

PTOLEMUS Consulting Group

# **What is the future of TPS eCall?**



Brussels - 1<sup>st</sup> October 2018

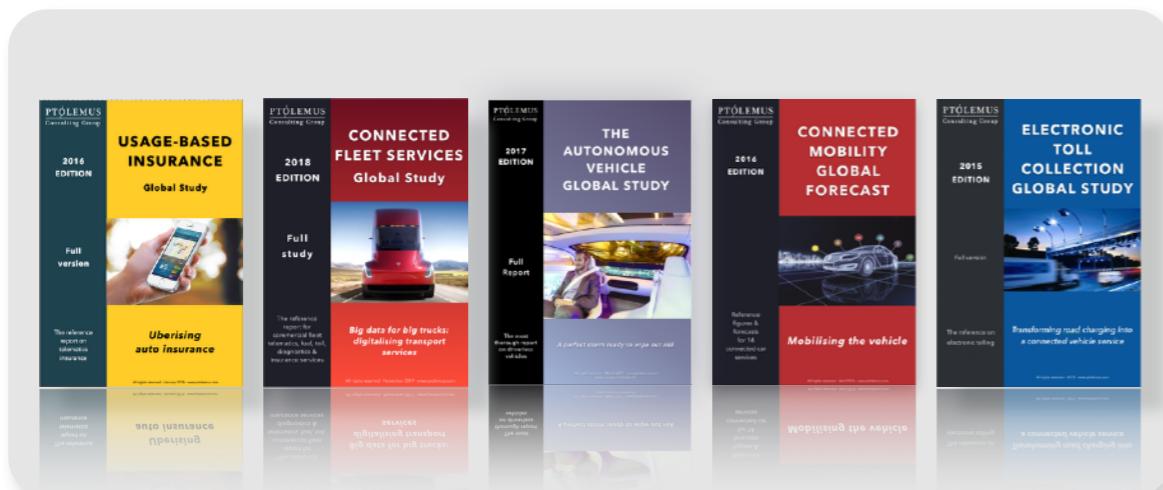
PTOLEMUS Consulting Group intellectual property

# The first strategy consulting & research firm entirely focused on augmented mobility & automation

## Consulting services



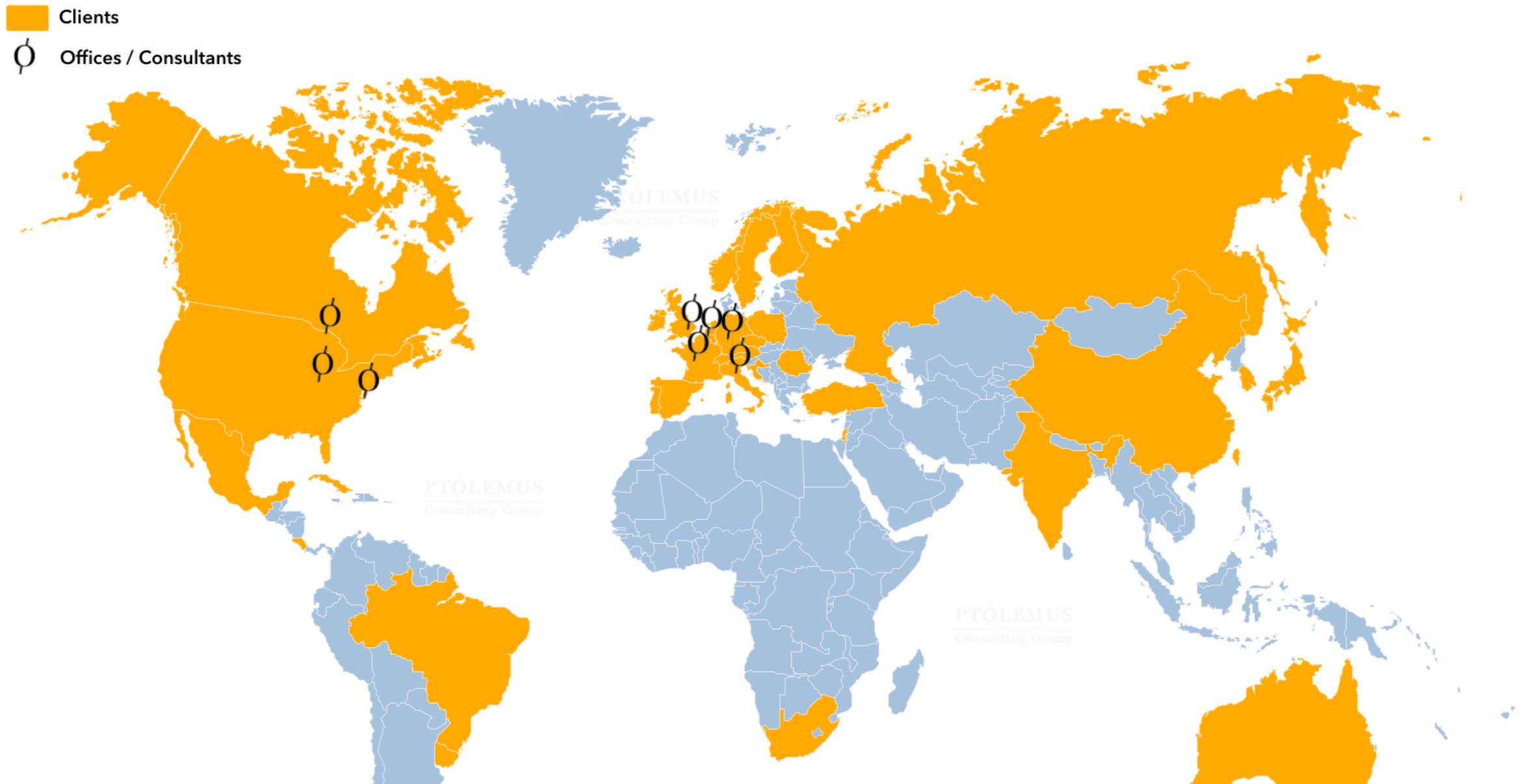
## Market research services



## Fields of expertise

<b>Mobility services</b>	Car pooling Car sharing Smart parking	Multimodal mobility Ride hailing	Road side assistance Tax refund
<b>Vehicle services &amp; telematics</b>	bCall eCall FMS SVT / SVR	VRM Concierge In-car Wi-Fi Fuel cards	Parking Navigation Speed cameras Traffic information
<b>Usage-based charging</b>	Car As A Service Electronic Toll Collection	Mobility-as-a-Service Road charging	UBI / PAYD Vehicle rental Vehicle leasing
<b>Vehicle data &amp; analytics</b>	AI CAN-bus Crowd-sourcing Data protection	Driving behaviour OBD Predictive analytics	Remote diagnostics xFCD
<b>Vehicle automation</b>	ADAS	Autonomous cars	Autonomous trucks
<b>Enabling technologies</b>	Positioning (GNSS / WiFi / cellular)	M2M / connectivity Smartphones	Telematic devices V2X

# Our team of 30 consultants, experts & researchers including 18 nationalities serves our clients worldwide



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# Our clients come from across the mobility ecosystem

## Analytics, maps & applications providers



## Automotive manufacturers & suppliers



## Telematics solution providers



## Device & location suppliers



## Insurers, aggregators & assistance providers



## Mobile telecom operators



## Fleet & fuel, ITS & regulators



## Banks & private equity investors



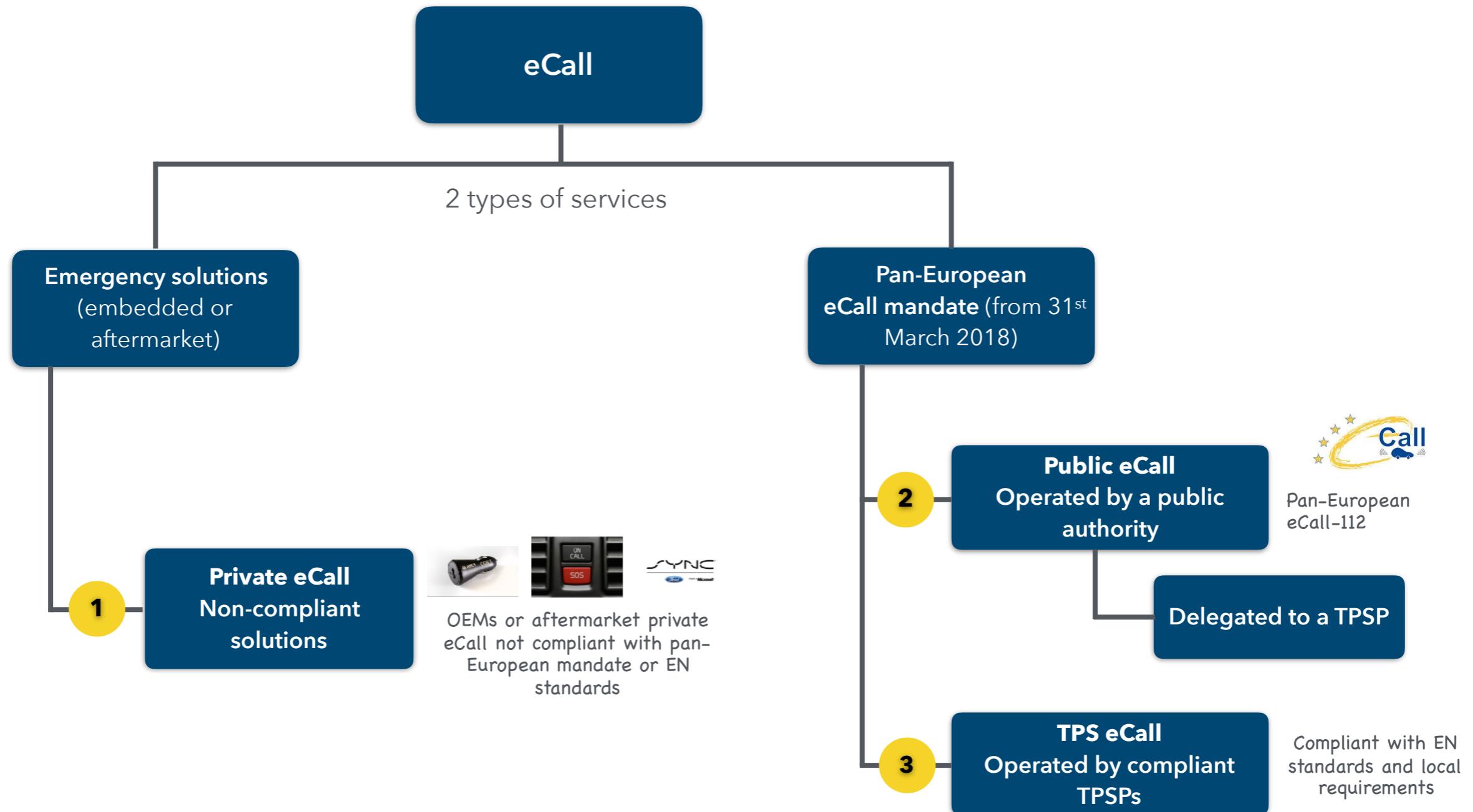
# This brief is based on market research in the last 9 months

- This brief is the result of 9 months of research
- Our methodology included:
  - Over **20 interviews conducted** with key stakeholders including OEMs, PSAPs, local authorities and third party service providers
  - The regulatory and structural frameworks assessed in **18 European countries**
  - A **competitive market analysis** of major OEMs and third party service providers
  - Assistance to leading players in the field of e/bCall



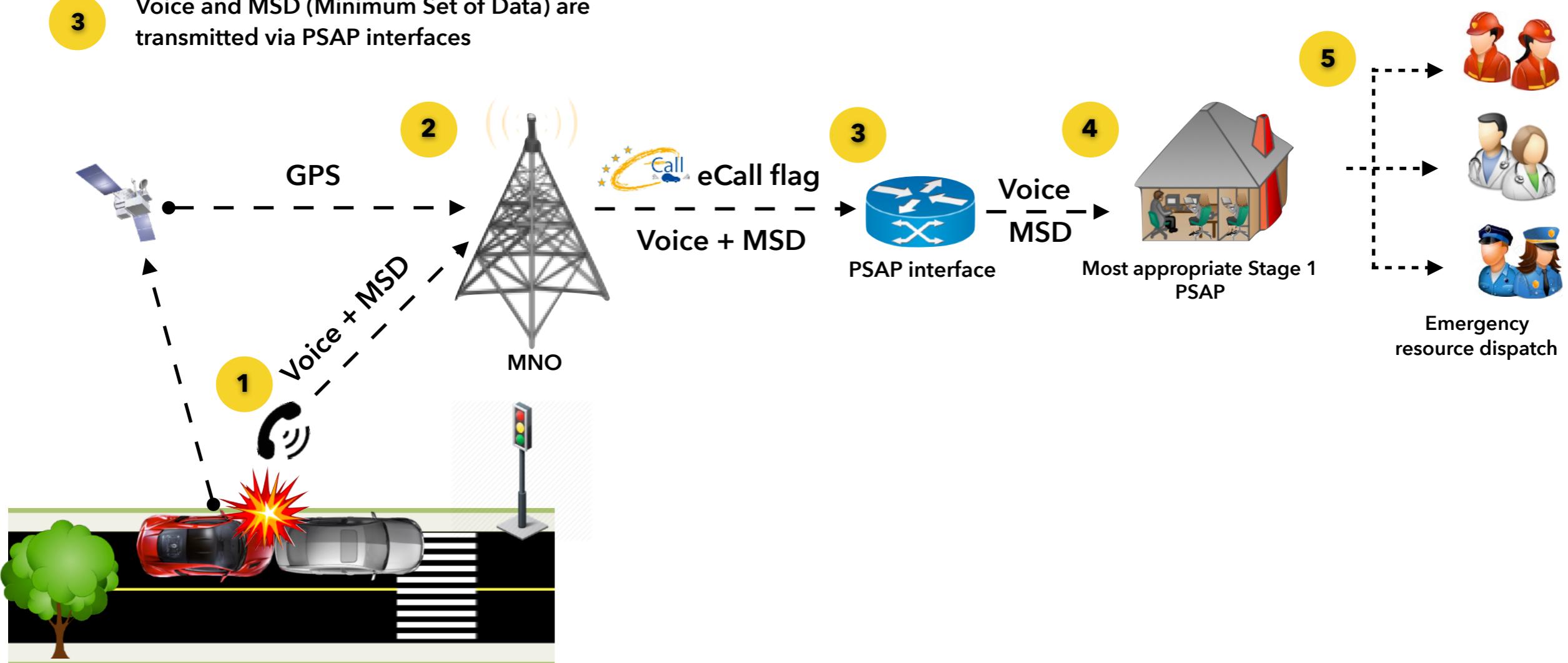
# The eCall mandate regulates 2 out of 3 types of services including public eCall and TPS eCall

## Classification of eCall solutions



# Public eCall delivery model includes 5 key steps

- 1 An eCall is automatically triggered when a crash is detected or is triggered manually
- 2 MNOs (Mobile Network Operator) put eCall flag to the call, detect the location and route to the most appropriate PSAP
- 3 Voice and MSD (Minimum Set of Data) are transmitted via PSAP interfaces
- 4 The most appropriate Stage 1 PSAP\* or eCall PSAP receives the call, classifies accident type and decodes MSD
- 5 Information is sent to Stage 2 PSAPs for emergency resource dispatch



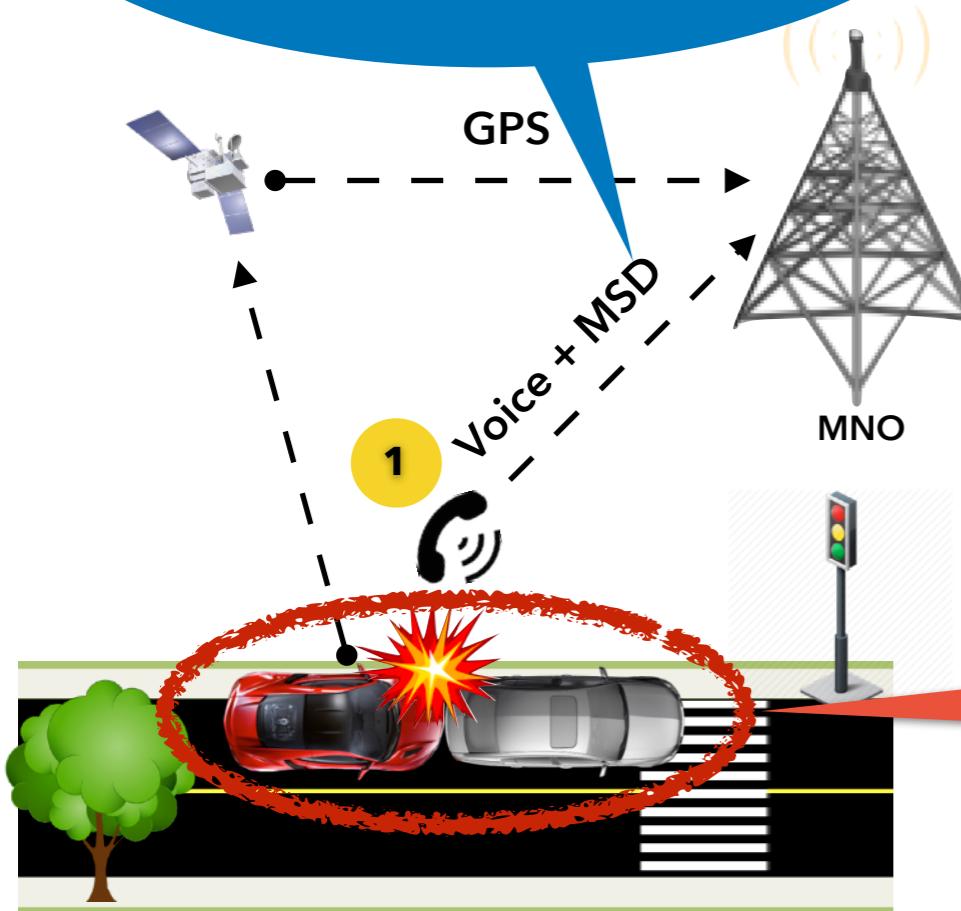
# All new type approved vehicles should apply to the pan-European eCall mandate from 31 March 2018

- 1 An eCall is automatically triggered when a crash is detected or is triggered manually

The device must transmit a minimum set of data (MSD) which should include the crash information, type of call, vehicle types, VIN number, vehicle location, and travel direction

Devices for 112-based eCalls and TPSP\* eCalls can co-exist but only one can be activated at a time, based on the customer choice

The eCall-112 device can be used to deliver other telematics services, given that it would not affect the function of the eCall



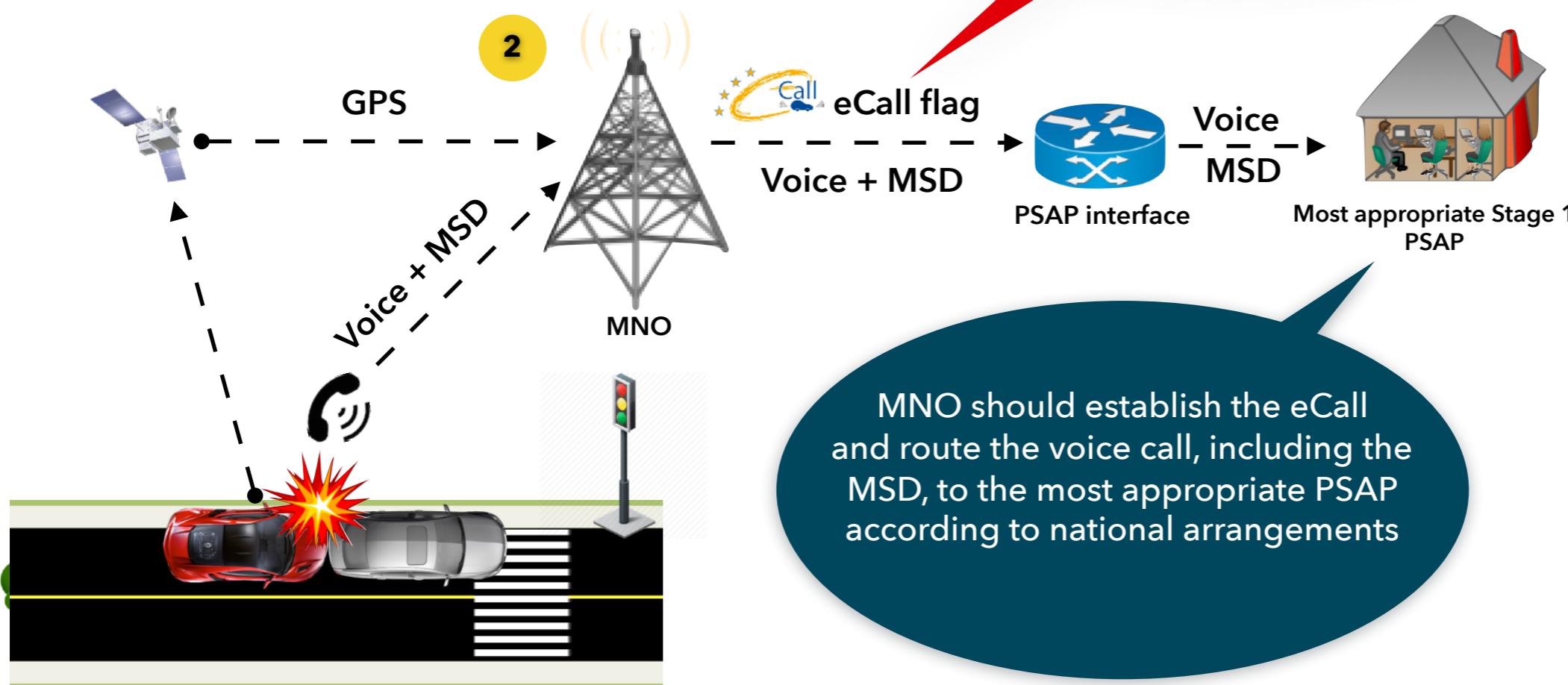
All new type approved vehicles should install a certified in-vehicle device able to transmit 112-based eCalls both automatically and manually from 31 March 2018

# The MNOs are responsible to use eCall flags to distinguish and prioritise eCalls from other emergency calls

2

MNOs (Mobile Network Operator) put eCall flag to the call, detect the location and route to the most appropriate PSAP

An eCall compliant MNO system should use an eCall flag to differentiate eCalls from other speech only emergency calls and distinguish automatically and manually triggered eCalls

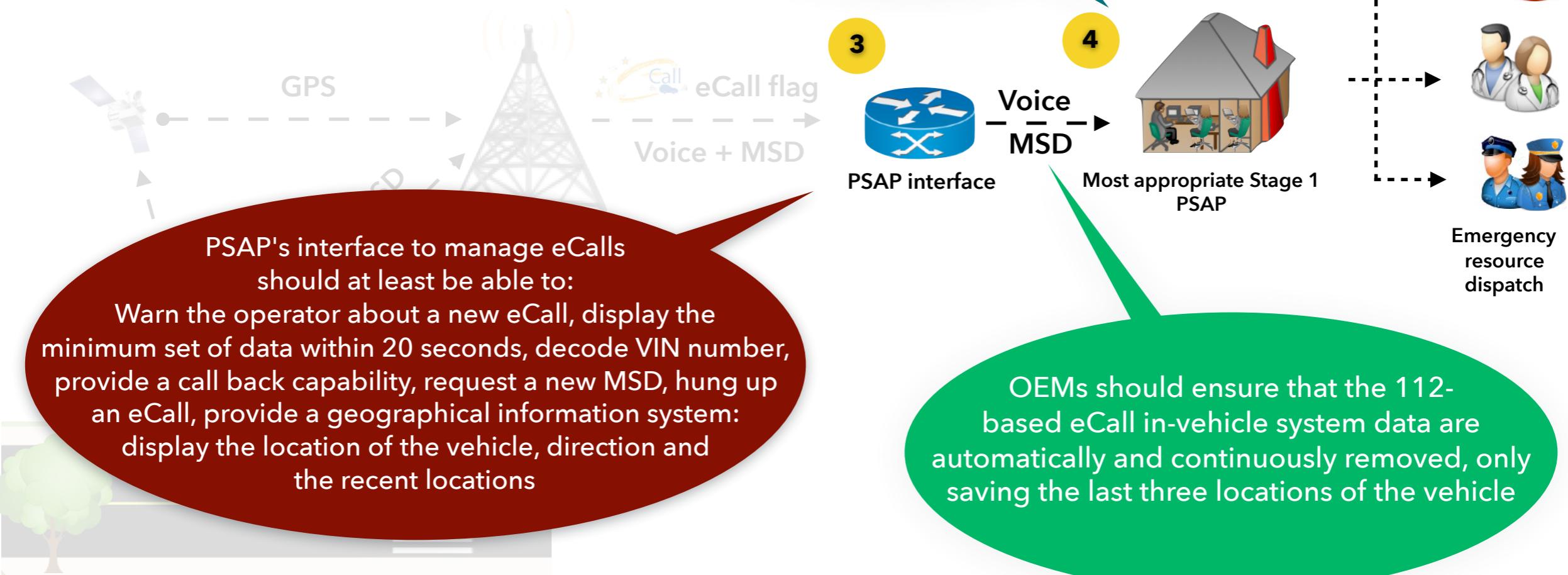


# PSAP interface solutions should be able to establish voice connection and receive the Minimum Set of Data

- 3** Voice and MSD (Minimum Set of Data) are transmitted via PSAP interfaces
- 4** The most appropriate Stage 1 PSAP\* or eCall PSAP receives the call, classifies accident type and decodes MSD
- 5** Information is sent to Stage 2 PSAPs for emergency resource dispatch

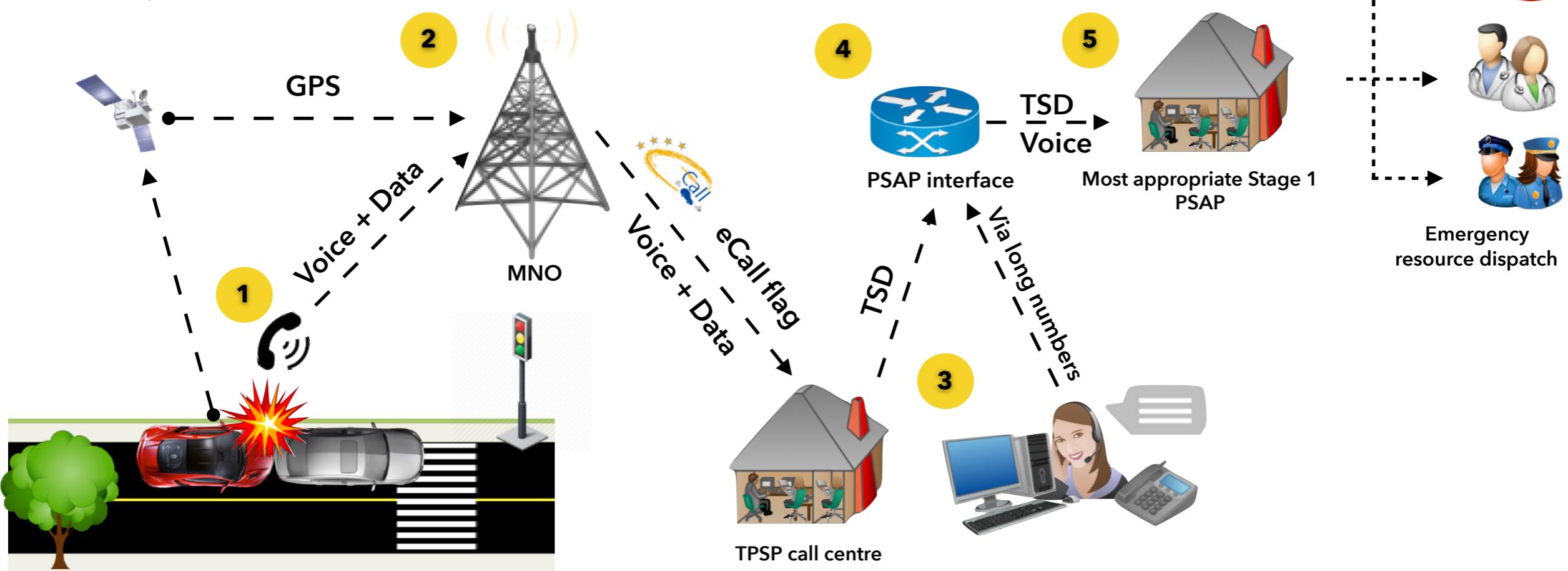
The most appropriate Stage 1 PSAP should filter the call, decode MSD, classify the accident type and transmit relevant information to Stage 2 PSAPs to dispatch emergency resources

In some cases, Stage 1 PSAPs have the ability to dispatch emergency resources directly



# TPSPs act as intermediaries in the eCall delivery ecosystem

- 1 An eCall is automatically triggered when a crash is detected or is triggered manually in the case of emergency
- 2 MNOs (Mobile Network Operator) put eCall flag to the call, detect the location and route to the TPSP call centre
- 3 TPSP receives eCall & dataset, filters false call, classifies accident type and collects MSD & optional additional data
- 4 TPSP contacts the most appropriate Stage 1 PSAP via Long Numbers and transmits TSD (TPS Set of Data) via PSAP interface
- 5 The most appropriate Stage 1 PSAP\* or eCall PSAP receives the call, classifies accident type and decodes MSD
- 6 Information is sent to Stage 2 PSAPs for emergency resource dispatch



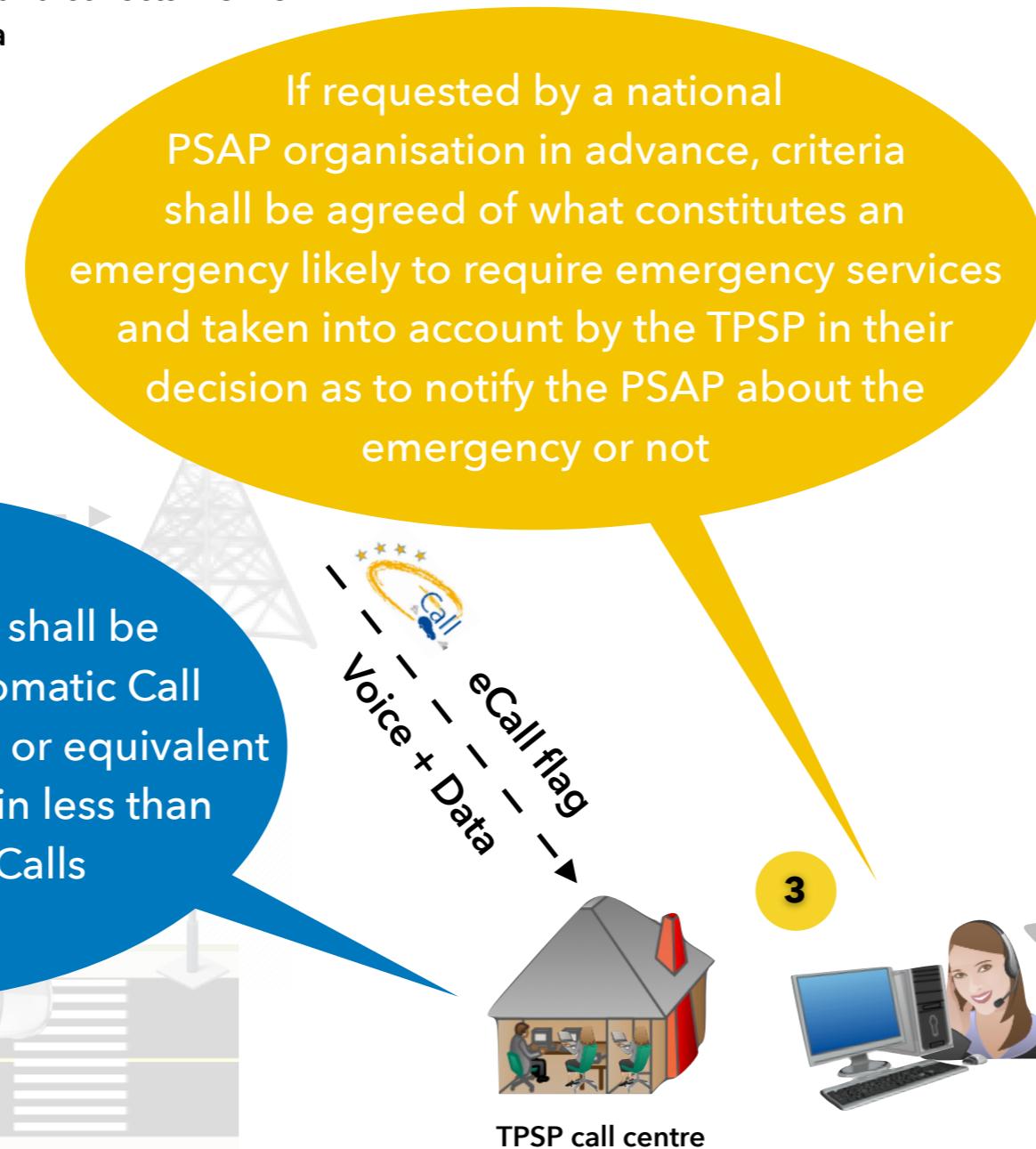
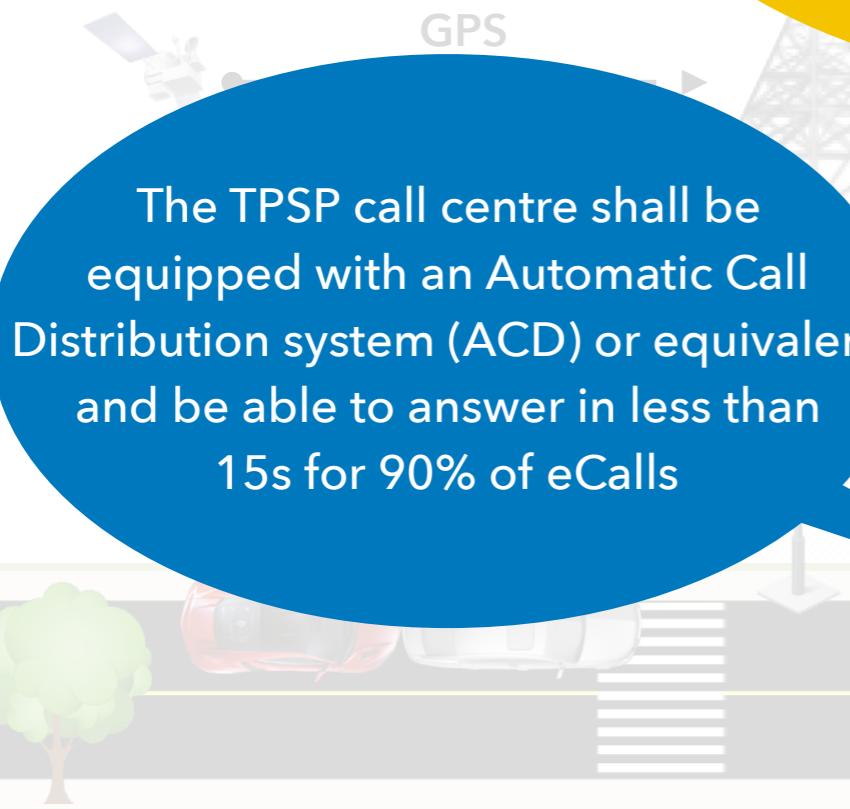
# TPSPs' call centres should operate in accordance to EN 16102 standard which specifies TPS-eCall operating requirements

3

TPSP receives eCall & dataset, filters false calls, classifies accident type and collects MSD & optional additional data

If requested by a national PSAP organisation in advance, criteria shall be agreed of what constitutes an emergency likely to require emergency services and taken into account by the TPSP in their decision as to notify the PSAP about the emergency or not

The TPS operators should not use more than 90 seconds to filter the call and classify accident type before contacting PSAPs



TPSP call centre

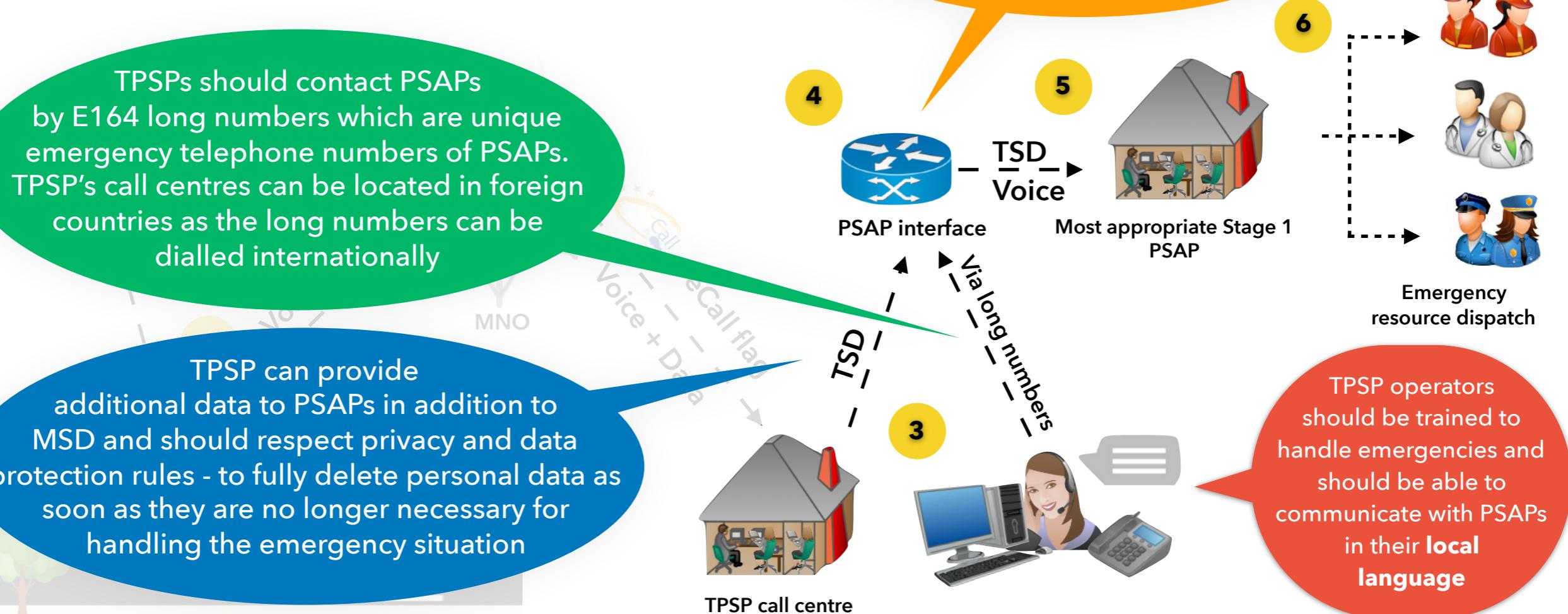


TPS eCall operators are not obliged to be fully dedicated to answer to eCalls only

# TPSP should comply to PSAP Service Level Agreement and respect data privacy rules described in European Directives

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TPSPs must conform to the PSAP requirements and adhere to the Service Level Agreement (if such standard exists in the country) to define the emergency notification method and use of PSAP interface



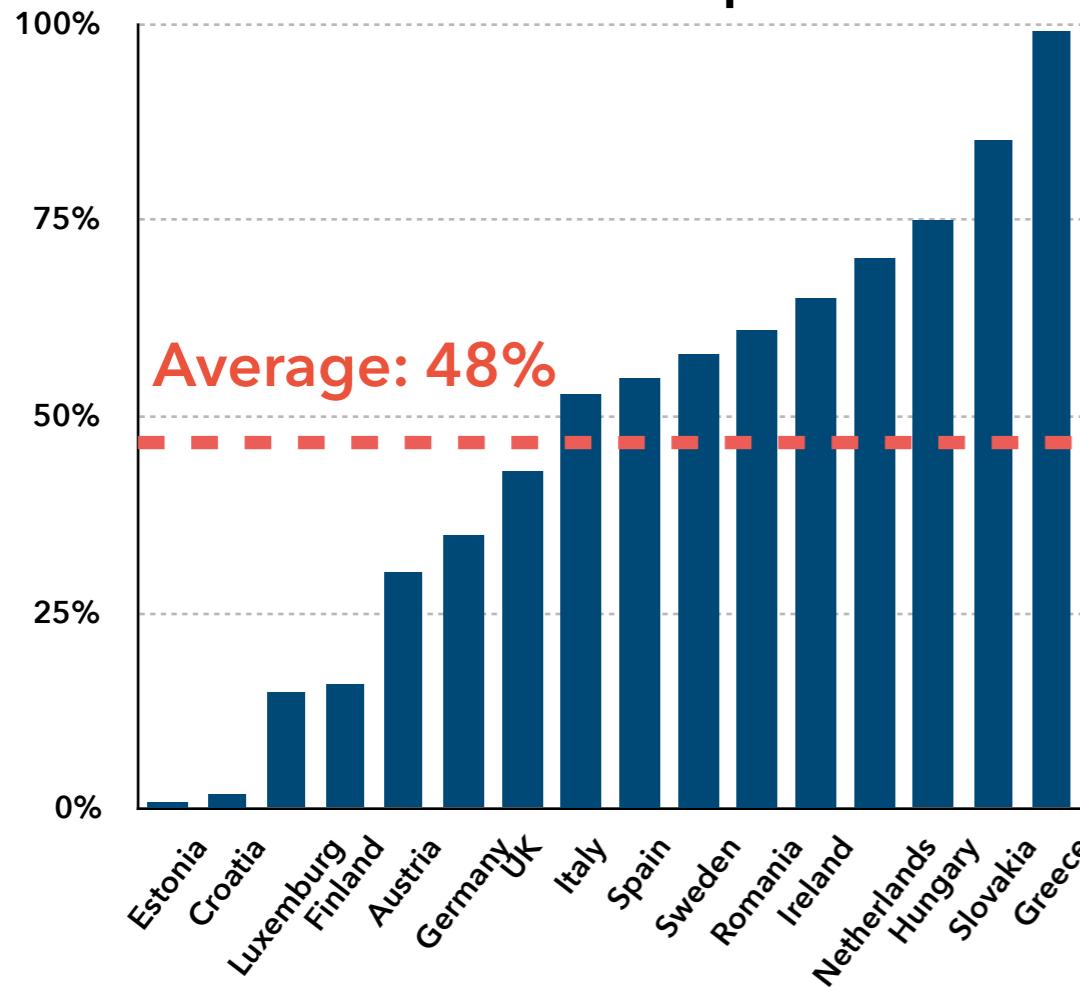
# 50% of emergency calls are false calls and many do not require emergency services



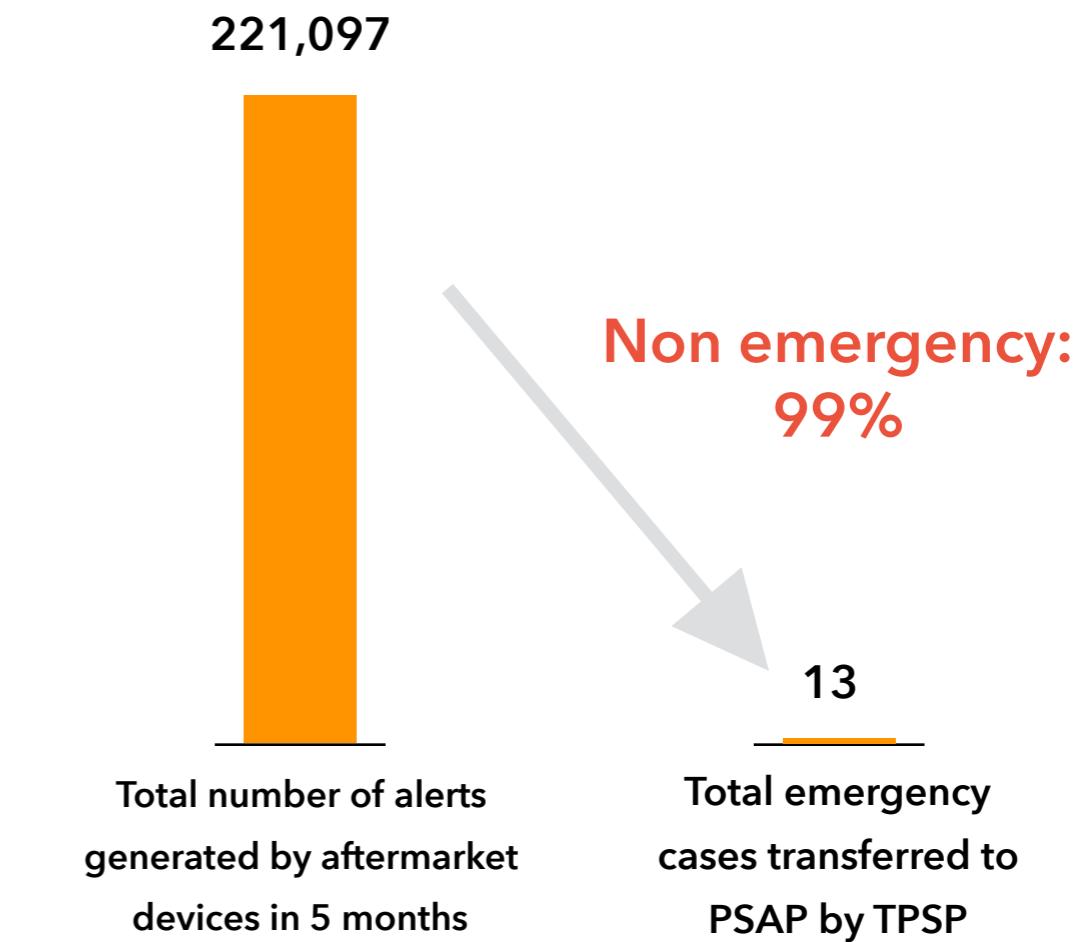
## Call filtering

TPSPs bring the most value in filtering calls for PSAPs, as a large number of eCalls are false calls

Percentage of false emergency calls in Europe\*



Percentage of non-emergency alerts of Italian aftermarket solutions



## There are clear areas where TPS eCall can bring value to PSAPs



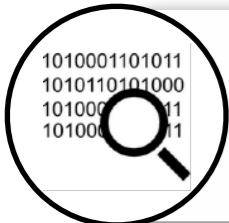
### Call filtering

TPSPs bring the most value in filtering calls for PSAPs, as a large number of eCalls are false calls



### Flexibility & scalability

As the number of vehicles with mandated eCall function grows, increasing workload will be required for PSAPs, TPSP call centres can scale up quickly



### Additional data to MSD

Additional data such as airbag deployment, level of force and drivers' personal telephone number can assist emergency service dispatch



### Aftermarket eCall

There will be a growing demand for aftermarket eCall, requiring TPSPs to be involved. Direct connection TPSP-PSAP will significantly improve the emergency services quality



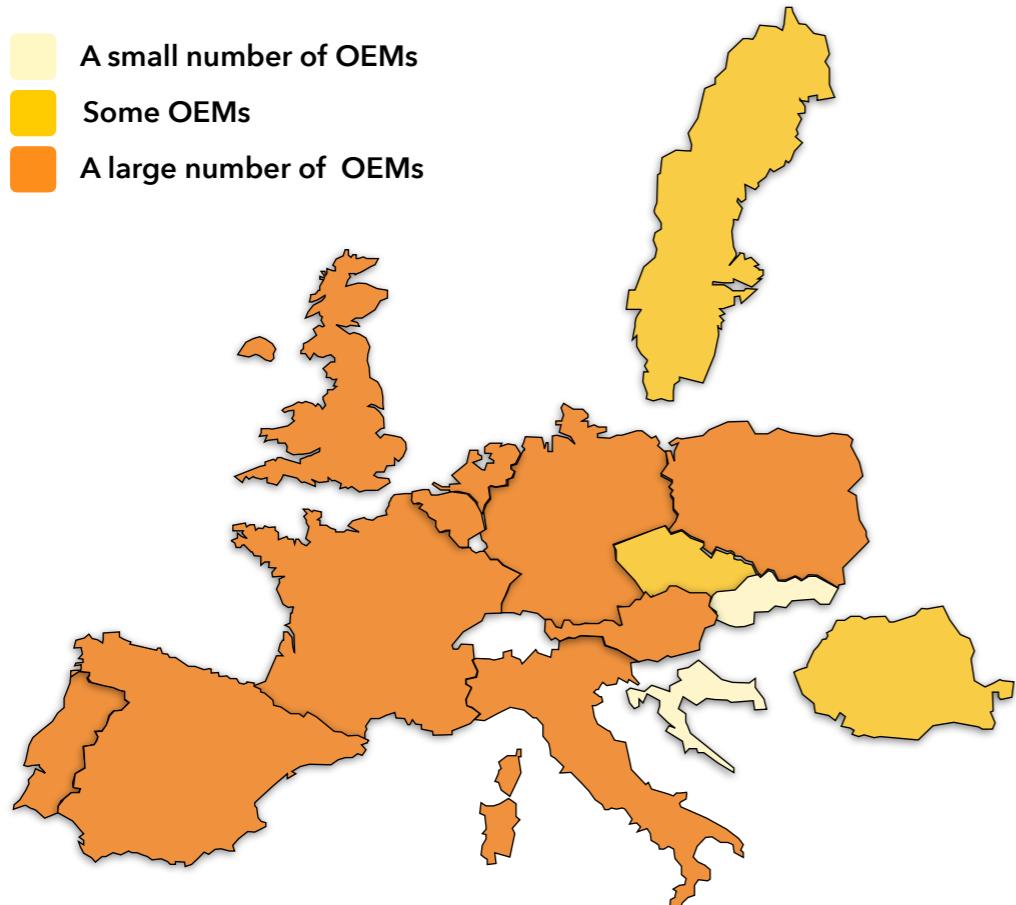
### Language

TPSPs can provide service in the driver's preferred language, which add significant value in cross border trips and in emergency cases

# OEMs started to provide eCall long before the mandate

## OEM private eCall service availability *before the mandate*

- A small number of OEMs
- Some OEMs
- A large number of OEMs



**A large number of OEMs** provided private eCall services in **West European countries** before the mandate was implemented

OEMs that provided **eCall mostly bundled** the service with **bCall** and other connected services

**Strong OEM-TPSP relationships** are in place for **eCall** and **bCall** and increasingly moving to **more connected services**

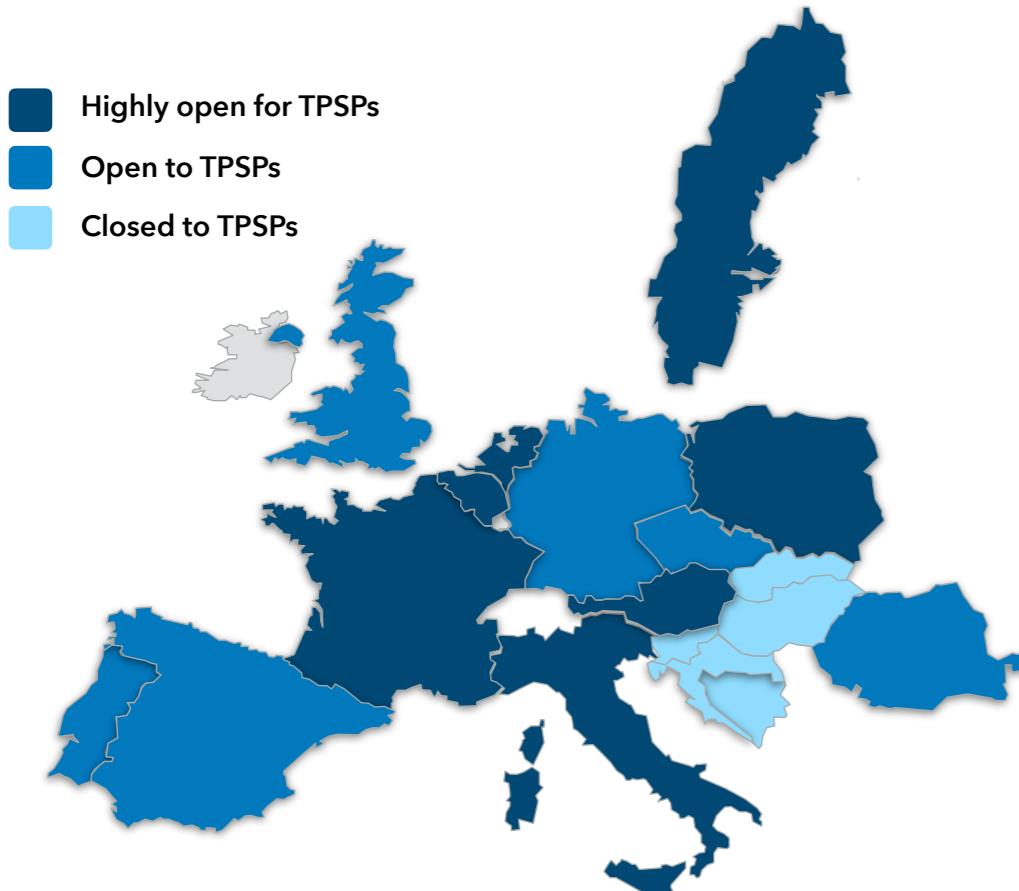
**Private eCall** services provided by TPSPs **are not regulated by the eCall mandate** regulations and will **continue to exist** in the future



# Western Europe is more open to TPSPs than Eastern Europe

*Some leading OEMs choose not to provide any private eCall in markets with restrictions for TPSPs*

**This is a LOSS for everyone!!**



## The closed and reluctant



Bosnia and Herzegovina



Croatia



Hungary



Slovakia

## The open yet complicated



Czech Republic



Germany



Portugal



Spain



United Kingdom

## The open and accessible



Austria



Belgium



France



Italy



Netherlands



Poland



Romania



Slovenia

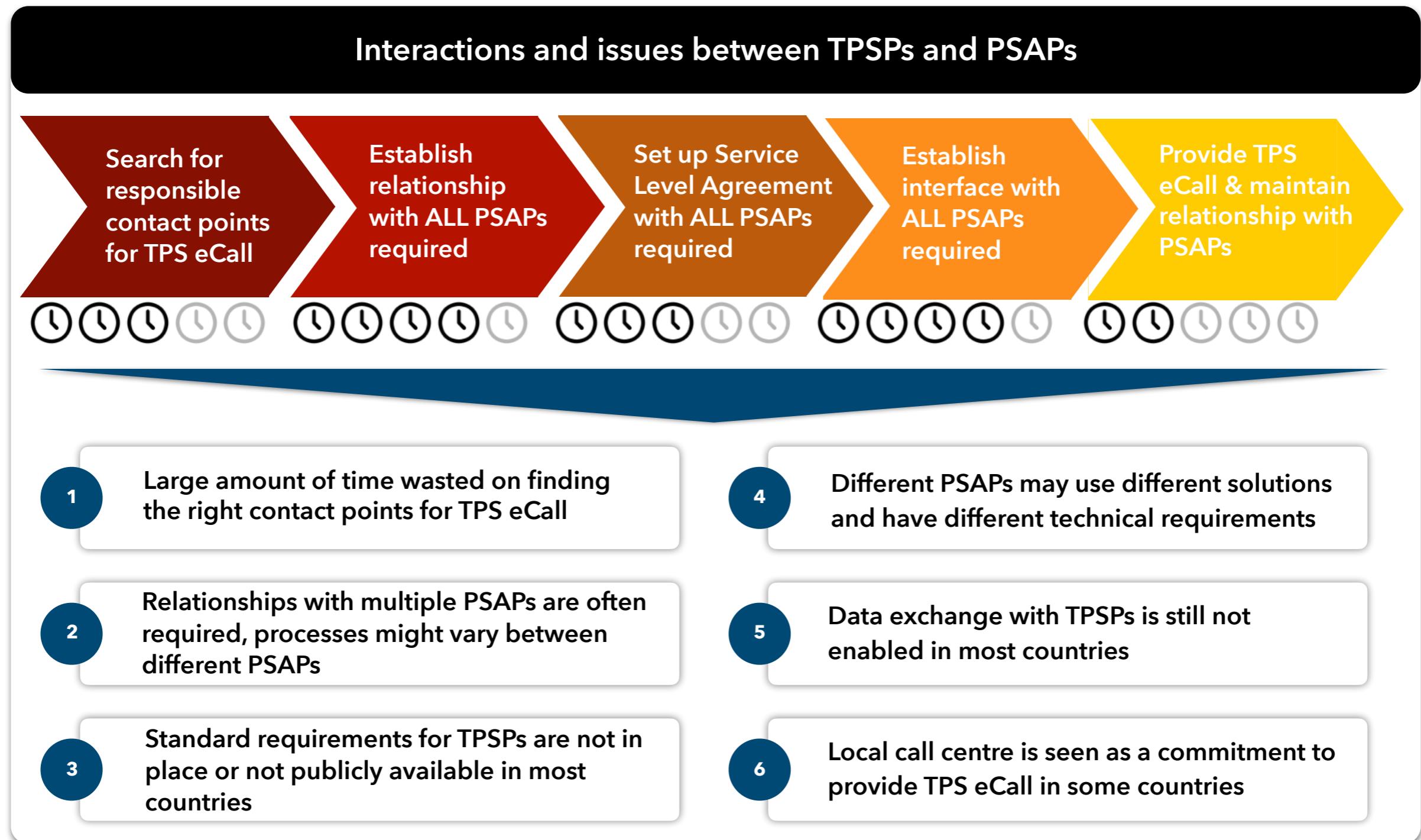


Sweden

### Assessment criteria:

1. Do PSAPs in the country **collaborate with TPSPs?**
2. Is the **PSAP structure** complex?
3. Are **requirements for TPS-eCall** in place? Are **processes to set up TPS-eCall** defined?

# Setting up TPS eCall is still complex and time consuming



# OEMs want a single partner to provide connected services

## OEM requirements for TPSPs

A

### Connected vehicle services



eCall



bCall



Other  
connected  
services

B

### Telematics solutions

a



#### eCall geographic coverage in Europe

OEMs are looking to cooperate with a single TPSP with an European level service

a



#### Direct link with PSAPs

TPSPs need to have direct links with PSAPs and mange relationships directly with them

a



#### Call centres

TPSP call centres need to be compliant to EN standards

a



#### Other connected vehicle services

OEMs are looking for TPSPs that are capable of providing multiple connected vehicle services

b



#### Telematics platforms

In addition to service provision ability, TPSPs that have telematics platforms are preferred by OEMs

# We see 3 potential areas to facilitate TPS eCall deployment

## STANDARDISATION



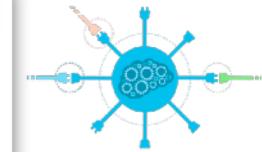
Standardise TPS eCall technical & service requirements



Standardise TPSP-PSAP interaction processes



## HARMONISATION



Develop common technical solutions for TPS eCall



Develop certification recognised by most PSAPs in Europe

## COMMON LOG



TPS eCall first point of common database



PSAP long numbers common database



Common log of standards & processes for TPS eCall establishment

# So what is the future of TPS eCall in Europe?



Contact Tong Wang for more information  
[twang@ptolemus.com](mailto:twang@ptolemus.com)

- As the **deployment of public eCall will be slow in the beginning** and only **limits to M1 & N1 new type approved models**, the volume of eCall will be low
- Therefore, the **investment in the infrastructure and human resources** from all parties to realise eCall will be underused
- TPS eCall and public eCall will be **complementary to each other**
- TPSPs will be able to **serve a wider vehicle segment** than the new type approved segment
- **Call filtering** done by TPSPs is one of the key benefits for PSAPs
- TPSPs' **flexible scale** will help to reduce PSAPs' **workload** in the future when more vehicles are equipped with mandated eCall
- Current TPS eCall deployment status implies that **more support is required from public authorities and PSAPs**
- This will allow **TPS eCall to become an effective intermediate link** in the emergency service process and **optimise the use of existing emergency service resources** at PSAP side

# PTOLEMUS Consulting Group

## **Strategies for Mobile Companies**

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