



2nd EU-Japan Satellite Positioning Public-Private Roundtable

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Tokyo | 8th March 2017







COMMITTED WITH INNOVATION
CONNECTED TO THE FUTURE



Corporate Presentation

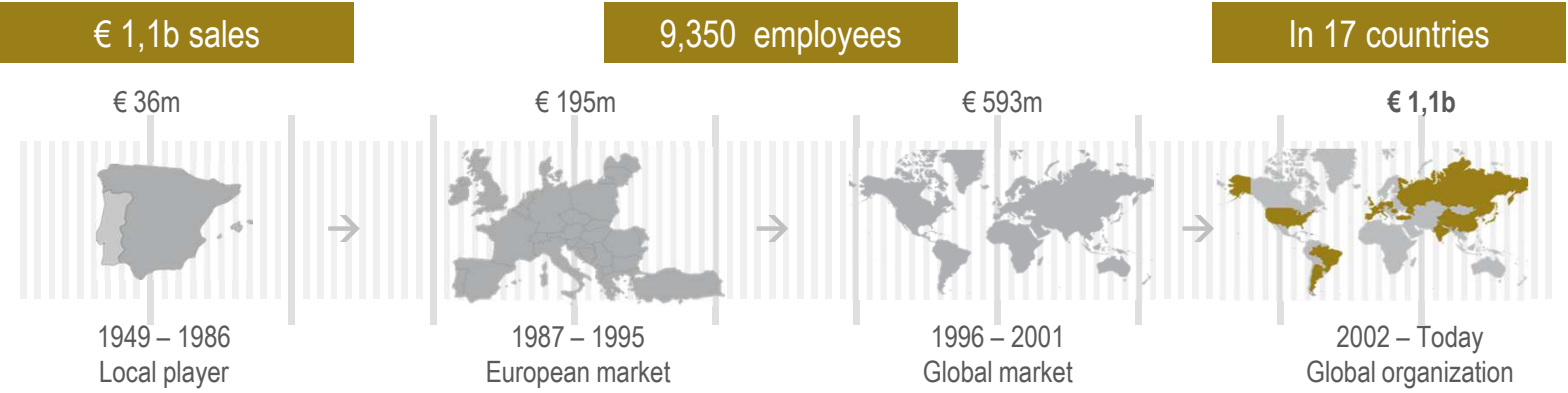
2017

Group Highlights

-  Automotive Tier 1
-  Established in 1949 in Barcelona
-  Global partners with Panasonic
-  Selling since decades to all major OEMs
-  Global company
-  Strong R&D component: >6.5% of sales invested in R&D



Company Headquarters and R&D center in Barcelona (Spain)



Source: FY-15 consolidated data

Global Footprint

Portugal



Porto

Spain



Barcelona
Soria
Sant Guim

France



Dieuze
Le Neobourg

Germany



Rüsselsheim / Köln /
Lindau / München /
Wolfenbüttel

Italy



Venaria Reale
Morcone

Poland



Dabrowa Gornicza

Turkey



Bursa
Gemlik

USA



Detroit (Mi)
Cookeville (TN)
Shelbyville (KY)

Mexico

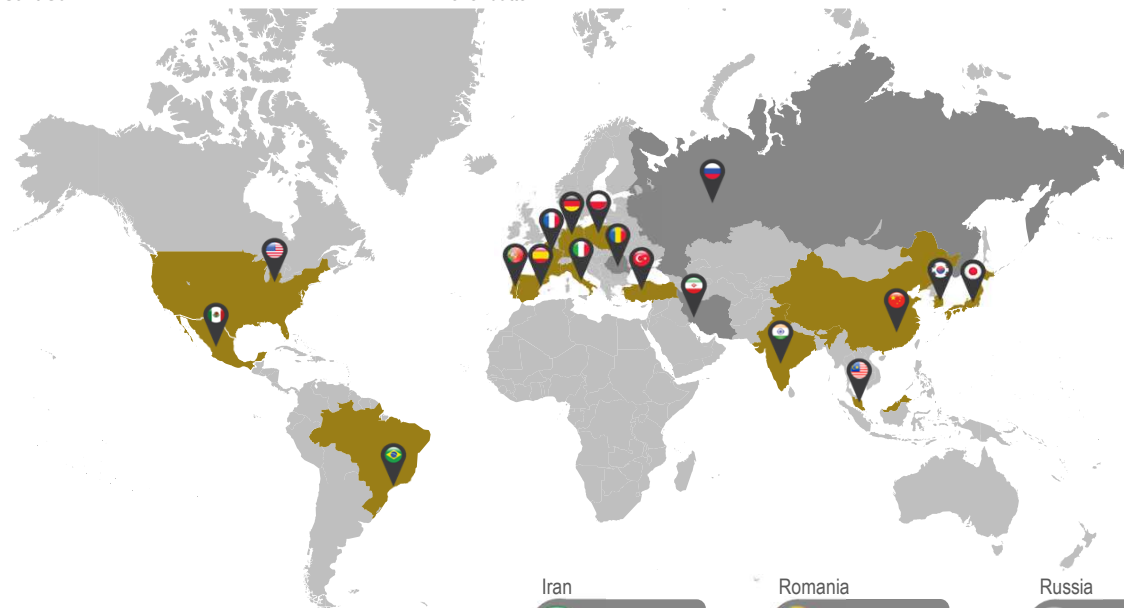


Salinas-Victoria
Escobedo

Brazil



Sao Paulo



Korea (Joint -venture)



Gyeongsangbuk-do

Japan



Tokyo - (Office)

China



Taicang
Chongqing
Shenyang

Malaysia



Kuala Lumpur

India (Joint -venture)



Pune (Two plants)
Pant Nagar

Iran



License agreement

Romania



License agreement

Russia



License agreement

Business Units

REAR VIEW SYSTEMS



- Exterior Mirrors
- Interior Mirrors

COMMAND & CONTROL



- Shifter systems
- Parking Brake Systems

DOOR & SEAT SYSTEMS



- Comfort
- Light Cables

UNDERHOOD SYSTEMS

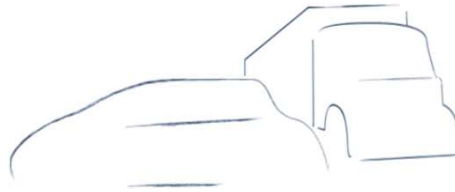


- Washer Systems
- Sensor Cleaning System

COMMERCIAL VEHICLES



- Exterior Mirrors
- Interior Mirrors
- Camera Monitoring Systems
- Communication Modules



ADVANCED COMMUNICATIONS



- Communication Modules
- Integrated Antennas
- Smart Connectivity Modules

eMOBILITY



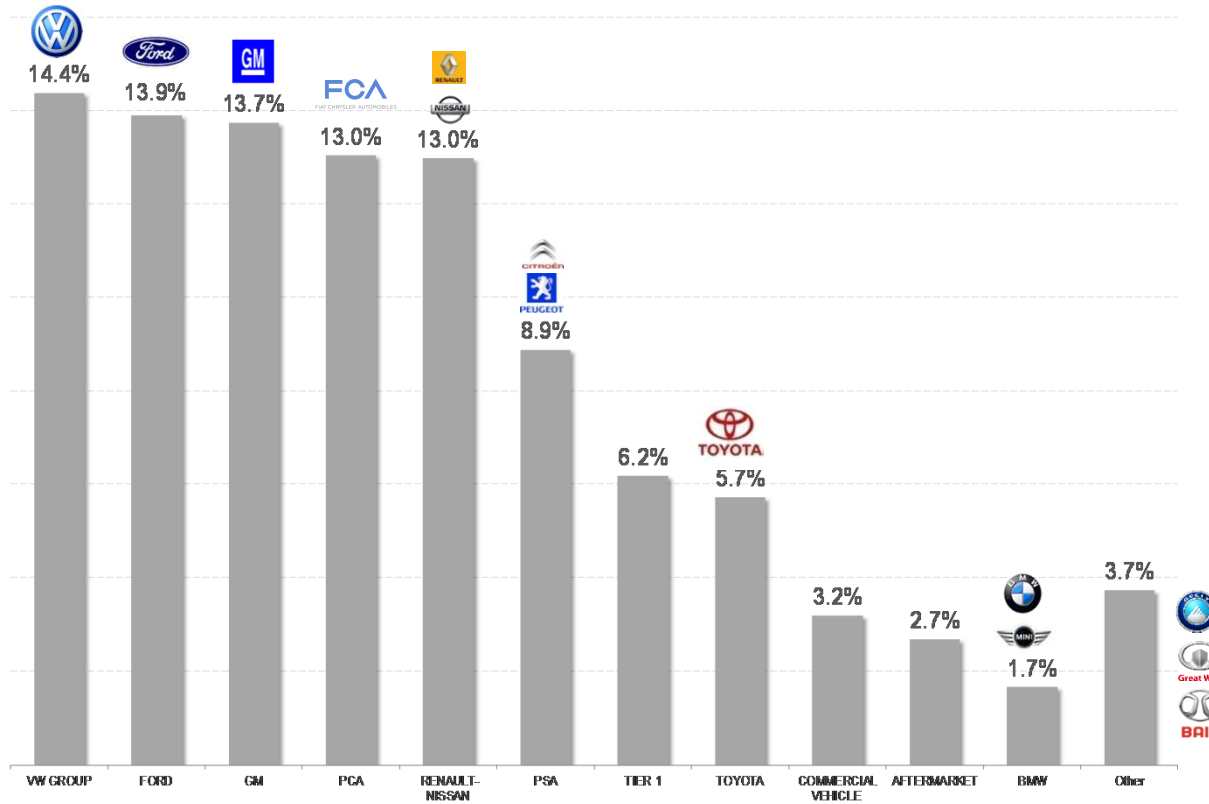
- Battery Management Systems
- On board charger

ADAS



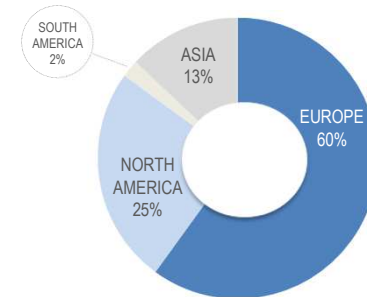
- Cameras
- Camera Monitoring Systems
- Surround View System

Customer Diversification



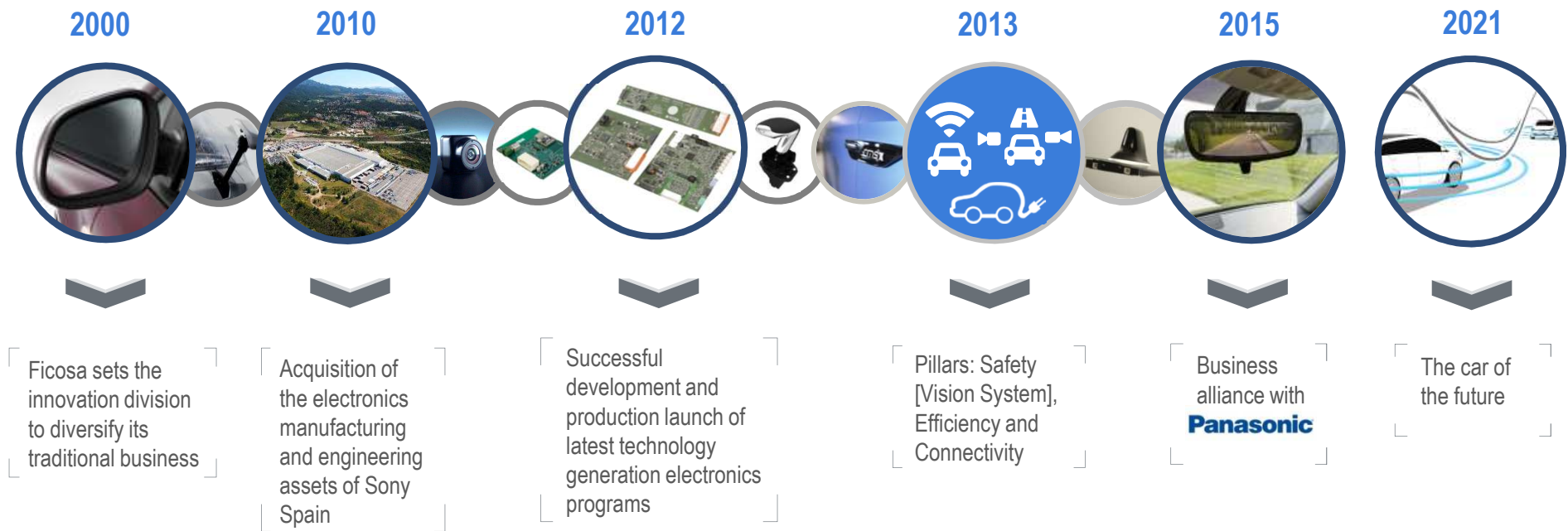
Ficosa has a diversified customer base, as a partner to all the major global OEMs, not being dependent to a single customer or market

FICOSA SALES BY REGION




Source: FY-15 consolidated data

A higher technological content company




R & D

Talent
942 engineers




Commitment
6,5 % sales
invested in R&D

Global
14 Development Centers




647 Patents Filed

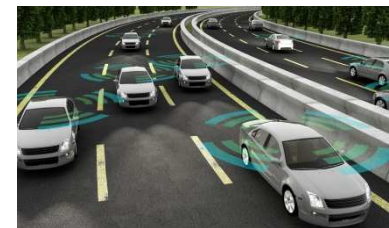


World class **labs & testing** facilities



 Robust methodology & development process





The Project



The ESCAPE project is funded by the European GNSS Agency under the European Union's Fundamental Elements research and innovation programme under grant agreement No. GSA/GRANT/02/2015

European **S**afety **C**ritical **A**pplications **P**ositioning **E**ngine

The main objective of the project is the first development of a positioning engine for safety critical applications integrating E-GNSS (Galileo), On-board Sensors, Camera and Maps.

<http://www.gnss-escape.eu/>

Road Transportation Needs

Safety Critical Applications

Connected Vehicles & Autonomous Driving possess potential for causing harm and damage.



Accurate & Reliable Information

Emerging for SCA. Common approach is using multiple sources of data: rather expensive and non targeted for automotive.



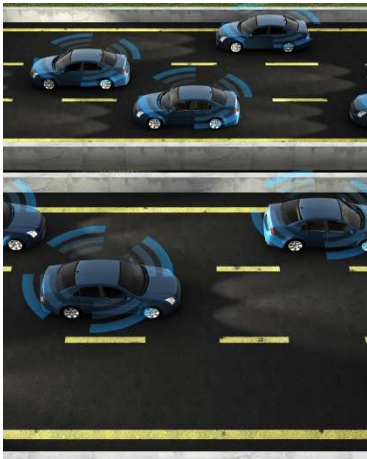
Galileo deployment

Services starting at 2016 providing more precise, reliable and robust GNSS. Authentication feature benefiting safety/security applications.



ESCAPE Objectives

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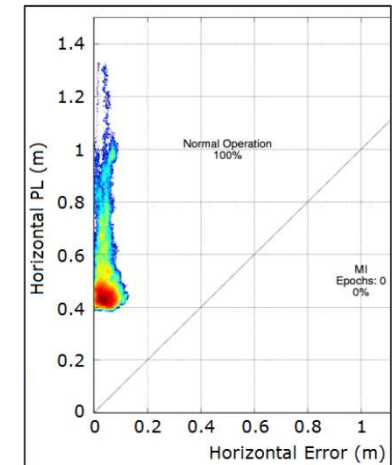
Development of a positioning engine for **safety critical** applications



Exploitation of **European GNSS** differentiators

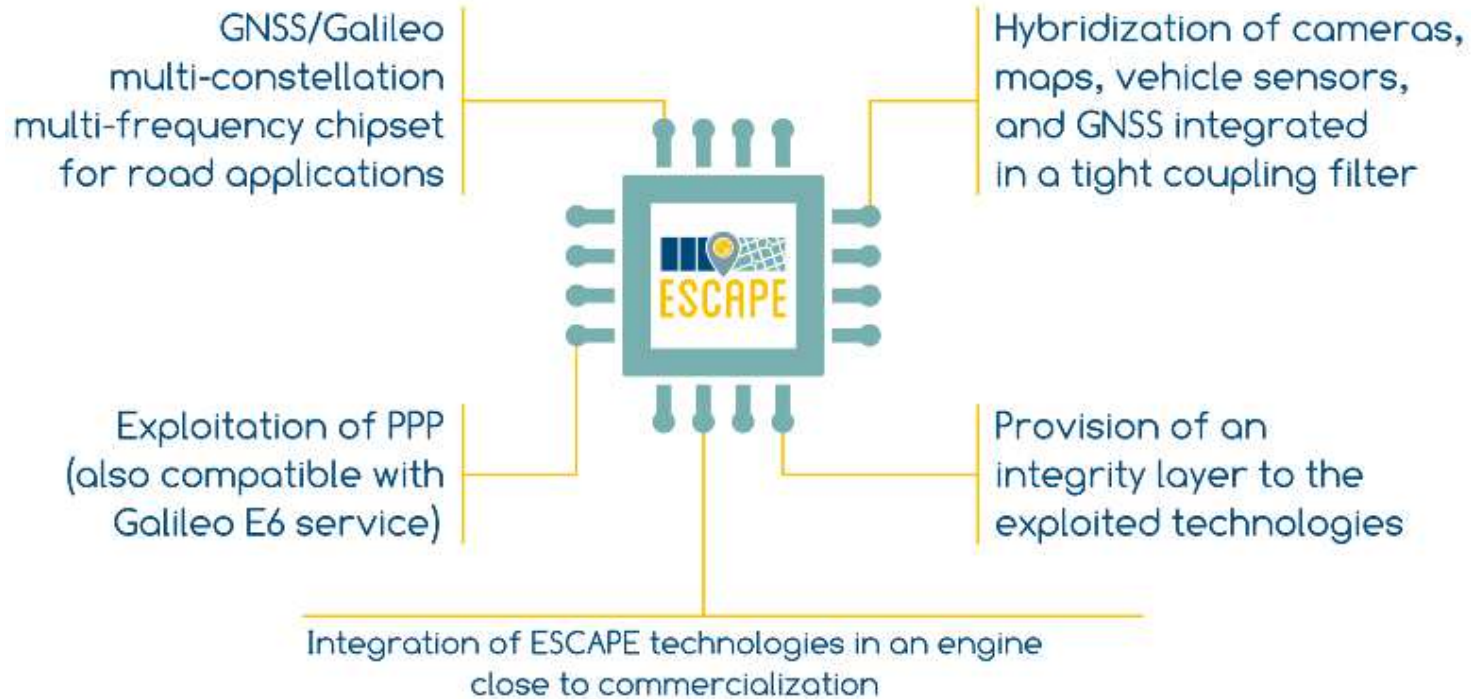


Autonomous driving is the targeted application



Provision of **integrity** as the most relevant performance feature

Innovation



Project

14



Kick-off: October 1, **2016**
Duration: 3 years
Closure: September 30, **2019**

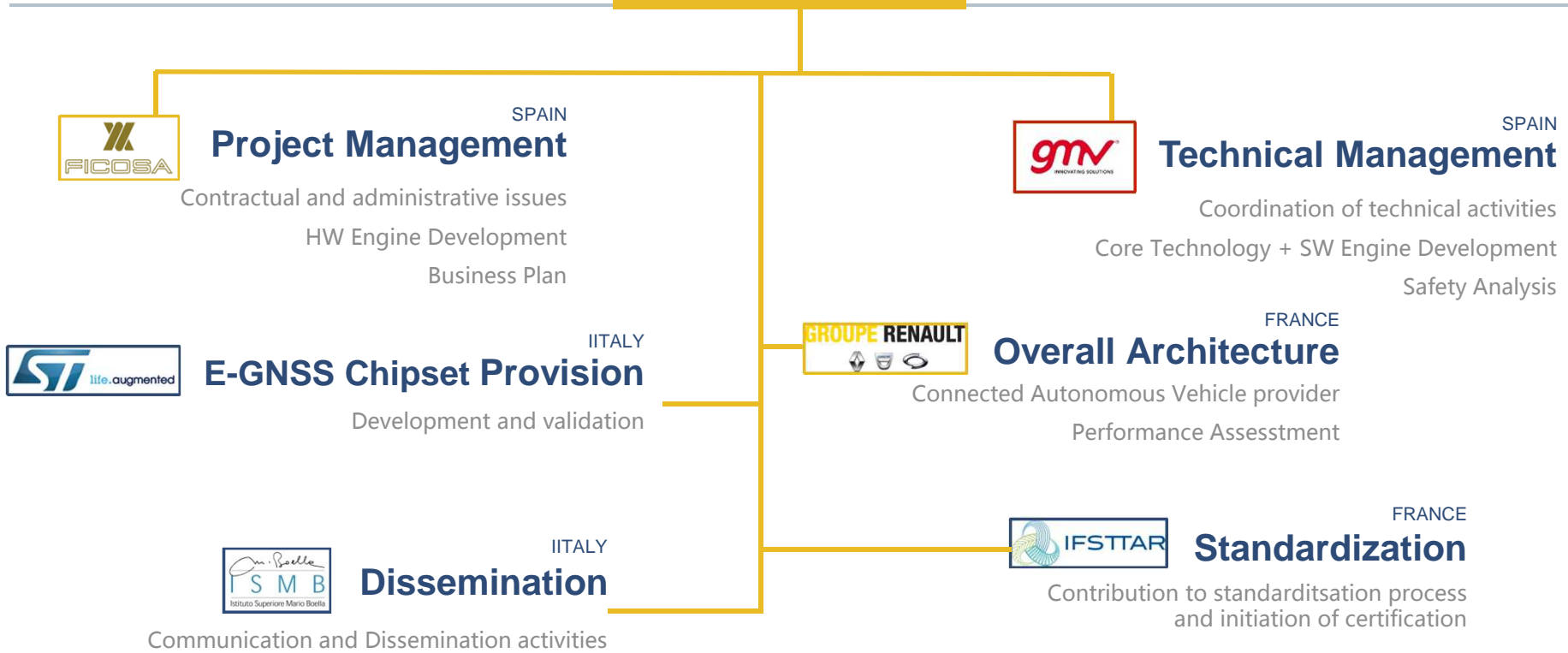


Project is **funded by the European GNSS Agency (GSA)** under the European Union's Fundamental Elements research and development program under grant agreement.
Total estimated eligible costs: **5.475.209,80 €** // Total requested GSA grant: **3.285.125,88 €**



In-vehicle demonstration in **real HAD representative scenarios** at Renault's facilities.
Demonstration of isolated engine RF aspects in the European Microwave Signature Laboratory (EMSL) of the European Commission's **Joint Research Centre (JRC)**.

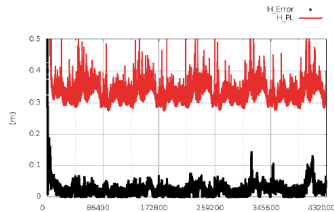
ESCAPE Consortium



Technologies: Pre-existing Knowledge

Autonomous vehicle

Prototype based on low cost technology developed and demonstrated by *Renault*.



GNSS processing

GMV technologies cover advanced techniques such as PPP and position integrity based on IBPL and KIPL.

Multi-constellation receiver

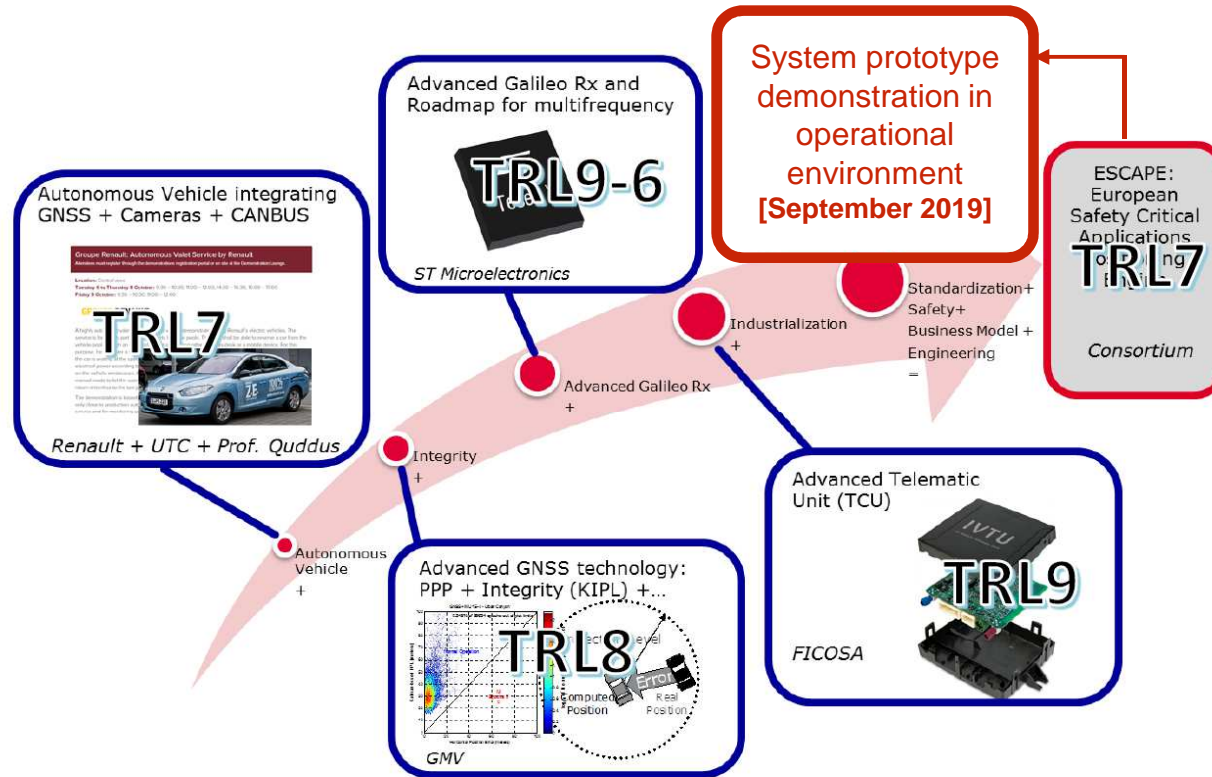
ST Microelectronics developments already support GPS, GLONASS and Galileo.



Advanced Telematic Units

Ficosa products already installed in OEM's like *Renault* provide experience in project development.

ESCAPE Solution Maturity (target)



ESCAPE Market: Business Roles

GROUPE RENAULT



OEM

New technology & services
& functionalities for vehicles

FICOSA

TIER-1

Higher demand of units as
more and more vehicles are
equipped

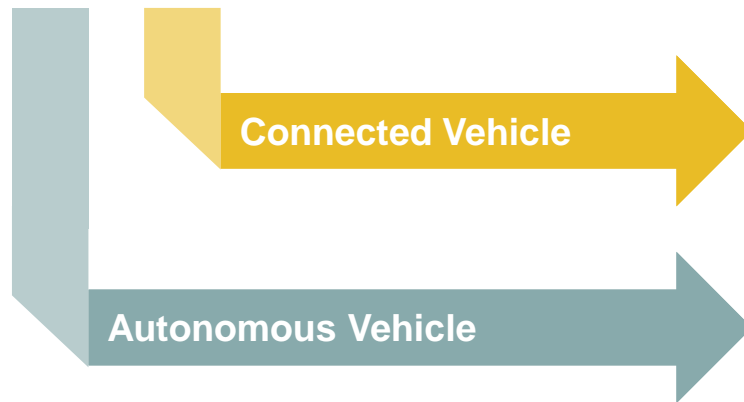


TIER-2

Benefit as more units are
manufactured by the Tier 1

Automotive Sector Trends

A lot of benefits for consumers



ESCAPE will enable and improve the functionalities required for current automotive trends.

Reduction of accidents

Reduced congestion

Higher fuel efficiency

Democratization of mobility

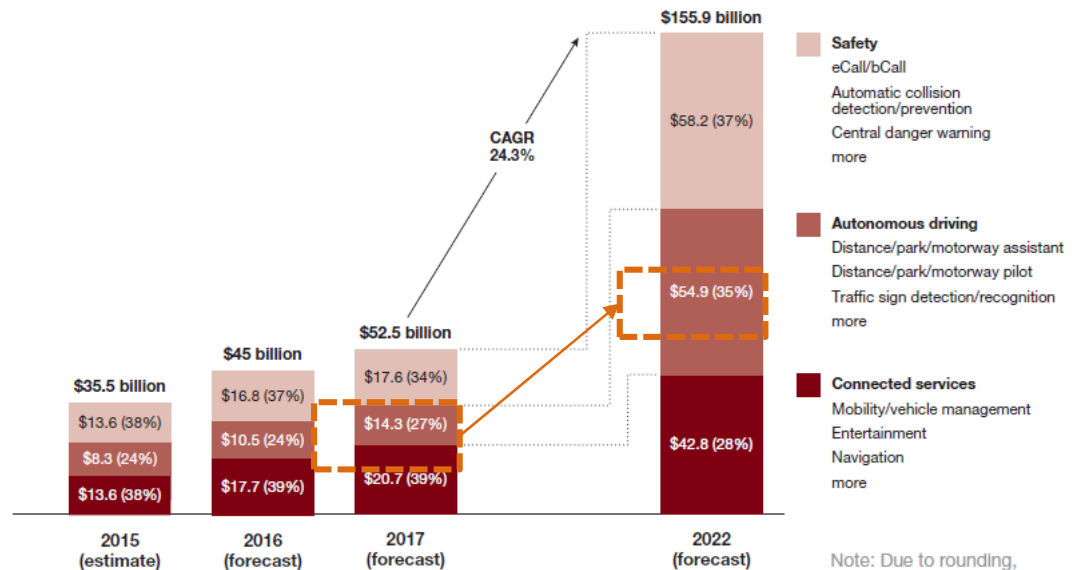
Gain in productivity (reduction time in transit)

Connected & Autonomous Car - Estimated Sales

The connected car is an interim step on the way to the truly autonomous vehicle

By 2022, autonomous packages will have the largest incremental impact on new car sales.

Estimated connected car revenues (and market share) by product package, 2015–22

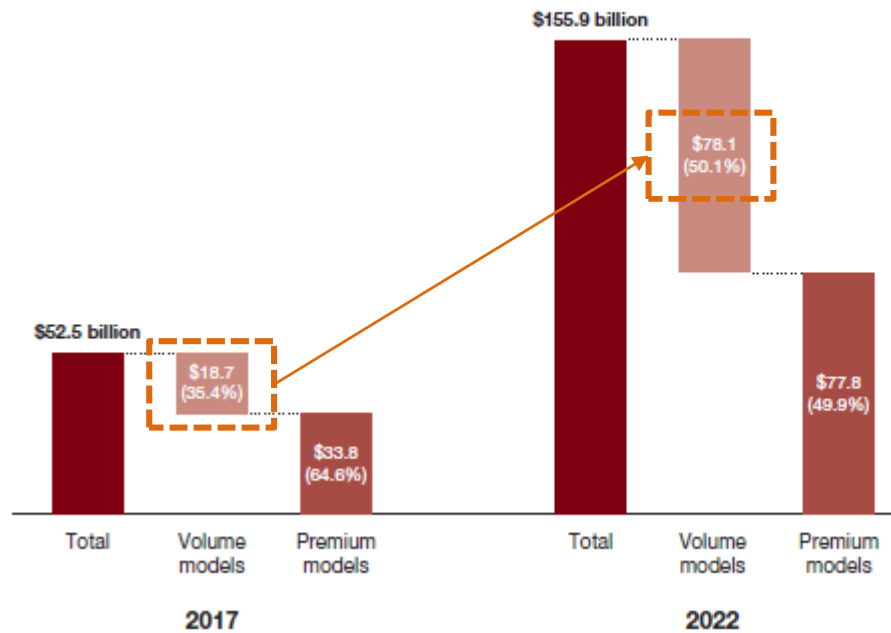


Note: Due to rounding, numbers shown here may not add up precisely to the totals provided.

Source: Strategy& analysis

Connected & Autonomous Car - Estimated Sales (2)

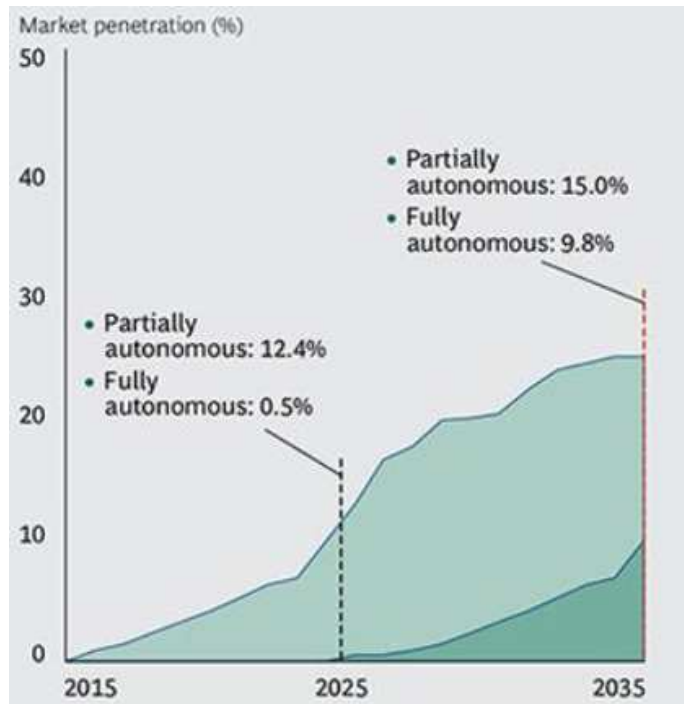
Projected connected car revenue share between premium and volume cars, 2017–22



The market for connected car packages in 2017 will continue to center on premium vehicles. By 2022, the value to be found in the volume market will catch up to 50 percent of the total

Source: Strategy& analysis

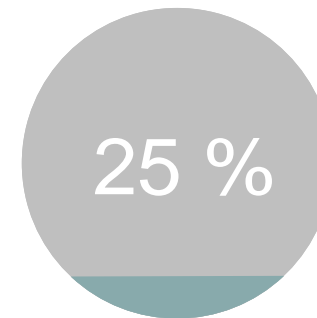
Autonomous Driving - Market Forecast



Source: Boston Consulting Group, 2015

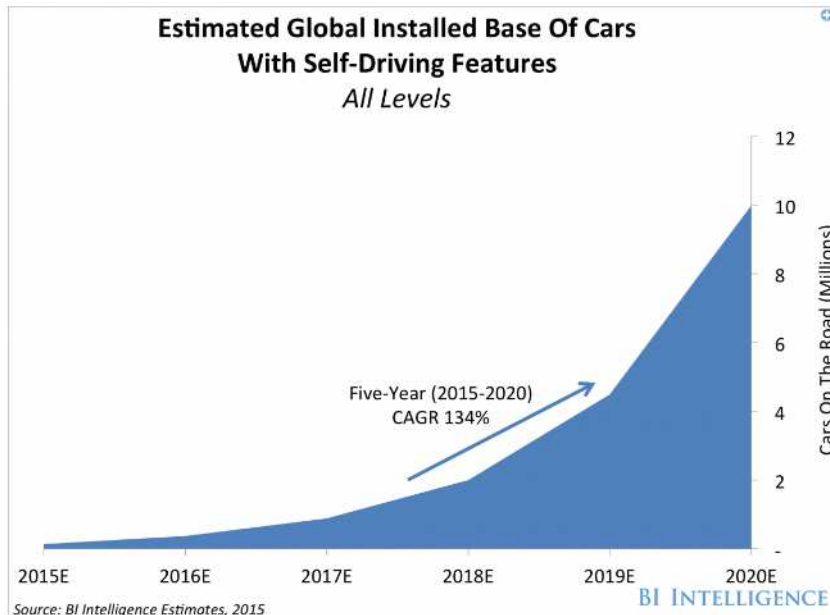
75M ESCAPE units

Potential number that would reach in 2035, considering a global European fleet of 300 Million vehicles



Estimated market penetration of partially and fully autonomous vehicles by 2035

Autonomous Driving - Market Forecast (2)



Source: BI Intelligence, 2015

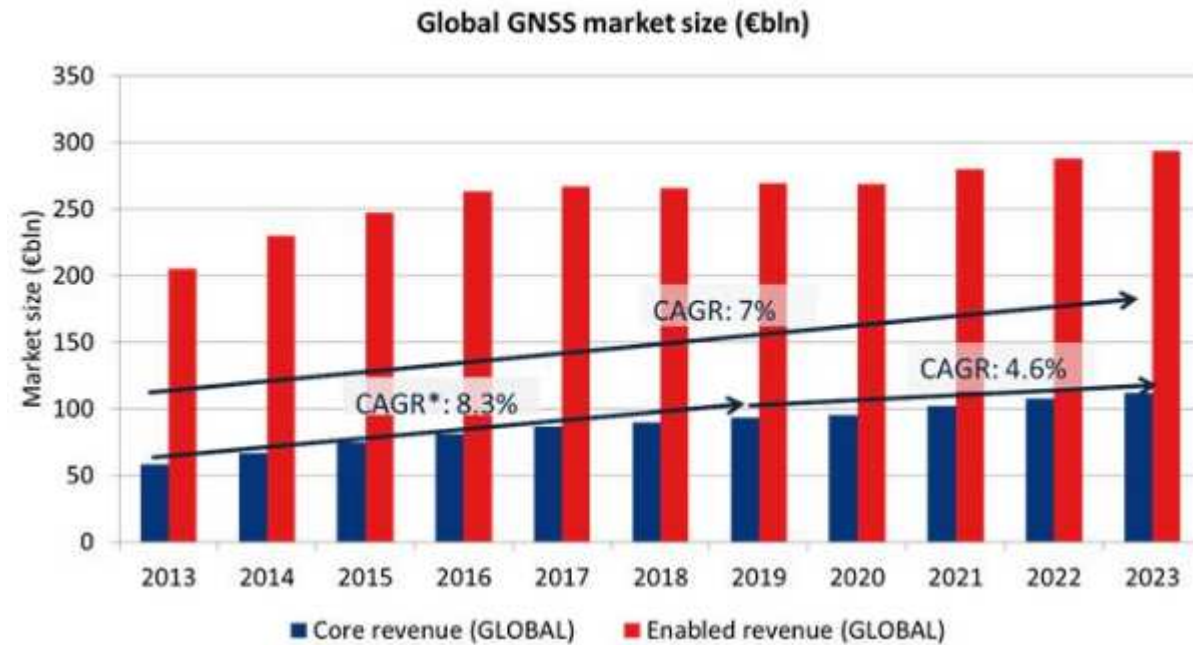
IHS Forecast (June 2016)

- "Between now and 2035, IHS estimates that nearly 76 million vehicles with some level of autonomy will be sold globally".
- "Global sales of autonomous vehicles will reach nearly 600,000 units in 2025,"
- New forecast reflects a 43 percent compound annual growth rate between 2025 and 2035

GNSS - Market Forecast

8,3%

GNSS downstream market forecast to increase annually between 2013 and 2019



Source: GSA

Conclusions

ESCAPE will overcome multiple challenges...

GSA funded projects aim to increase **Galileo adoption** in emerging segments.



Innovation is accelerating for vehicles. **GNSS is a key** technology.

The **consortium covers all** the areas of innovation for the project, integrating all the automotive supply chain.



CONTACT

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More info at www.gnss-escape.eu*

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Thank you