



eSafety Forum

“Digital Maps” Working Group

**Yiannis Moissidis - VP Industry Relations NAVTEQ
Europe BV**

Co-Chair of the eSafety “Digital Maps” Working Group

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ITS World Congress San Francisco
Special Session 27
“ADAS Horizon – How Digital Maps can
contribute to road safety**

eSafety Objective

Road safety is a major concern for all of us..... In 2000, road accidents killed over 40000 people in the European Union and injured more than 1.7 million.

EC policy goal: Reduce the number of road fatalities with 50% by 2010.

Hypothesis: In-vehicle component technologies, infrastructure and digital map technologies will combine to achieve maximum gains in customer safety

Questions:

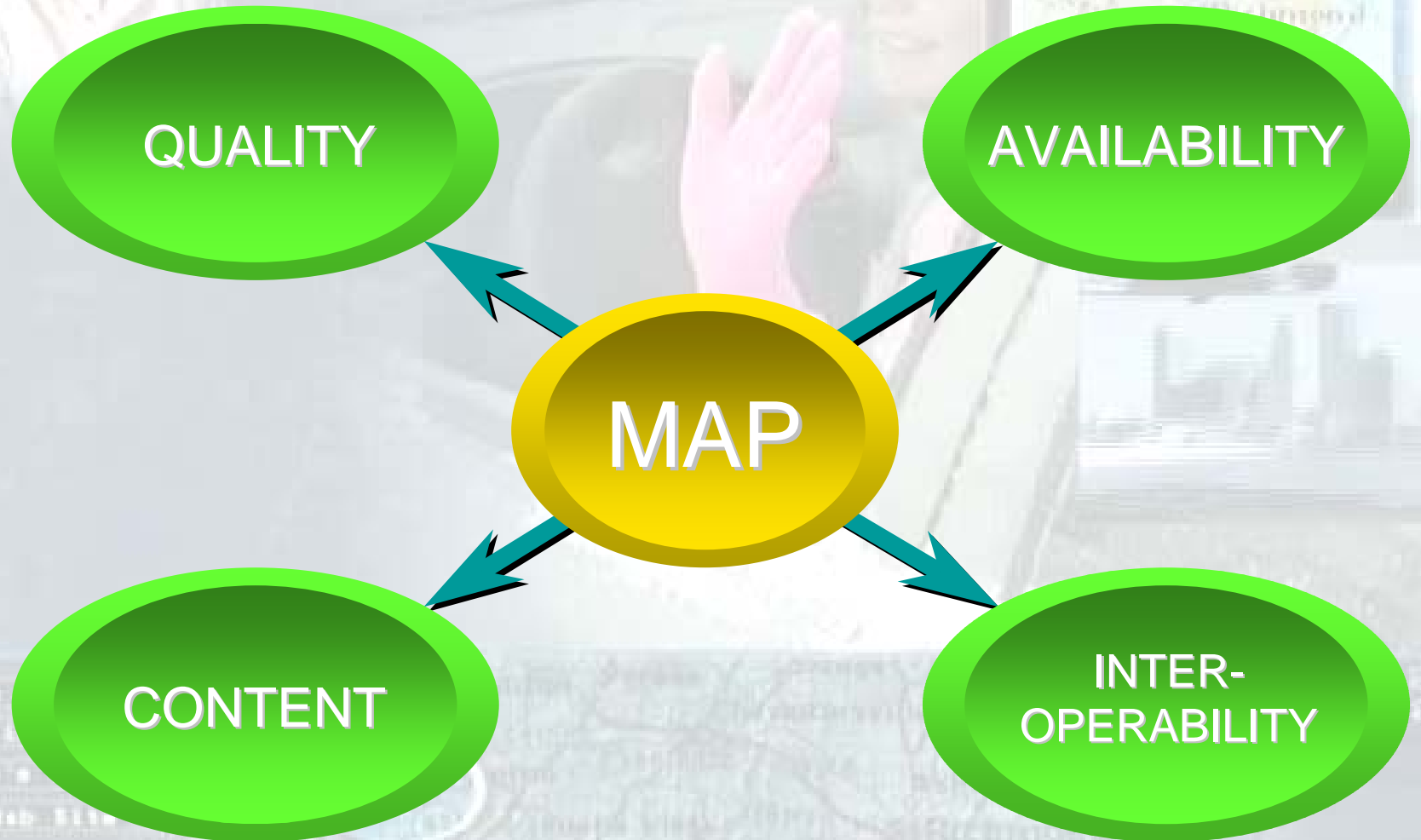
- Can road safety be improved using these three levers?
- How can digital maps play a role in linking both in-vehicle and road infrastructure for improved customer safety?

eSafety – Recommendation 11

Digital Map Database

Define requirements for a European digital road map database, with agreed road safety attributes. Create a public-private partnership to produce, maintain, certify and distribute this database. *Mapping industry, 2004*

Map database a critical success factor



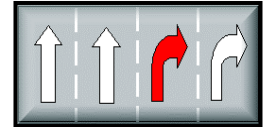
The eSafety Map Challenges

- How to realise the uniform European eSafety Map?
 - Extend current navigation maps fundamentally
 - Improve Map Data Quality fundamentally
- High investments required
- Solutions
 - Optimize data collection and processes: No final solution due to inherent latency problem
 - Optimize data flow from public to private sector: No immediate solution due to public sector variance
 - A combined solution is required
 - Clear map requirements to support eSafety
- The private mapping sector started: The eSafety map for the major roads

Deploying eSafety Attributes – here we are today

- Extended Lane Guidance

- Lane information in the digital map is used to guide drivers safely over complex intersections and complex motorway junctions
- Required: Lane information (number, connectivity, symbols, ...)



- Speed limit information

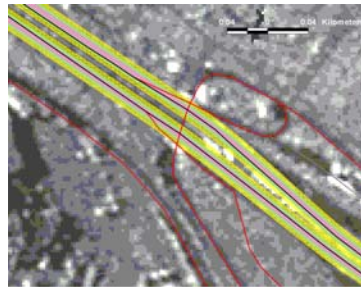


Weather Dependent Speed Limit

Time Dependent Speed Limit

Weather Dependent Speed Limit (i.e. snow)

- Enhanced Road Geometry



- Coverage: Continental/Global Coverage on major roads ONLY today

Optimise Public Private data flow

- Private collection methods can only register existing information
- A direct information from the birth of the information to the map is required
 - Public authorities are in charge of the Birth
 - A Public-Private Cooperation is required
- Individual and cooperative efforts of both government bodies and private sector → Thus, eSafety Working Group 11 “Digital Maps”: Business Models
- European Projects Maps&ADAS (Prevent), SpeedAlert, EuroRoads and SafeMap: Technical implementation

Objectives

Objectives of the Digital Map Working Group:

To define a business model for Public-Private partnerships that will ensure the availability of attributes relevant to eSafety in digital maps;

To create Public/Private cooperation model to collect, maintain, certify and distribute the eSafety attributes that can be integrated into the digital roadmap database

WG Digital Map safety attributes

- Legal speed limit
- Traffic signs
- Lane information (number, width, divider, connectivity)
- Traffic lights
- Crossings (pedestrian, tram)
- Accident hot spots
- Slope (gradient)
- Banking (transverse gradient)
- Accident hotspots
-

WG Digital Map Conceptual approach

The following 3 phases are proposed:

Phase 1 : Focuses on " **COOPERATION** "
(Supply of safety attributes in the form that they are currently available at Public Authorities)

Phase 2 : deals with " **QUALITY ASSURANCE** "
(Standardisation of information provision and output quality testing)

Phase 3 : Takes care of " **OPTIMALISATION** "
(Standardisation of transfer format and transfer media and optimisation of the transfer process)

WG Digital map Phase 1

Phase I: How do/can cooperate (Public & private)?

- Phase I supports cooperation between public and private in the provision of the safety attributes and their updates from the public authorities to the public.
- Questions and constraints what have arisen during the meeting on Phase I were:
 - a. Are these attributes available with the public authorities and what are the obstacles in finding them?
 - b. The availability of the safety attributes varies at the Public level among the different Public authorities.
 - c. Can we ask the Public authorities to register the safety attributes?

Conclusions: Phase 1

It was agreed by the Working Group that:

The list of the safety attributes that has been agreed in the EU funded project “MAPS&ADAS” will form the basis of safety attributes considered by this WG.

MAPS&ADAS will provide definitions of the individual safety attributes according to European Standards. This output will be provided to the European Commission as the reference document for safety attributes towards the Public Authorities. The acceptability of output will be “market tested” by the WG in order to ensure its suitability.

The WG will strive to create synergies with the other related EU funded projects like EuroRoadS, SpeedAlert, Highway and INSPIRE and examine conflicts.

WG Digital map Phase 2

Phase 2: Qualification

- Is to define and implement guidelines and procedures to qualify the safety attributes.
- Reasoning and objectives that justify this qualification are :
 - Reduction of any liability and burden for using these qualified safety attributes in the safety related applications by the car manufacturers
 - Help public authorities improve their quality and their methods related to the safety attributes collection, registration, maintenance, etc.

WG Digital map Phase 3

Phase 3: Qualification (Standardization)

- At this phase, the process will be optimised based on the experience of Phase 1 & 2

After Phase 1, eSafety Working Group “Digital Maps” will be acting on behalf of the High Level Steering Committee of the eSafety Forum as a Steering Committee to monitor the implementation of the all 3 phases.

Let's together create success: Work Plan

Preparation Working Group	Plenary Working Group
Kick off meeting – April 18 th , 2005	
Prepare Draft Document - May 30 th , 2005	
	1 st Plenary meeting – July 1 st
Collect, discuss feedback and prepare 2 nd Plenary document – Sept 9 th	
	2 nd Plenary meeting – Sept. 30 th
Collect, discuss feedback and prepare 2 nd Plenary document – October 11 th	
	3 rd Plenary meeting – Nov. 19 th
Prepare final document for High Level SC	
	High Level Steering Committee meeting, beginning 2006



Thank you for your attention

Yiannis.moissidis@navteq.com