Tachograph Forum

Meeting 28 November 2016

Bernardo MARTÍNEZ
Road Transport Unit (DGMOVE)
bernardo.martinez@ec.europa.eu

Agenda (main points)

- **Smart tachograph (EC)**
  - Smart tachograph and Galileo network
  - Security
  - Implementation milestones
- **Enforcement (ECR, CORTE)**

European Commission

Smart tachograph

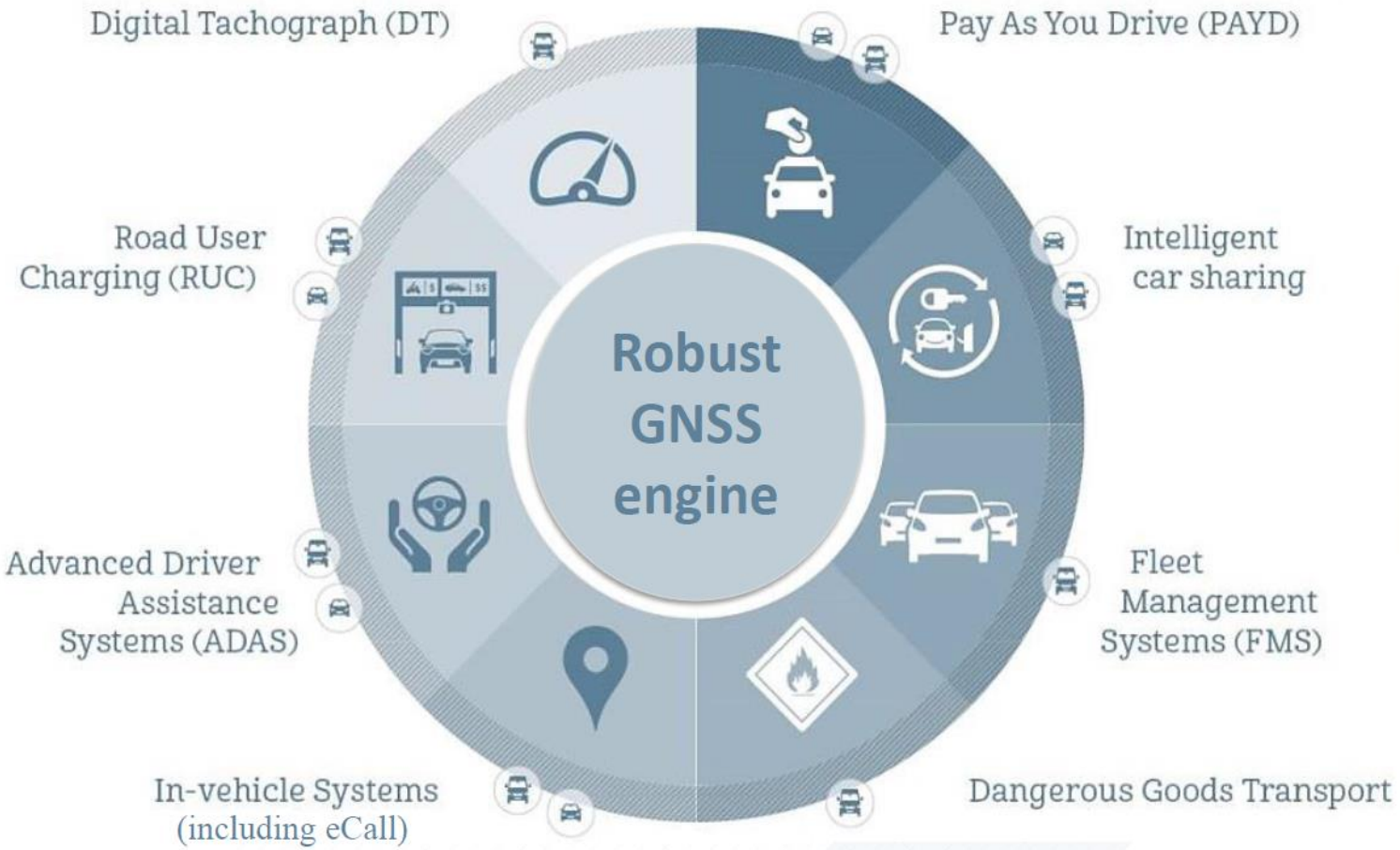
- **Adopted by Regulation 165/2014**
- **In all new vehicles registered as from 15 June 2019**
- **GNSS module**
  - Automatic recording of the location of the vehicle (cabotage)
  - Second motion sensor
- **DSRC module for communication tachograph - control officers**
- **New cryptography**
- **Enhanced seal**

GNSS

European Commission

OUR VISION: A ROBUST GNSS CAN ACT AS A SINGLE LOCATION "ENGINE" FOR MULTIPLE ROAD APPLICATIONS

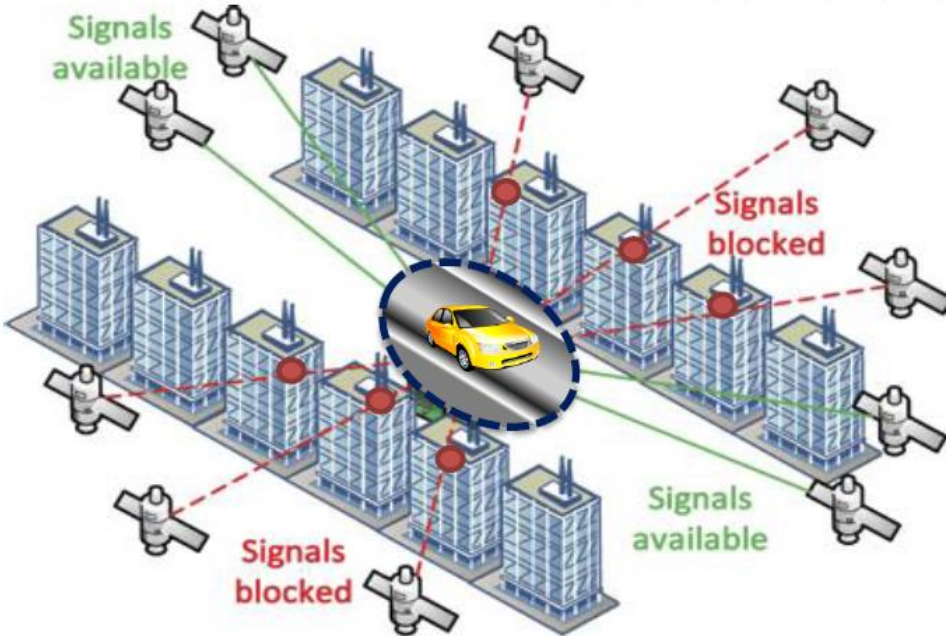
GALILEO EGNOS
NAVIGATION SOLUTIONS POWERED BY EUROPE



GNSS

European Commission

✓ *Multi-constellation*:
When buildings block the signal and reduce the number of visible satellites, the availability of more constellations ensures a **much more accurate final position**



Automotive chipset suppliers leaders support Galileo

STMicroelect QUALCOMM u-blox CSR BROADCOM intel MEDIATEK

GNSS MARKET REPORT

Source: http://www.gsa.europa.eu/system/files/reports/GNSS-Market-Report-2015-issue4_0.pdf

European Commission

GALILEO UNIQUE DIFFERENTIATOR: SIGNAL AUTHENTICATION

GALILEO EGNOS NAVIGATION SOLUTIONS POWERED BY EUROPE

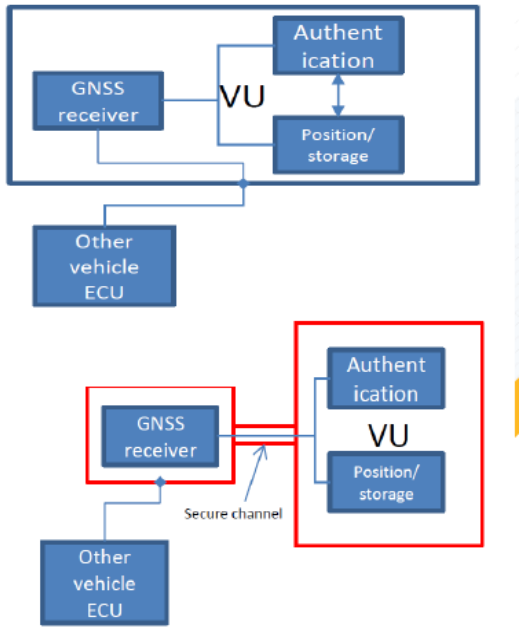
- **Security** is a **major concern** in the Smart Tachograph
- Galileo provides an **efficient**, **resilient** and **low-cost solution** against jamming or spoofing attacks

GALILEO

Authentication

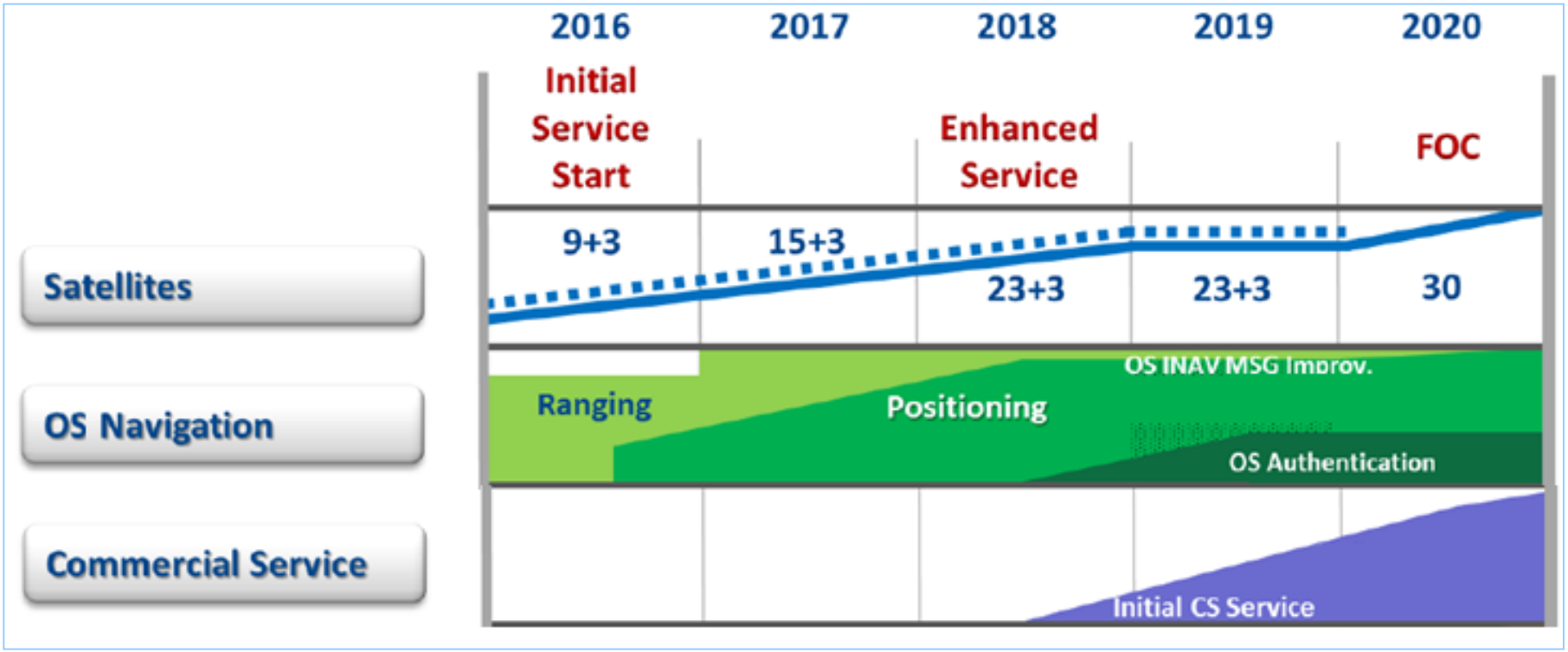
- Ability of the system to guarantee to the users that they are utilizing signals from the Galileo satellites and not from any other source

vs.



Authentication of Galileo signals in the Open Service looks **more convenient for the industry** than the signal encryption between GNSS receiver and VU

GNSS

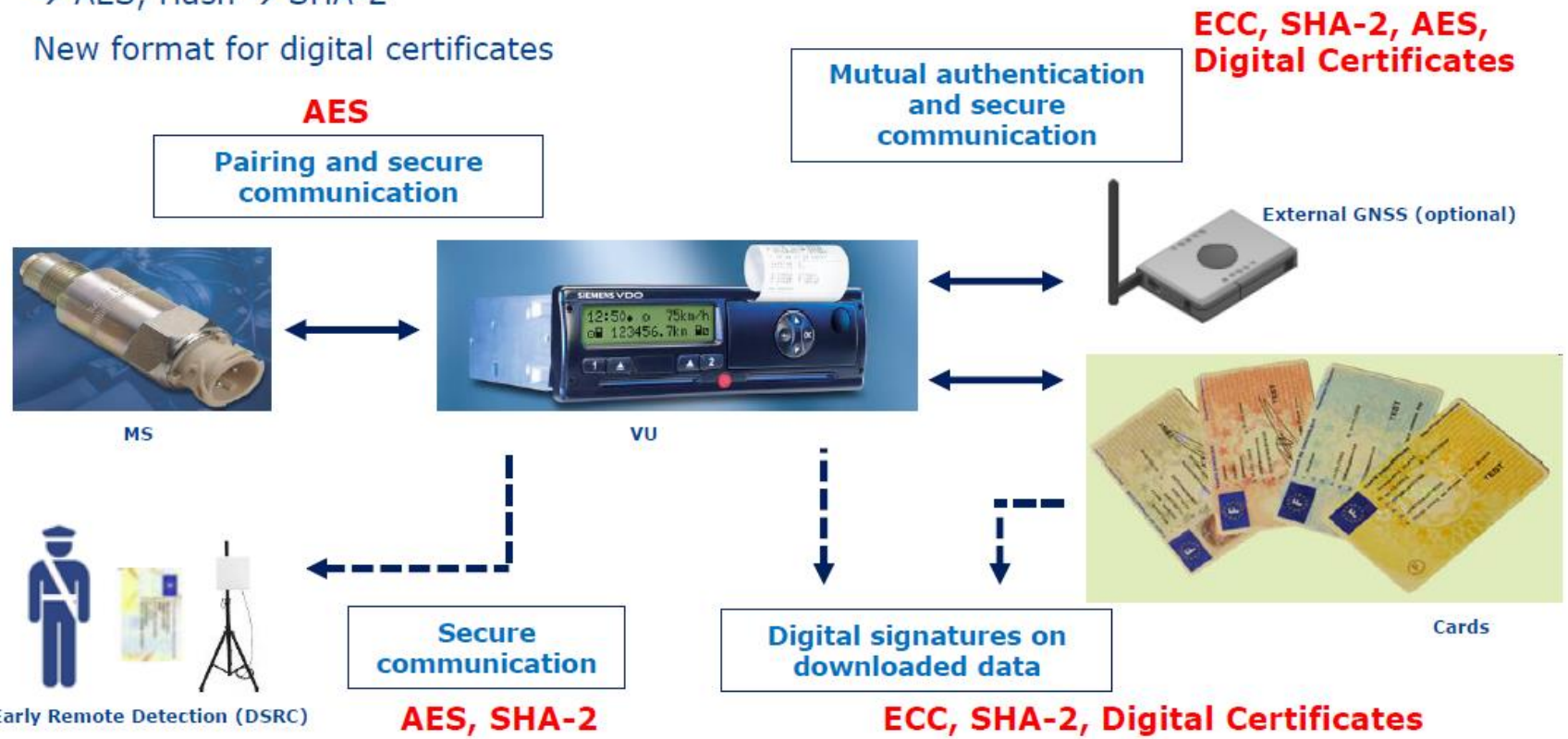

2016
2017
2018
2019
2020
Initial Service Start
Enhanced Service
FOC
9+3
15+3
23+3
23+3
30
Satellites
OS Navigation
Commercial Service
Ranging
Positioning
OS INAV MSG Improv.
OS Authentication
Initial CS Service

Security

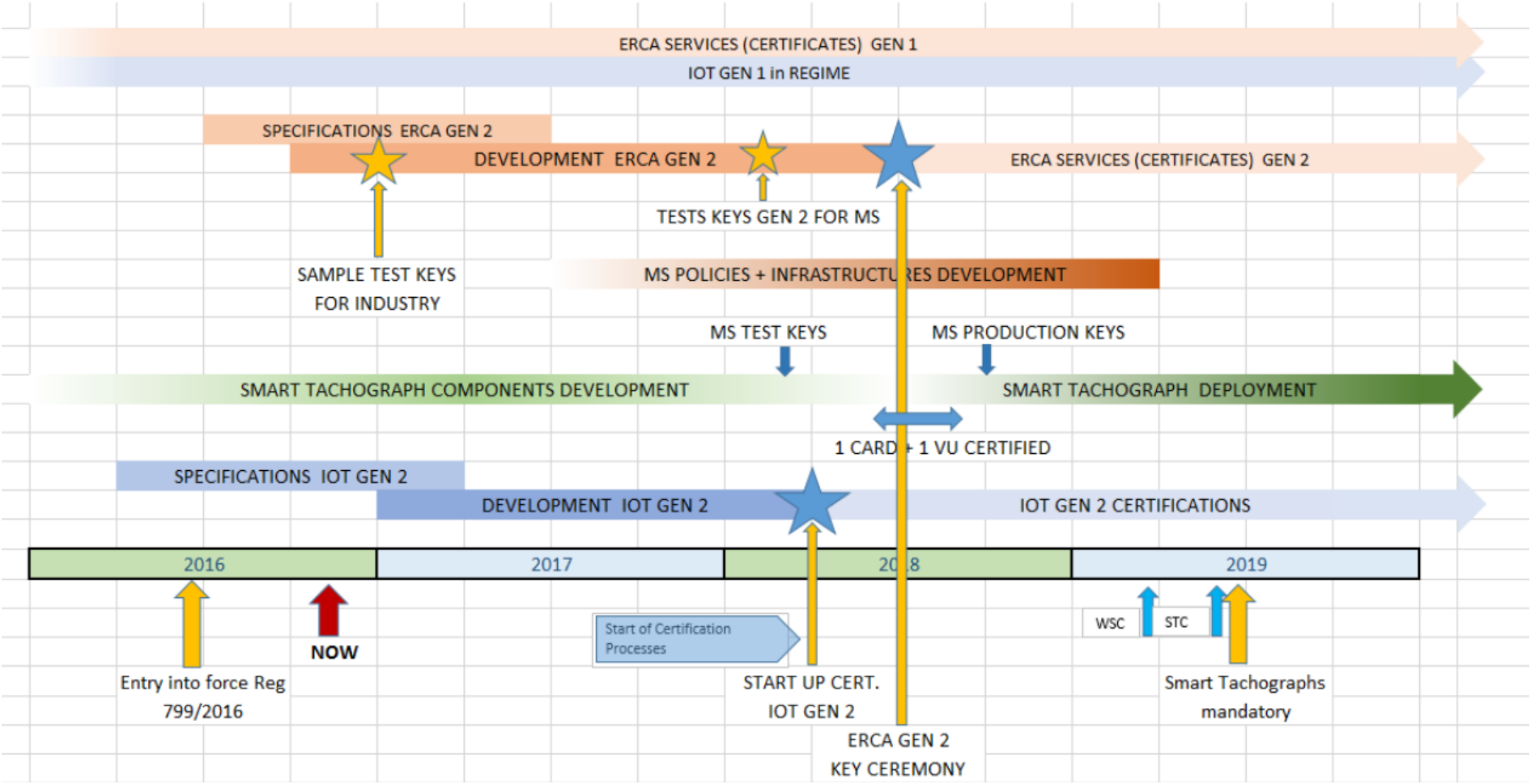
European Commission

New Cryptographic Algorithms NEW

- Cryptographic algorithms to secure the communication links completely renewed
- Public key cryptography → Elliptic Curve Cryptography (ECC), Symmetric-key cryptography → AES, Hash → SHA-2
- New format for digital certificates



Timeline


ERCA SERVICES (CERTIFICATES) GEN 1
IOT GEN 1 in REGIME
SPECIFICATIONS ERCA GEN 2
DEVELOPMENT ERCA GEN 2
ERCA SERVICES (CERTIFICATES) GEN 2
TESTS KEYS GEN 2 FOR MS
SAMPLE TEST KEYS FOR INDUSTRY
MS POLICIES + INFRASTRUCTURES DEVELOPMENT
MS TEST KEYS
MS PRODUCTION KEYS
SMART TACHOGRAPH COMPONENTS DEVELOPMENT
SMART TACHOGRAPH DEPLOYMENT
1 CARD + 1 VU CERTIFIED
SPECIFICATIONS IOT GEN 2
DEVELOPMENT IOT GEN 2
IOT GEN 2 CERTIFICATIONS
2016
2017
2018
2019
NOW
Start of Certification Processes
WSC
STC
Entry into force Reg 799/2016
START UP CERT. IOT GEN 2
ERCA GEN 2 KEY CEREMONY
Smart Tachographs mandatory

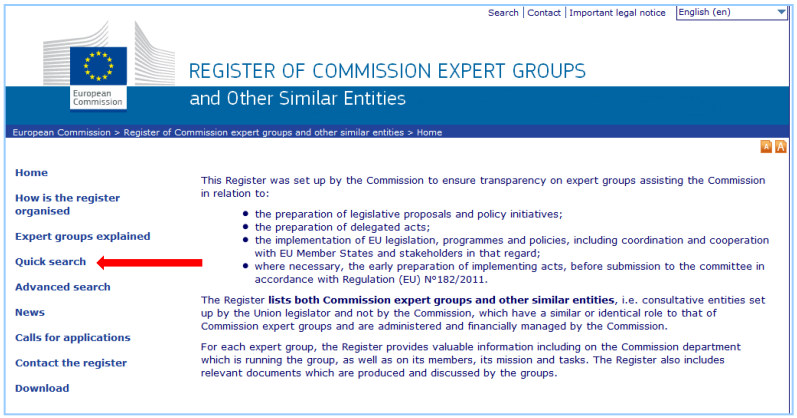
Enforcement

- Detection of tachograph manipulation has risen from 5 to 10% of the total of breaches to Reg 561/2006
- More and more sophisticated
- Tachograph tampering is beneficial
- Request for software type-approval
- Tachograph should remain an enforcement tool

More info

European Commission

http://ec.europa.eu/transparency/regexpert/index.cfm



European Commission

Thank you