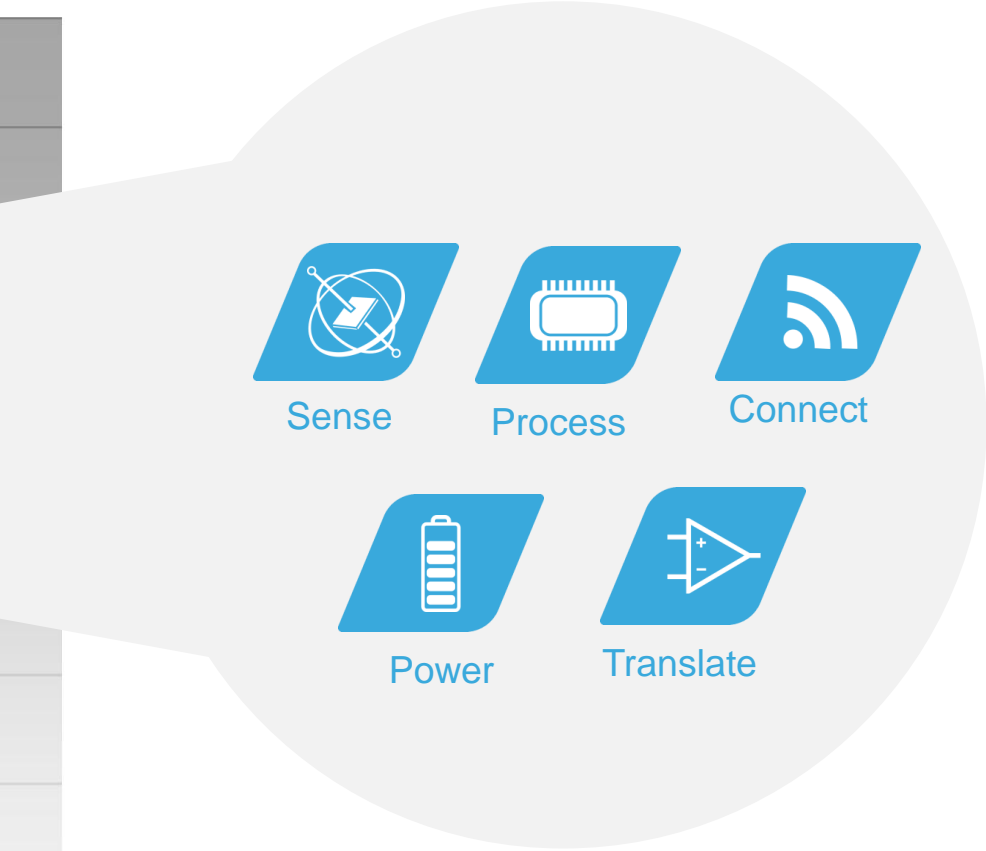
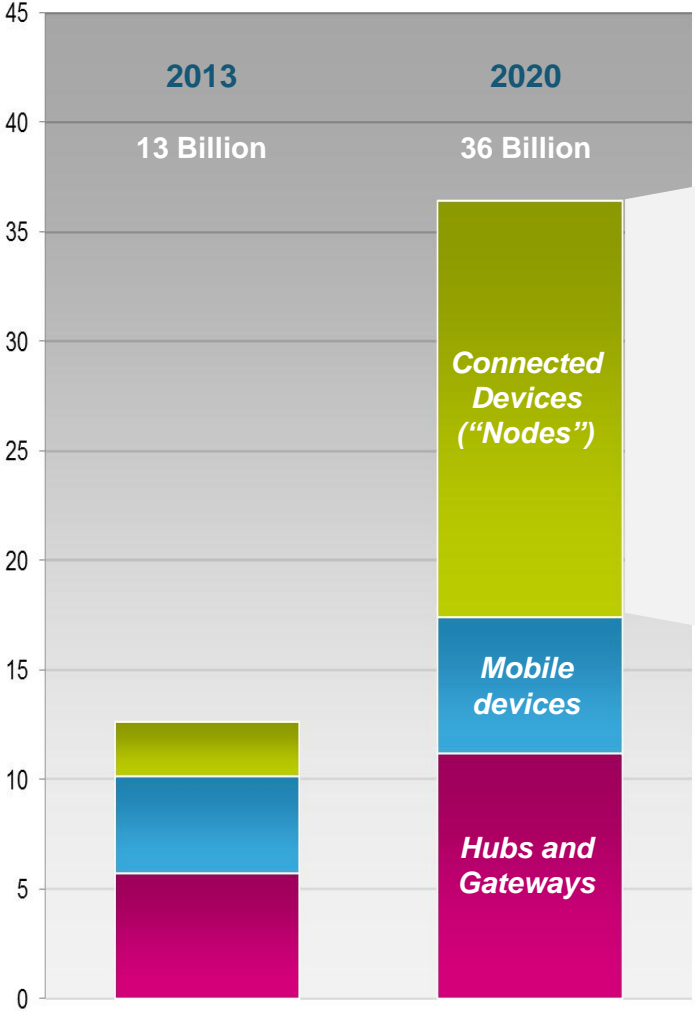


Find7



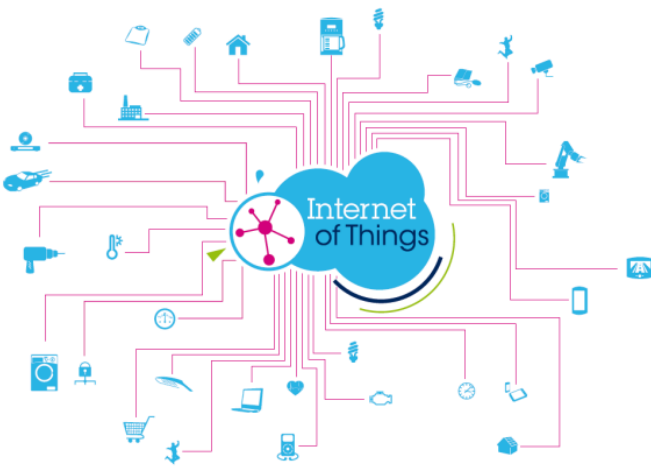
# IoT – Huge Opportunity






Billion Units  
Installed  
Base



Augmented Things

# ST in the Internet of Things



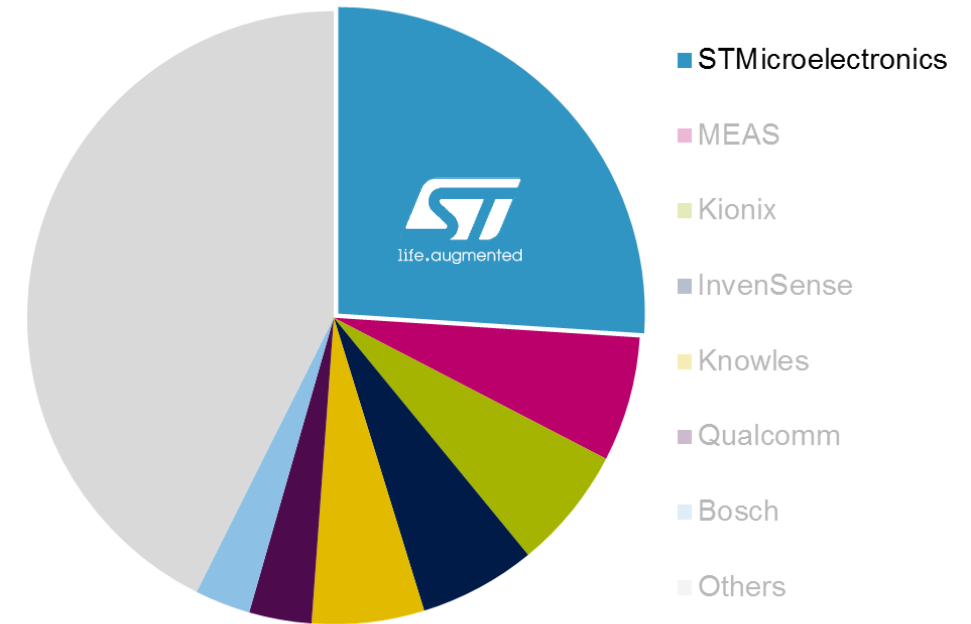
-  Sensors
-  ULP Microcontrollers & Memories
-  Ultra-low power (ULP) connectivity
-  Analog and mixed signal components
-  Power and energy management



# ST Winning in Wearables



### MEMS & Sensors Revenue Share for Wearables – 2013\*



\* IHS MEMS & Sensors for Wearables - 2014

IDC forecasts the Wearables Market will grow to be a **\$48B** market by 2019



# Greater China Customer Engagement

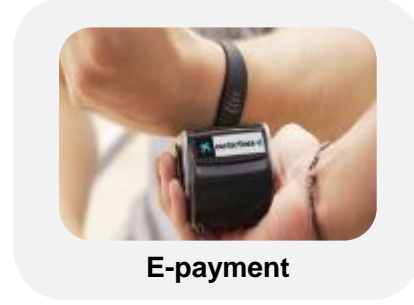
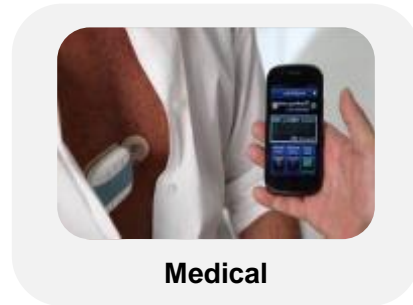
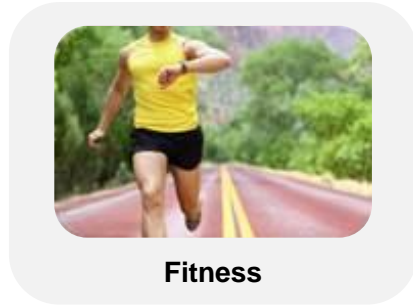
## Wearables



Engaged on wearables with more than 50 customers in Greater China



# ST Solutions for Wearables

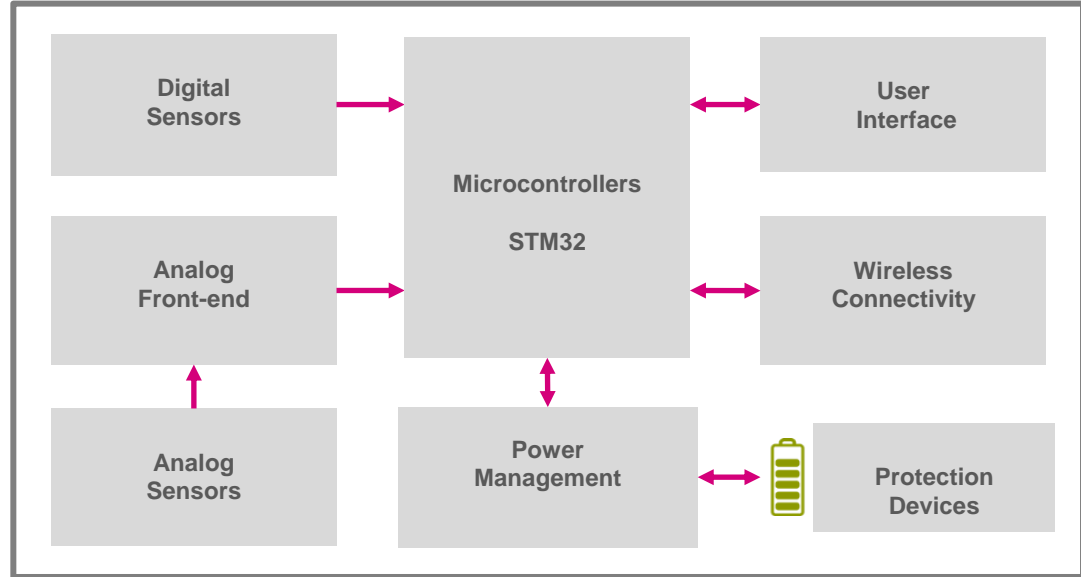


**Algorithms**  
Optical Heart Rate, ECG, Activity Tracking & Recognition, Fall Detection, Gesture, Sleep Monitoring etc.

Neural Networks

Security

Heart / Blood Monitoring



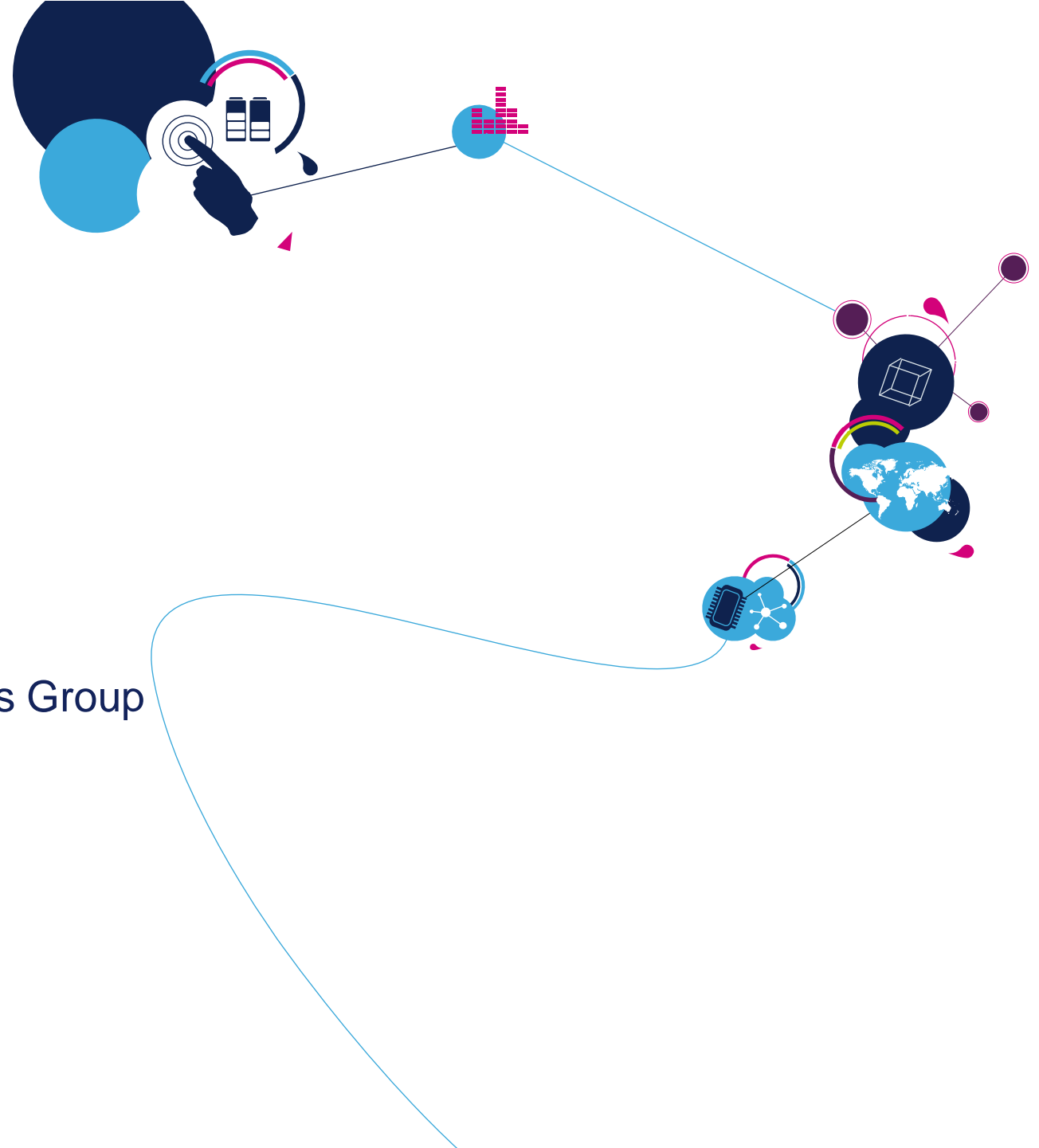
Voice Enhancement & Recognition

Energy storage

Energy Harvesting

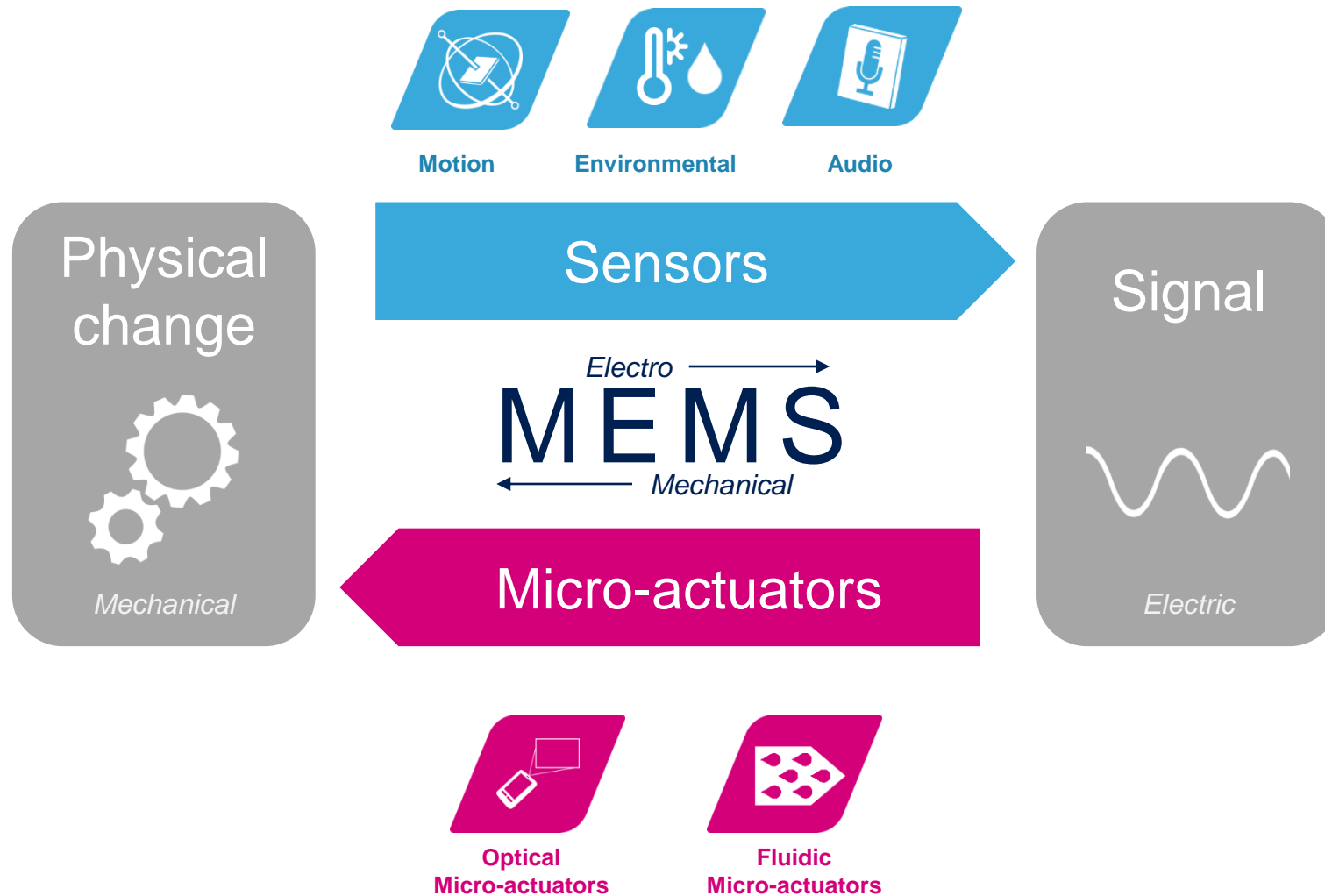
# Analog & Sensors

**Benedetto Vigna**  
Executive Vice President  
General Manager, Analog, MEMS & Sensors Group



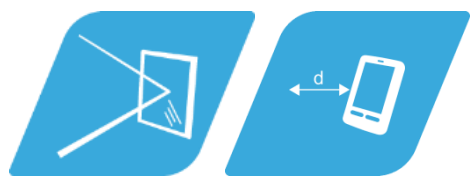


# MEMS for Sensing and Actuating



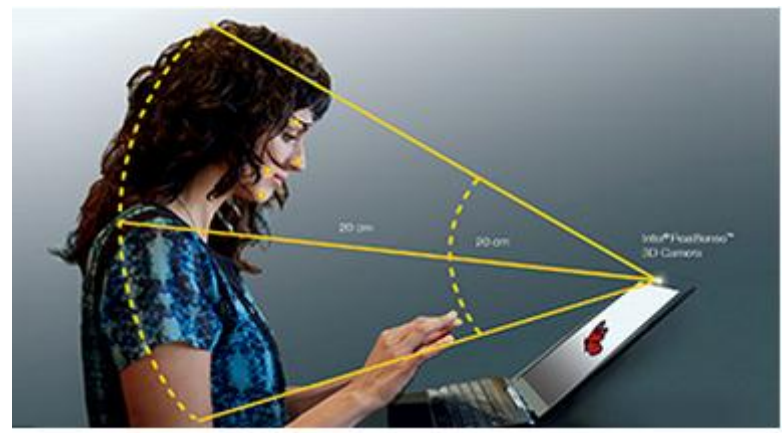
# Micro-mirrors & FlightSense™

## Innovation with industry leaders



### Micro-Mirrors

- Micro-mirrors projection technology
- Smaller, lighter, more flexible and robust than competing technologies
- Use for classical projection or new applications



Enabling Intel's Perceptual Computing initiatives



- Unique ranging technology based on time of flight measurement
- Fast and accurate distance measurement
- Independent of target reflectance

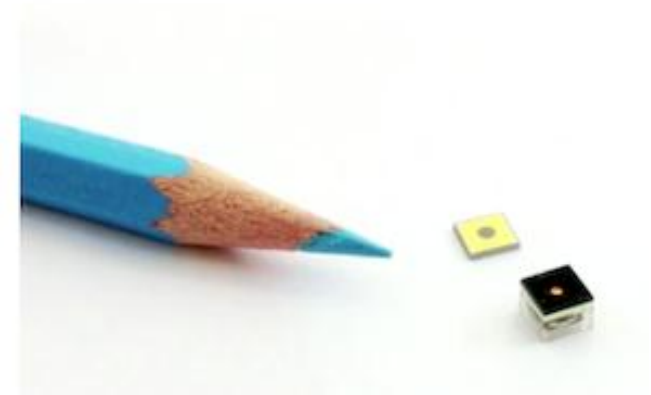




# Thin-film Piezo MEMS Actuators

## New Technologies for the next Wave

- Camera Autofocus
  - Lower power consumption and higher speed versus Voice-Coil Motor (VCM) based solution
  - Announced commercialization of Thin-film Piezo Partnership with innovative lens maker PoLight for autofocus actuator in smart phones
- High-speed inkjet print head for commercial and industrial applications
  - Enables printing with high-viscosity materials
  - Adaptable to different printing materials

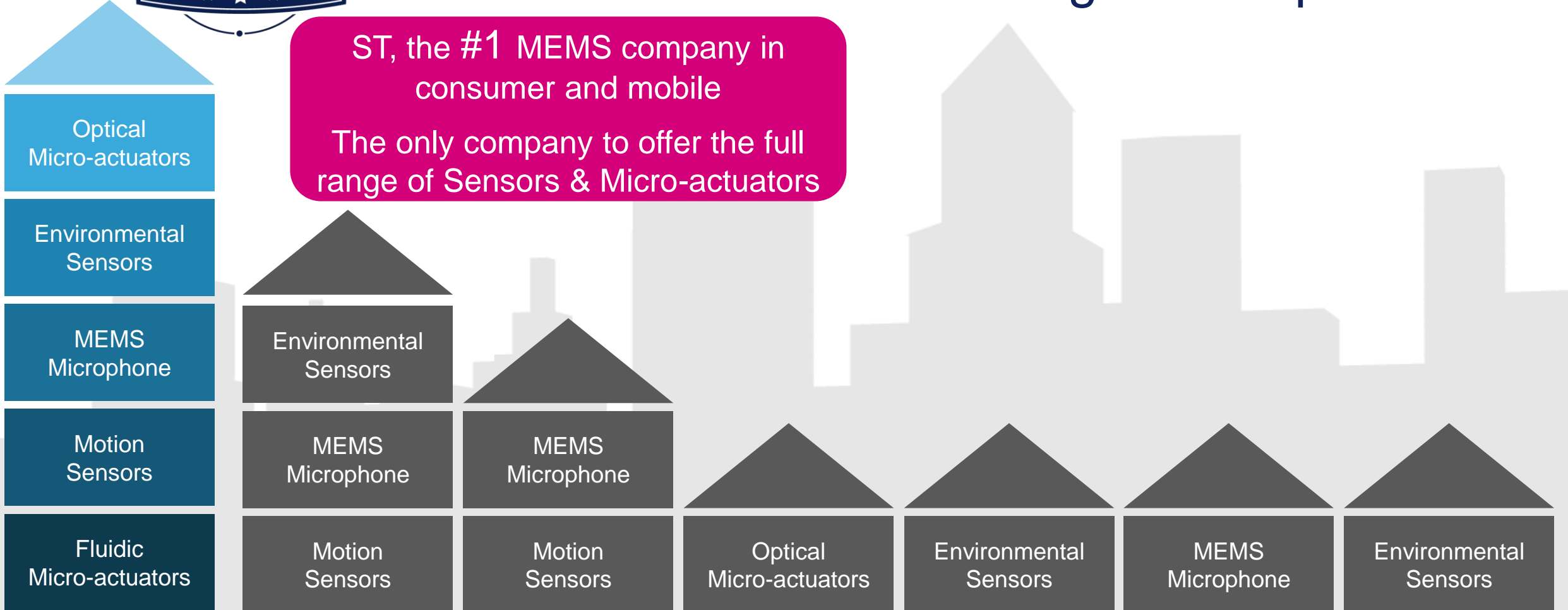




# MEMS Competitive Landscape

## ST offering vs Competition

ST, the #1 MEMS company in consumer and mobile  
The only company to offer the full range of Sensors & Micro-actuators



# Motion MEMS Continued Leadership



Accelerometer



6-Axis Inertial module



Optical Image Stabilization



Gyroscope



6-Axis eCompass



Magnetometer



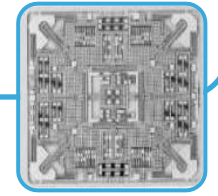
9-Axis Inertial module

5 Billion motion MEMS shipped to date

## Highlights

Renewal of product portfolio/continuing to lead innovation

- Launched new industry leading 6-axis sensor
- 3<sup>rd</sup> generation Gyroscope for **Optical Image Stabilization** <5mm<sup>2</sup>, thickness <0.75mm



iNEMO Ultra - LSM6DS3  
The 6X Ultra



Ultra low power

Ultra small size

Ultra performing

Ultra capable

Ultra smart

Ultra scalable

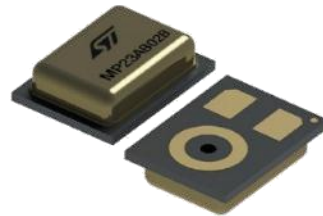


# Microphones & Touchscreen Gained Momentum in 2014

30

## Microphones

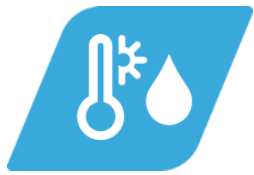
- Over **260 million** MEMS microphones shipped in 2014
  - More than doubled 2013 shipments
- Proliferation of high performance analog and digital microphones designs across the customer base



## FingerTip™ Touchscreen Controller



- Strong growth with touchscreen controllers
- High-profile wins beating out competition in some of the most demanding smartphone applications
- FingerTip well positioned to address wearable, security and active pen applications



# Environmental Sensors

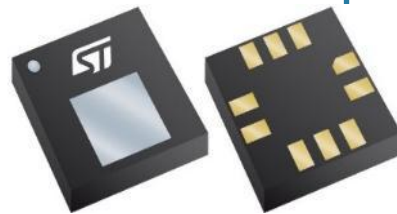
## Broadening the Portfolio

31



Pressure

- Around **65 million** Pressure sensors shipped in 2014
- Introduced world's smallest pressure sensor in tiny package (2x2x0.76mm)
- Applications
  - Altimeter
  - Indoor navigation
  - Weather station



UV

- Introduced and ramped the world's first sensor to provide a direct digital output of the Ultraviolet Index (UVI)



Humidity

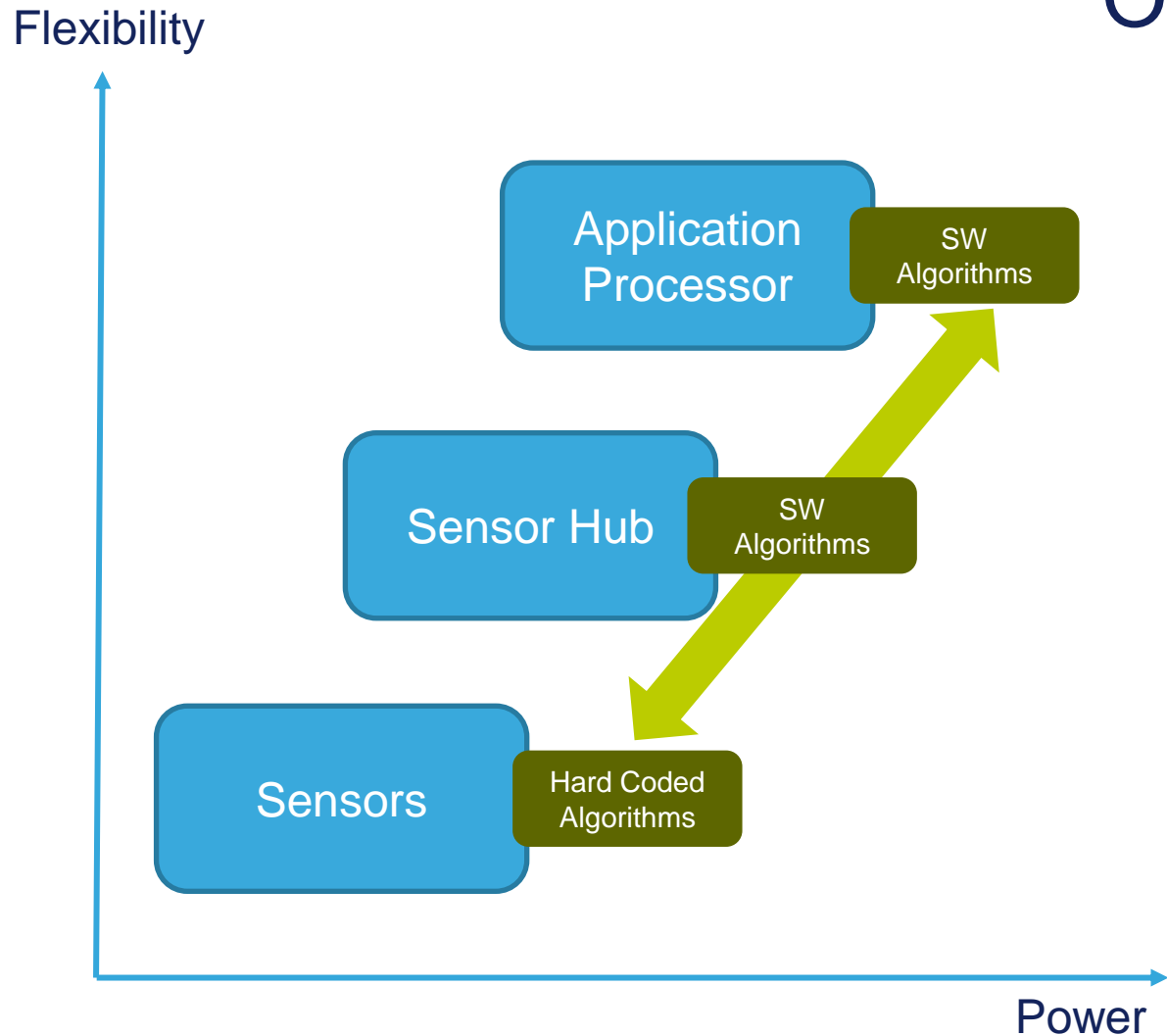
Temperature

- Combined temperature & humidity sensor in production

# Achieving lowest power Sensor Systems

## Optimized for every Architecture

32



Always-on sensor systems  
must be ultra low power

- Hardware and Algorithms need to be individually optimized for ultra-low power
- Optimization at system level requires design that can be adapted to various architectures
- Building on ST's Open Software for sensors
- Possibility to optimize between latency, accuracy and power depending on system requirements
- Allowing easy addition of new sensor types to an existing system or upgrade of algorithm capabilities





# Analog and RF for IoT

ST is investing in analog and RF and has significant potential for growth

## Ultra-low power connectivity



### BlueNRG

- Introduced an upgrade to our energy-efficient Bluetooth Smart network processor running the Bluetooth 4.1 protocol stack

### SPIRIT

- Very low power RF transceiver for Sub-GHz license-free ISM and SRD bands

### Wi-Fi

- b/g/n solution available

Pre-certified modules to ease customer development

## Analog

### Operational amplifiers

Large portfolio of highly power-efficient op amp in tiny packages

### Current sensors

High accuracy current measurement for contactless battery chargers

### Audio amplifiers

High-efficiency Class D and G amplifiers for headsets and speakers

### Ultra-sound Pulsers

Highly-integrated ultrasound pulser ICs with four or eight independent channels.

### Analog switches

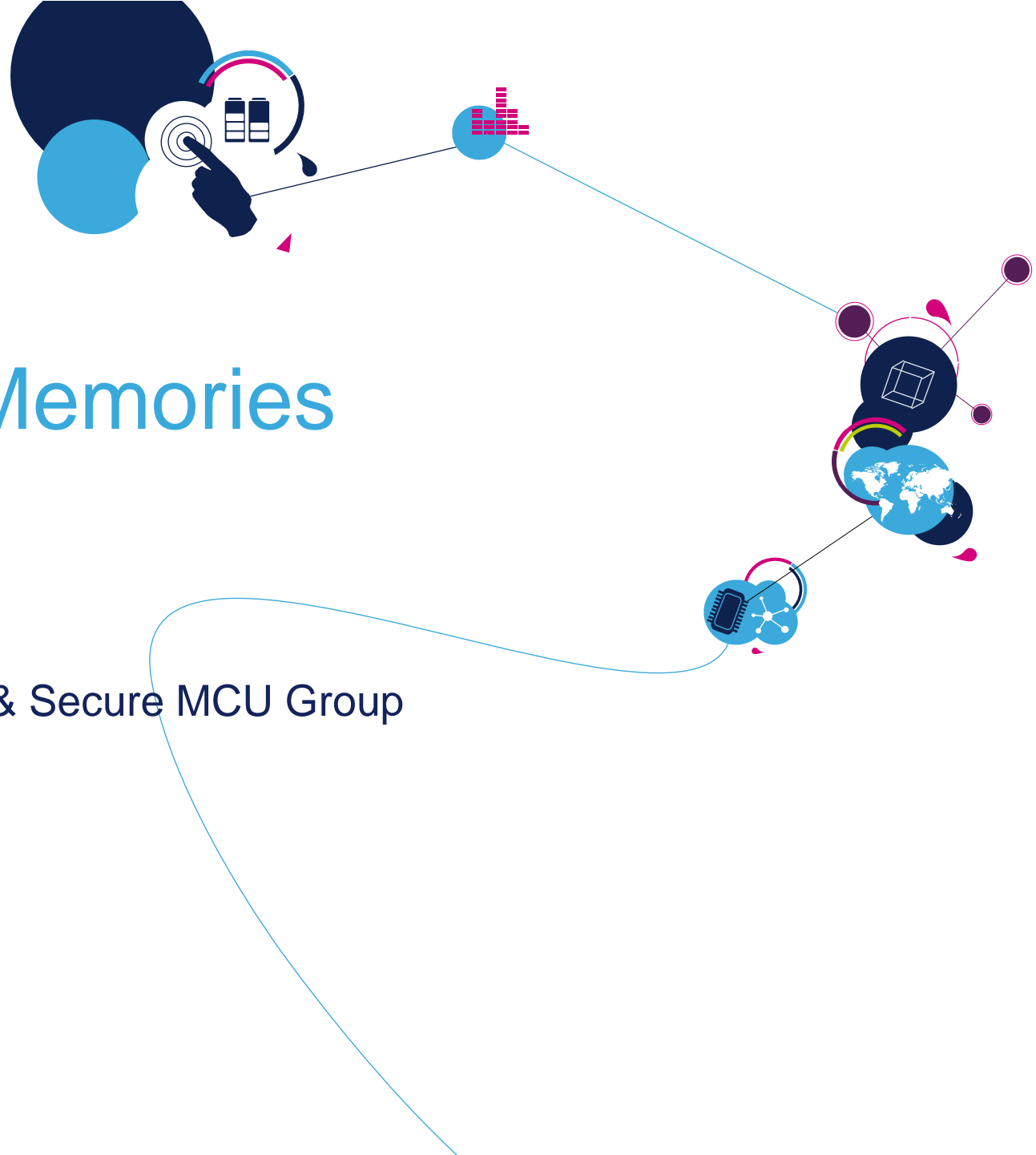
Compact single and dual switches for audio and USB

### Battery gas gauges

Low-power gas gauge providing very accurate battery life indicators

### Smart reset

Customizable products providing safe and convenient reset



# Microcontrollers and Memories

**Claude Dardanne**


Executive Vice President

General Manager, Microcontroller, Memory & Secure MCU Group




# Microcontrollers and Memories

#4	General Purpose MCU
#3	Secure MCU
#1	EEPROM Memories




## General Purpose Microcontrollers

Leadership on 32-bit architecture based on Cortex-M platform



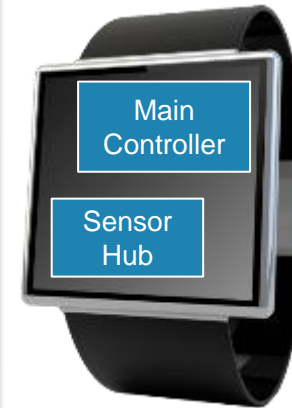
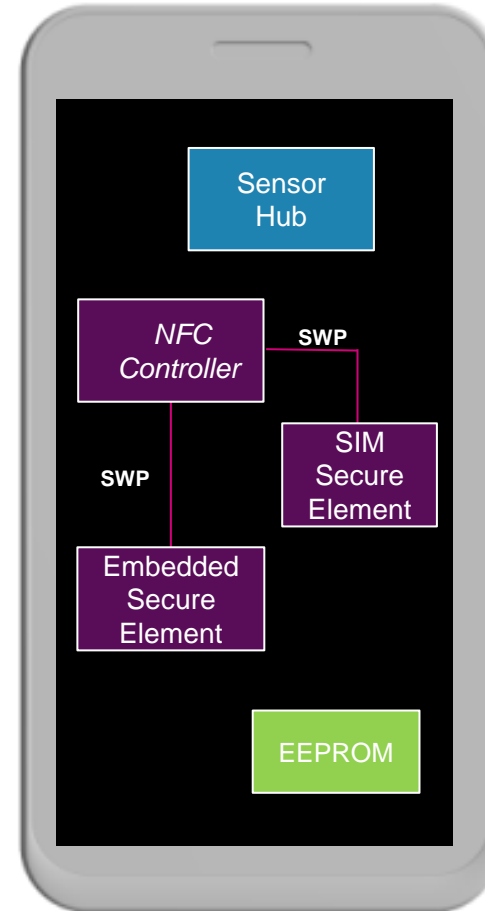
## Secure MCU

Leadership on 32-bit architecture based on Secure Cortex- SCxxx platform



## Memories

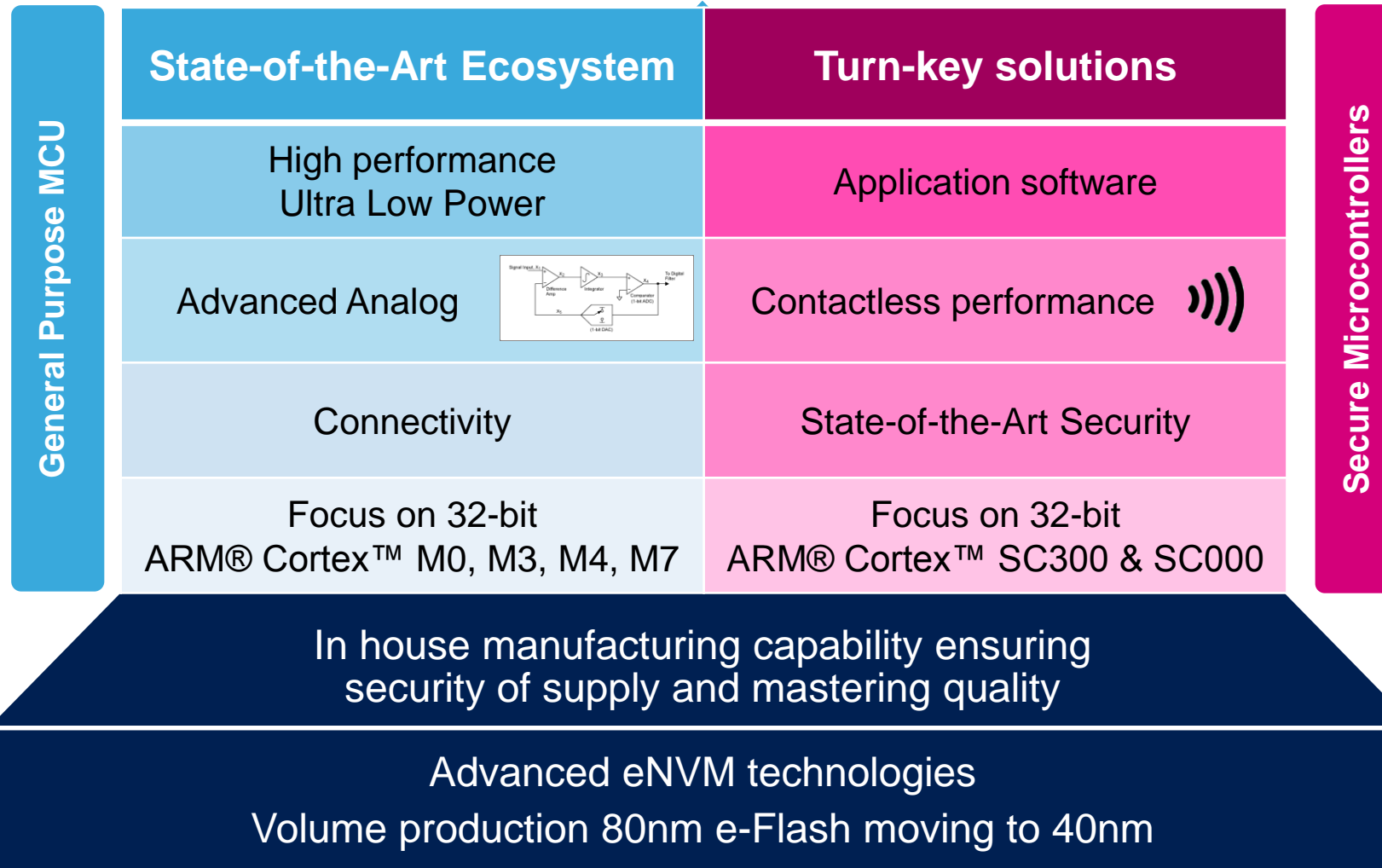
Leadership on RF EEPROM  
Near Field Communication compliant



Dynamic NFC / RFID tags

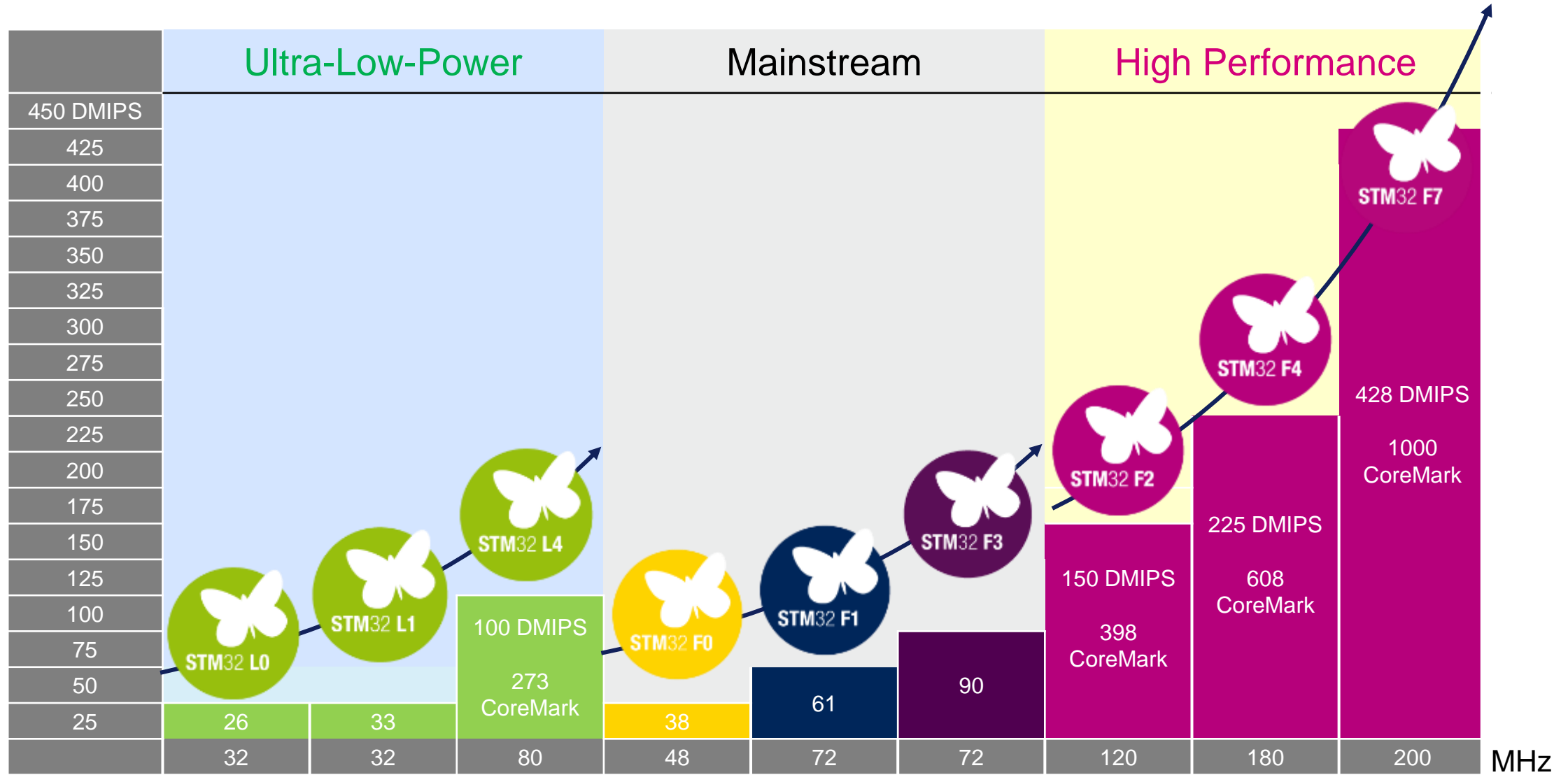


# Microcontroller Enablers





# STM32-Broadest 32-bit Portfolio

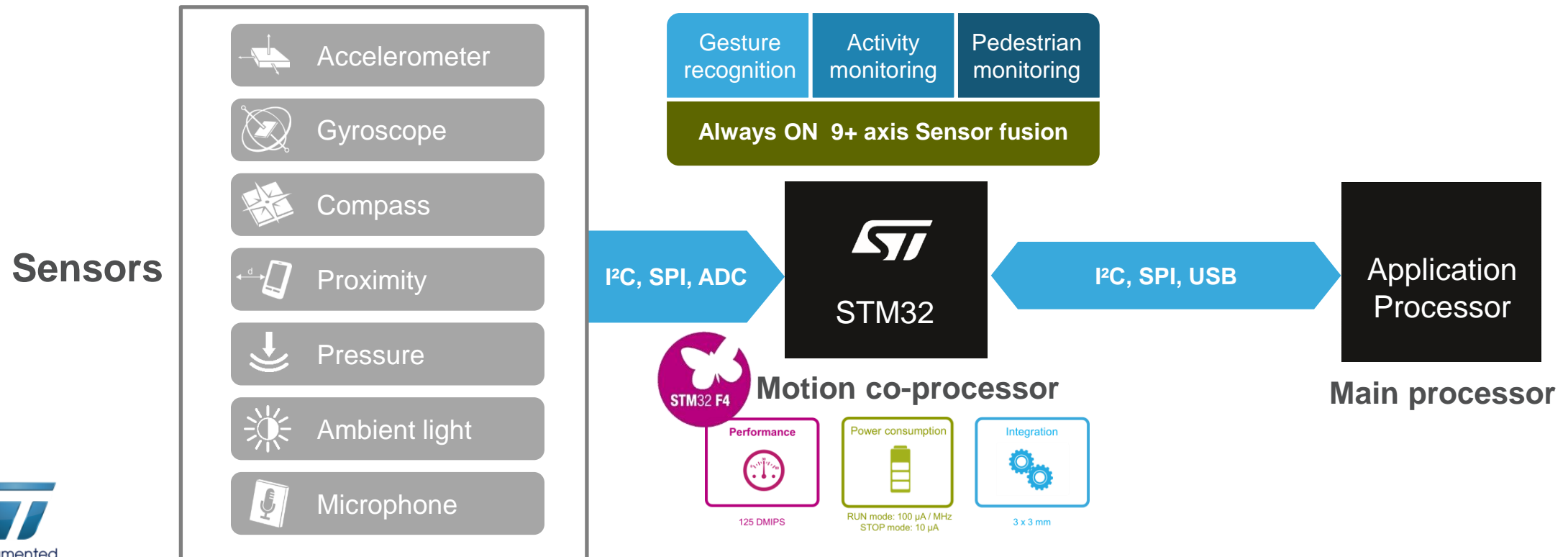




# Sensor Hub Solutions

## Extending Success of STM32 family

- Major success in smartphones and accessories
- Enable “always on” application use cases improving dramatically battery life vs running on application processor
- STM32F401 computing power allows to host gestures monitoring and pedestrian indoor navigation



# STM32 Success in IoT

## Thanks to broadest 32-bit portfolio



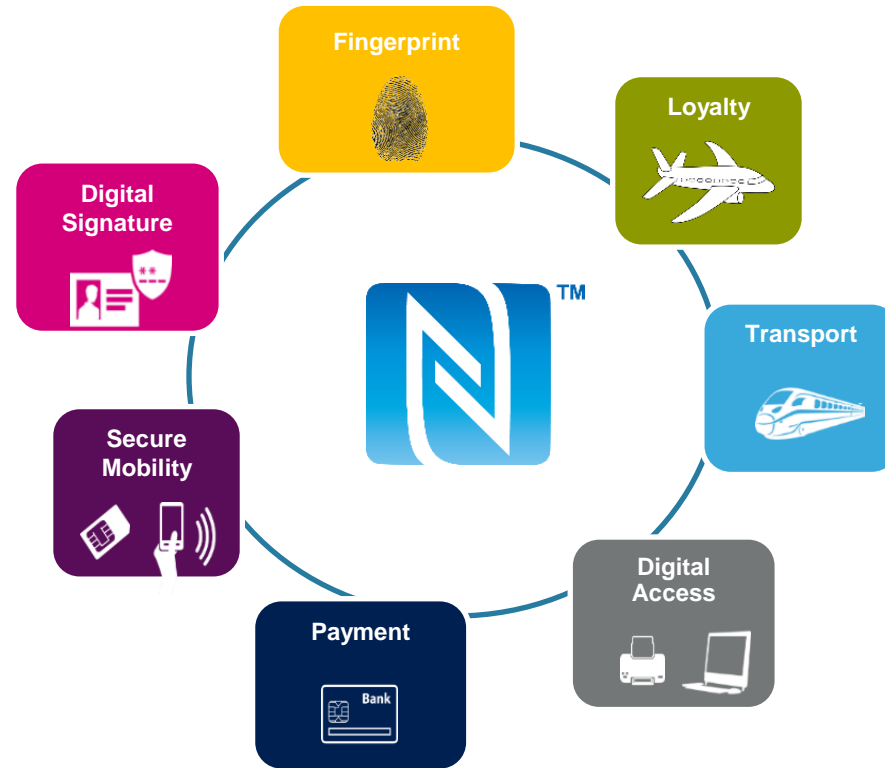
Market's smallest wrist heart monitor





Short Range RF  
connectivity  
Technology

Enabling a multitude  
of use cases  
requiring highest  
level of security



13.56 MHz RF

Key Pillars of ST  
Secure Microcontroller Solutions

Security






# NFC & Mobile Security

## Most Complete Product Portfolio

**NFC SIM Cards ICs**


Smartphones



**ST33**

**NFC Controllers**

Mobile Devices




Wearables

**ST21NFC**

**NFC Controller + e-SE SiP**

Mobile Devices



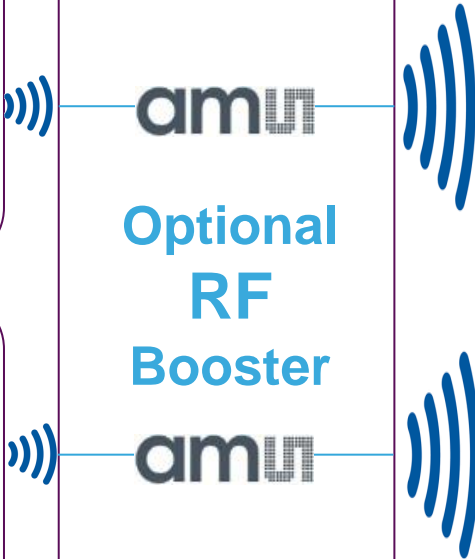
Wearables

**ST54**

**amun**

Optional RF Booster

**amun**



# Mobile Payment & Security

## Unique Turnkey solution - Standard NFC



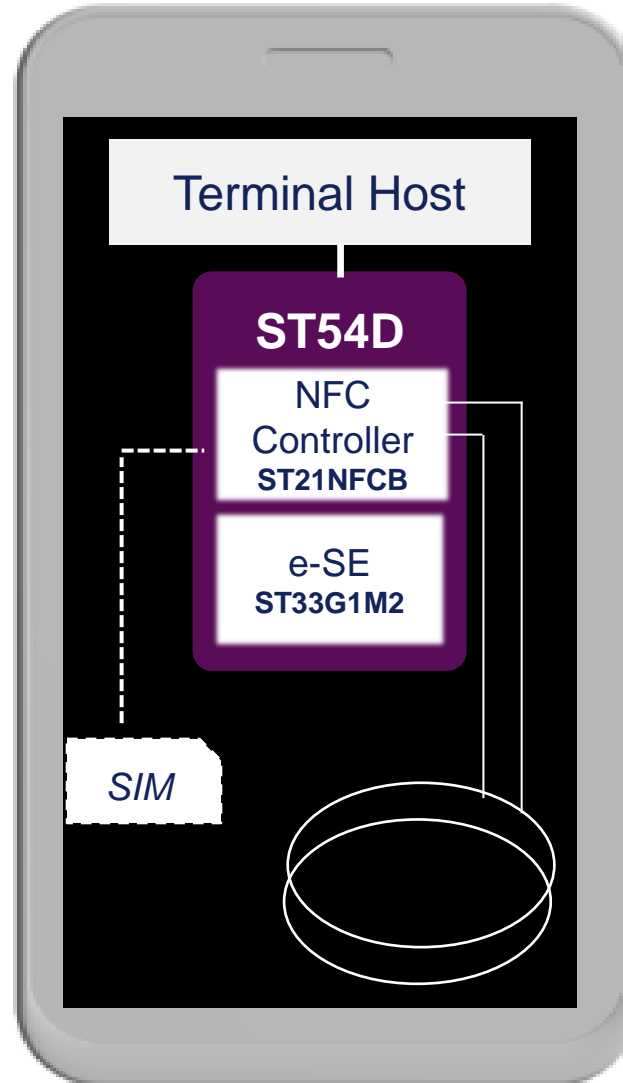
### ST54D

#### NFC Controller ST21NFCB

- Reduced BOM & Footprint
- Track record in certification

#### Secure Element ST33

- Leadership Position
- >400Mu ST33 Delivered
- Best in class H/W performances
- Secure Java OS



- Ideal for plastic / glass back cover phones
- Compliant with metallic back cover (specific antenna)
- Best-in-class NFC performance
- Fully qualified & certified

# Mobile Payment & Security

## Unique Turnkey solution - Boosted RF



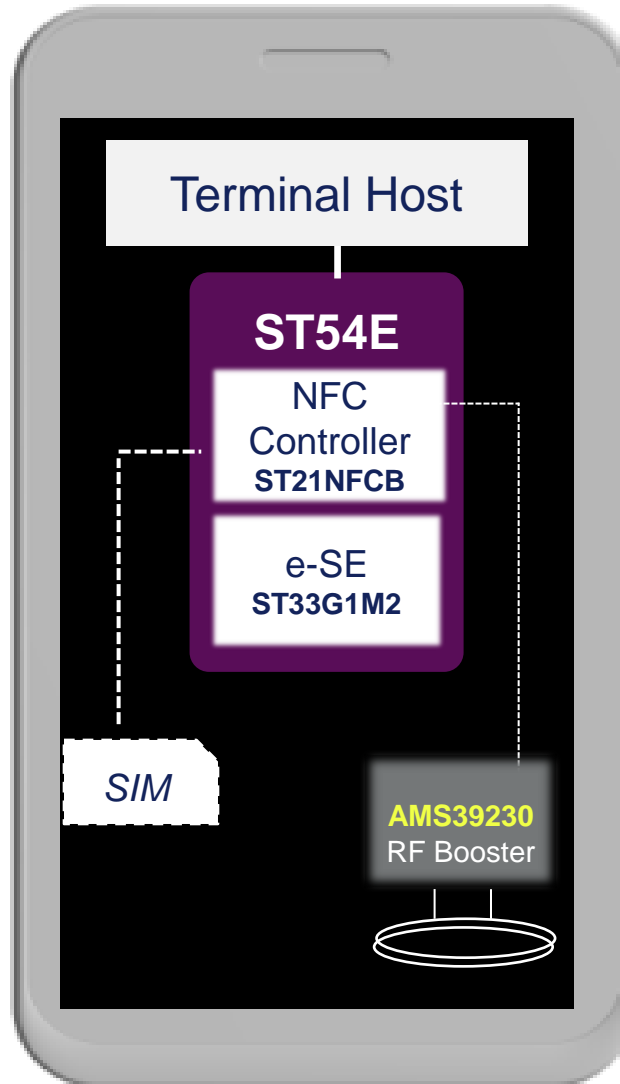
### ST54E

#### NFC Controller ST21NFCB

- Reduced BOM & Footprint
- Track record in certification

#### Secure Element ST33

- Leadership Position
- >400Mu ST33 Delivered
- Best in class H/W performance
- Secure Java OS



- Optimized solution for Smartphones with metallic back-cover and/or very tiny antenna
- Unmatched RF performance
- Ideal for wearables
- Demo on ST and ams booths



### AMS39230

#### RF Booster

- Active Load Modulation
- Suitable for very tiny antenna
- Boosted RF performance



# Solution for Wearable



## ST54E

### NFC Controller ST21NFCB

- Reduced BOM & Footprint
- Track record in certification

### Secure Element ST33

- Leadership Position
- >400Mu ST33 Delivered
- Best in class H/W performance
- Secure Java OS



- Optimized Mobile Payment solution for Wearables with tiny antenna thanks to ams booster
- ST54E connected to STM32 acting as host



## AMS39230

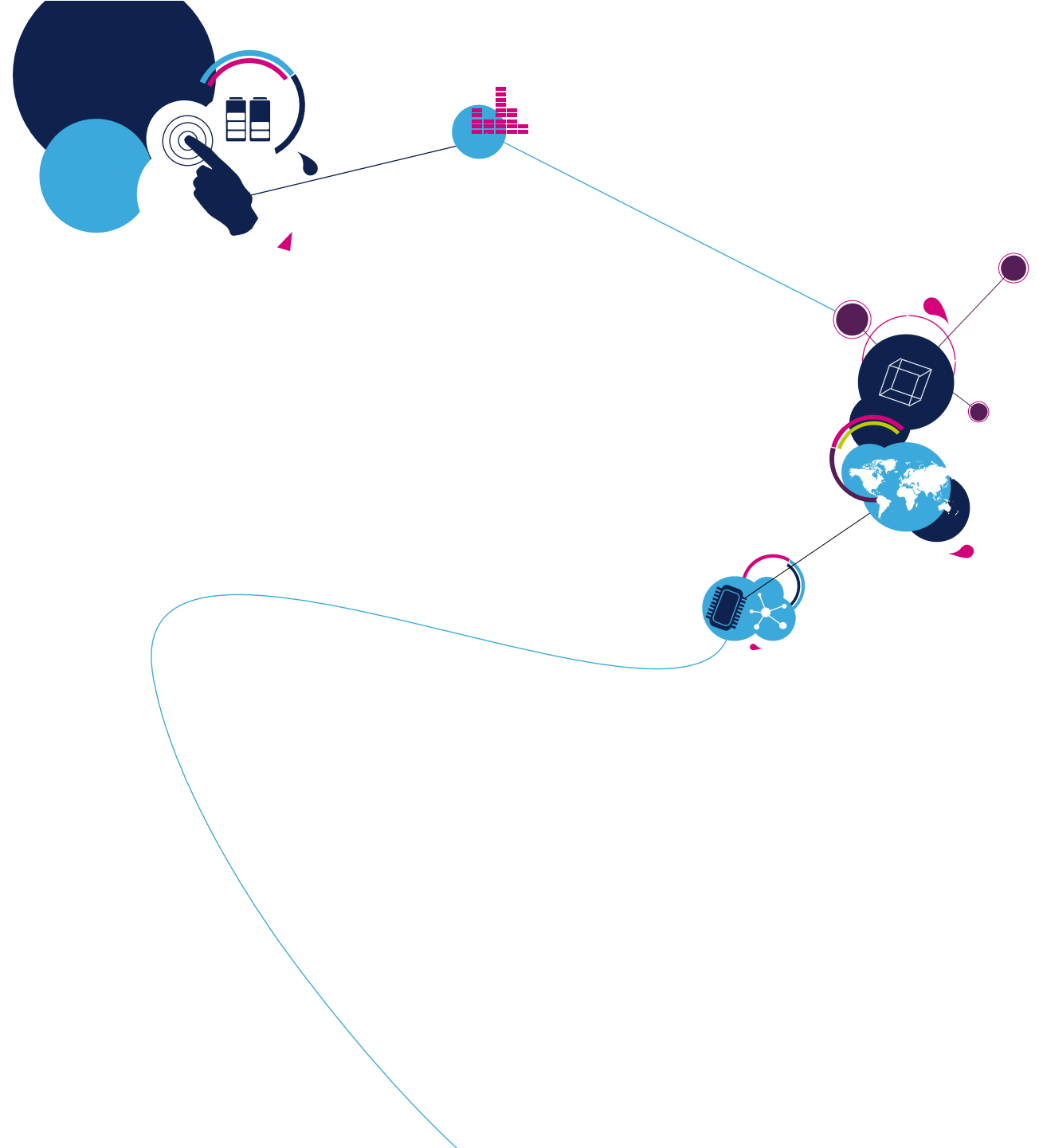
### RF Booster

- Active Load Modulation
- Suitable for very tiny antenna
- Boosted RF performance



# Takeaways

**Carlo Ferro**  
Chief Financial Officer



## ST is strongly positioned on the mobile market

- ST is a leader in many of the mobile applications served
- Working with all key players in mobile
- Innovating to bring new functionality and enable expansion beyond mobile



## The Internet of Things is a great fit for ST's portfolio

- Complete product portfolio including sensors, microcontrollers, NFC tags, connectivity & smart energy management
- The breadth and depth of the portfolio enable us to engage with leading players and innovators
- We are working to address an ever broader customer base and make technology available in an easy and flexible way





# Visit our Stand & experience our Products



Hall 7 – Stands 7B140 and 7B146

## MEMS & Sensors



Motion Sensors



Environmental Sensors



Ranging & ambient light sensor



MEMS microphones

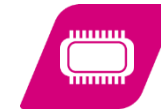


FingerTip Touch Sensor



MEMS mirrors

## Microcontrollers & NFC



Low-power microcontrollers



Secure microcontrollers



Dynamic NFC tags



EEPROM

## Power Management



AMOLED power supply



Backlight driver



Power conversion



Wireless charging



Energy harvesting



Thin film batteries

## Connectivity, Audio, Interfaces and RF



Audio processors  
Audio amplifiers



Antenna tuning



Ultra-low power connectivity



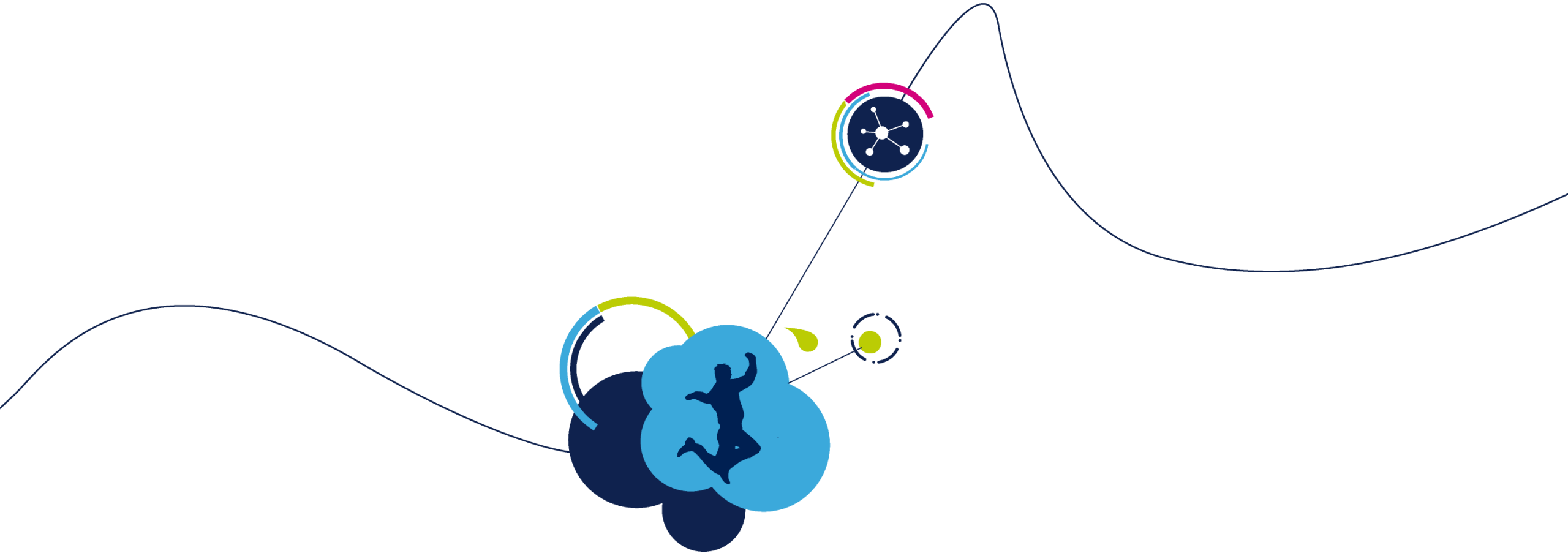
RF-SOI for Front End Modules



High-speed interfaces



Protection & EMI-filtering devices



# Q&A