



Probe data WG

Call for participation



ITS Directive Specs (b) MS Expert meeting
10 October 2013

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ERTICO – ITS Europe

Overview

- Probe Data State of Art
- US-JPN collaboration
- Probe Data WG
- DK as an example
- Conclusions



Probe Data State of Art



Facts and Trends

Rise of navigation enabled devices



Source: Canalys, Nokia internal analysis

The in-vehicle & service landscape

Clear trend towards connected services

- Most European car manufacturers have connected car offering in market in 2013
- Rise of connected systems sales

Platform and technology open

- Most car manufacturers bringing multiple solutions: connectivity via Smartphone (tethering vs embedded), proprietary or 3rd party Apps and SDK, proxy solution.

The mobile phone landscape

6.8 Billion mobile phone subscriptions

Devices are changing in variety and volume.

Source: HERE



The Rise of Big Data

- Today data generated every day is **greater** than the entire US Library of Congress
- The amount of data generated daily **doubles every** two years
- In the past, the vast majority of data was produced by humans, but now **machines are becoming large creators of data**



Data ≠ Information



The Challenges of Big Data

- Need to take advantage of real-time data inputs **from many sources**
- **Filter, process and classify** the data into meaningful information
- Deliver the **right information** at the **right time** back to the users



Generating traffic data

Source: TomTom



TomTom Traffic – Incident and Jam Information

Probe Data State of Art



Source: TomTom

File contains information ONLY
for the road stretches affected by incident/congestion



Example of how it appears on TomTom PND



Smart Data – Supporting Road Safety

Provides analytics for road planning and future infrastructure development

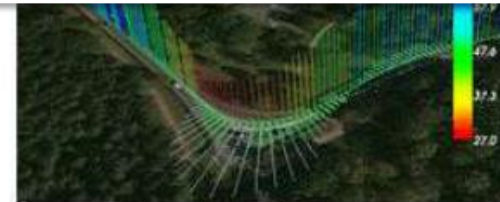
Map how drivers behaved when negotiating a sharp turn



First Point of Breaking



Enable concept of co-pilots in cars, trucks, busses, trams, trains, ships, planes, etc



Source: HERE

US-JPN collaboration on Probe Data

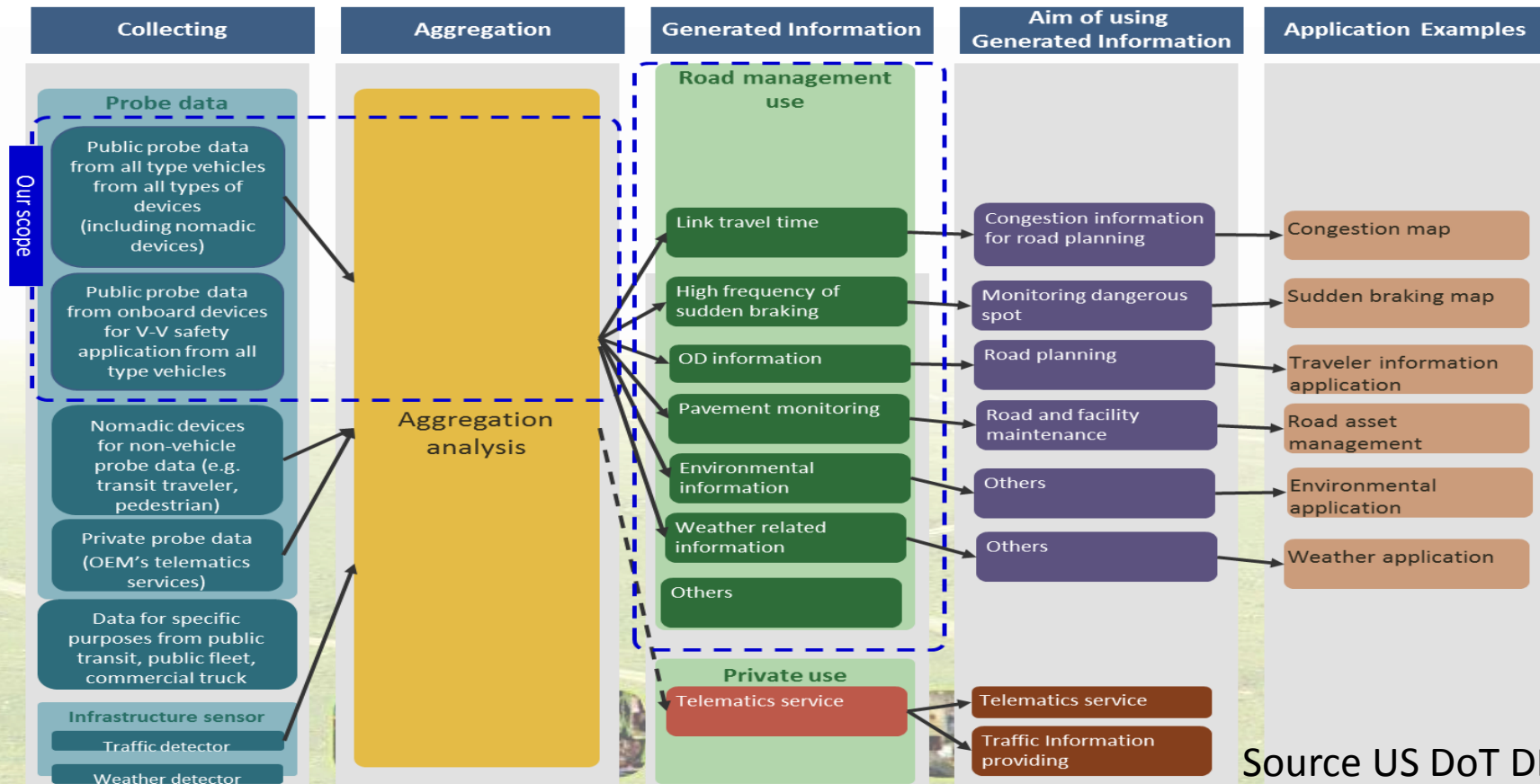


Probe Data US-JPN collaboration

- US-JPN cooperation focussed on the benefit of Probe Data for the **Road Operators**
- Building up on eventual fitment of **V2V/V2I** on vehicles
- Initial focus on services using post-processed data for **road operations, maintenance, modelling**, etc
- Second focus on real-time processing for **traffic management**



Probe Data US-JPN collaboration



Consolidated List of Applications US-JPN

ID	Application	US	Japan
1	Estimate traffic management measures (e.g., travel time, speed, delay)	✓	✓
2	Identify bottleneck locations	✓	✓
3	Identify accident-prone locations		✓
4	Determine road closures/detour routes (at the time of disaster)		✓
5	Detect stopped vehicles or obstacles on the roads	✓	✓
6	Identify duration of congestion	✓	✓
7	Determine pavement traction conditions	✓	✓
8	Identify HazMat vehicles		✓
9	Incident management/Emergency response	✓	
10	Route guidance	✓	

Source US DoT DRAFT



Consolidated

List of Applications US-JPN (cont.)

ID	Application	US	Japan
11	Traveler information	✓	
12	Intelligent signal systems	✓	
13	Freight operations	✓	✓
14	Transit operations	✓	
15	Intelligent network (freeway/arterial) flow optimization	✓	
16	Eco-Signal Operations	✓	
17	Eco-Lanes	✓	
18	Dynamic Low Emissions Zone	✓	
19	Road and infrastructure deterioration diagnosis		✓

Source US DoT DRAFT



Selected common applications (US-JPN)

US-JPN collaboration

- *Traffic Management Measures Estimation*
- *Dynamic Speed Harmonization*
- *Road Weather Management*

*Almost all discussions are assuming that
V2V/V2I Probe Data will be deployed*



iMobility Forum Probe Data WG (PDWG)



Mission

What mobility services can we achieve together
with Probe Data and for whom?



Scope of Probe Data

Vehicle-centric vs Multi-Modal?

→ Vehicle-centric first then
extension to Multi-Modal



PDWG: Topics of interest

- Governance of European Probe Data
- Policy and research needs
 - ITS Directive until 2017 and after?
- New generation data collection
 - V2V/V2I: a game changer for PA?
- Assess cost/benefit of Probe data vs other means
- Transversal issues: privacy, security, ownership, quality

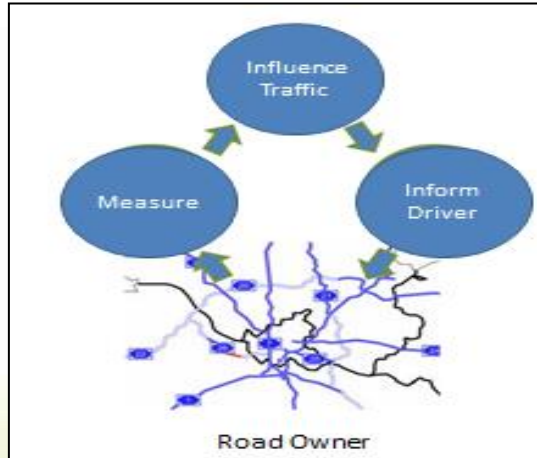


Objectives

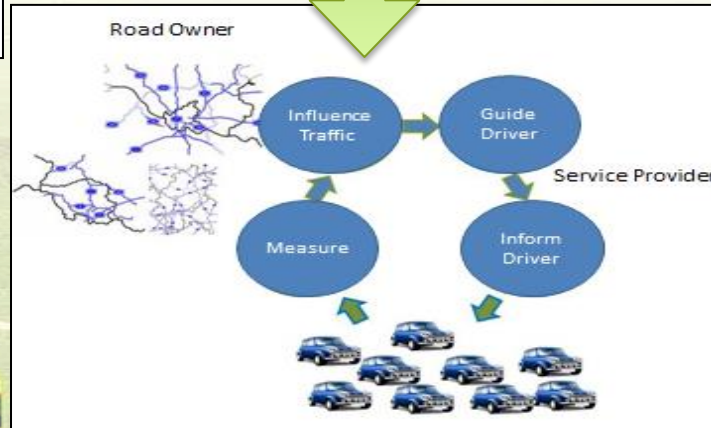
- Define Probe Data scope
- Raise awareness of collected Probe Data
- Select **public-domain services** that could benefit from probe data
- Identify what it takes to **enable** these services
 - Data chain, Roles, Responsibilities,
 - Possibly propose Public Private cooperation
- Clarify issues related to privacy, security, ownership, quality....
- Identify research needs, pilots, awareness campaigns, PP, Policy support
- Identify relevant standards for EU and asses the need for harmonization
- Support (and align with) the trilateral EU-US-Japan collaboration on Probe Data



PDWG linked initiative: TM2.0



New generation of
Traffic Management&Control
integrated with
navigation systems



*Initiative of
navigation devices
and traffic management
industry at ERTICO*

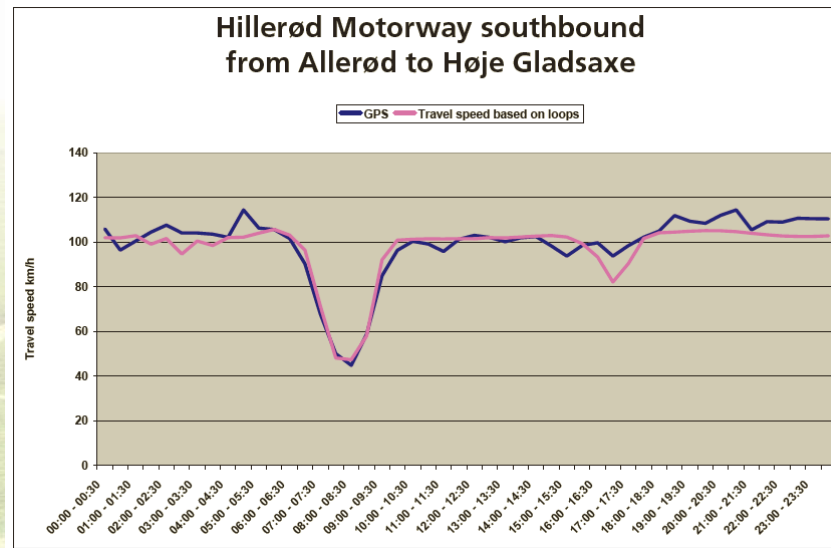
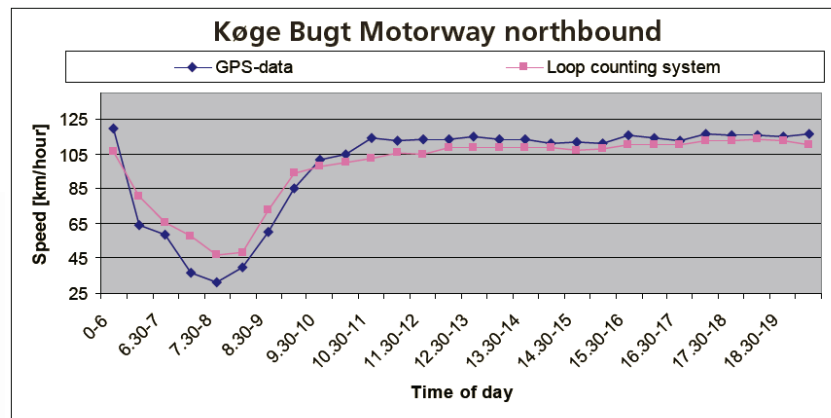
Source: ERTICO/Tomtom

DK GPS project

- Travel speed covered on 77% of major road network (10kkm) using HERE Probe Data*
- Detection of speeds with PD similar to current loop counting systems (Cross-section and Segment)

* criteria: Min 10 observations/segment/30min

Source: Danish Road Directorate



Conclusions

- Probe Data can be a **powerful tool for public authorities** in the near future leading to substantial **ITS infrastructure savings**
- The iMobility Probe Data WG wants to clarify this potential by **bringing current actors with the PA**
- **V2V/V2I data probing** is seen as a game changer; US and Japan have done the first steps planning the use of this data

