Day 1     Physical and Digital Infrastructure

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President TN-ITS
BUILDING AND MAINTAINING THE DIGITAL INFRASTRUCTURE REQUIRES AN INTELLIGENT & HOLISTIC APPROACH

INTELLIGENT MAPMAKING

Mobile Mapping  Field Survey  Active Community Input  Probe Data

Authoritative Sources  Sensor Data

TRADITIONAL METHODS  COMMUNITY INPUT
CONNECTED & AUTOMATED DRIVING FUELS THE NEED FOR MORE SOPHISTICATED & DETAILED MAPS
PREREQUISITE:

TRANSACTIONAL MAPMAKING PLATFORM

PUSHING THE BOUNDARY TOWARD THE MOST REAL-TIME MAPS
TOMTOM’S DIGITAL INFRASTRUCTURE EMPOWERS SYSTEMS & USERS TO MAKE SMARTER MOBILITY DECISIONS

Mobile Usage

Navigation

Ride Planning

Drive Range Calculation

Internet of Things

Autonomous Driving
HD MAP DELIVERS
HIGH ACCURACY & FULL ATTRIBUTION

**Highly Detailed**
(objects which can be seen)
3D lane geometry:
Lane markings
Drivable surface borders
Road boundaries

**Highly Accurate**
Sub meter absolute
Decimeter level relative

**Richly Attributed**
(including inferred attributes)
Lane level attributes:
Speed restrictions
Lane centerlines
Lane widths
SCALABLE & COMPACT LOCALISATION INFORMATION

Robust
Resilient towards changes in reality or map version

Scalable
Low storage
Low processing

Highly Accurate
<0.5 m longitudinal and <0.15 m lateral accuracy
HD & ROADDNA
US MAINLAND INTERSTATES COVERED! EU to follow!
USING AI FOR TRAFFIC SIGN COLLECTION – step 1

Mobile Mapping

LIDAR sign detection

Human classification
USING AI FOR TRAFFIC SIGN COLLECTION – step 2

• 100M classified traffic signs
• 100 traffic sign categories
• Allows to apply **Supervised Learning** & DNN
• Training Classifiers by changing parameters until an error is corrected
• Applying the DNN results in high accuracy level for classification
• Unclassified – Misclassified observations are revised by humans & serve to improve the DNN
• High quality: low false positives/negatives
• Reliable reference layer in a Digital Infrastructure
MAINTENANCE OF A DIGITAL INFRASTRUCTURE WILL REQUIRE HARMONIZATION & COOPERATION

• Hence TomToms active involvement in (pre) standardization

• Industry: NDS

• Authorities:

Open AutoDrive Forum

CARTRE
Coordination of Automated Road Transport Deployment for Europe

Road Event Reporter

03–04 April 2017 Brussels

European Commission
What is TN-ITS

Why?

- TN-ITS helps road users get fresh map data from the road operators to the vehicle’s navigation systems

- By bringing together map makers and public authorities and supporting EC policy to update static road data effectively and ensure a seamless data chain

Implementation

- Provide guidelines, tools and services supporting pioneers of implementation including Belgium, Finland, France, Ireland, Norway, Sweden, and United Kingdom.

Standardisation

- Define & maintain TN-ITS specification in CEN/TC 279/WG7

Join us!

Learn more on tn-its.eu or get in touch with us at info@tn-its.eu

Rolling out TN-ITS Service in Europe - Status

Dark blue: TN-ITS implementations done in 2014/15 in the Transportation Pilot
Light blue: TN-ITS implementations in 2016/17 in the CEF-funded EU EIP project
THANK YOU

Any questions?