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# Using Public Sector Data for Advanced Driver Assistance Systems

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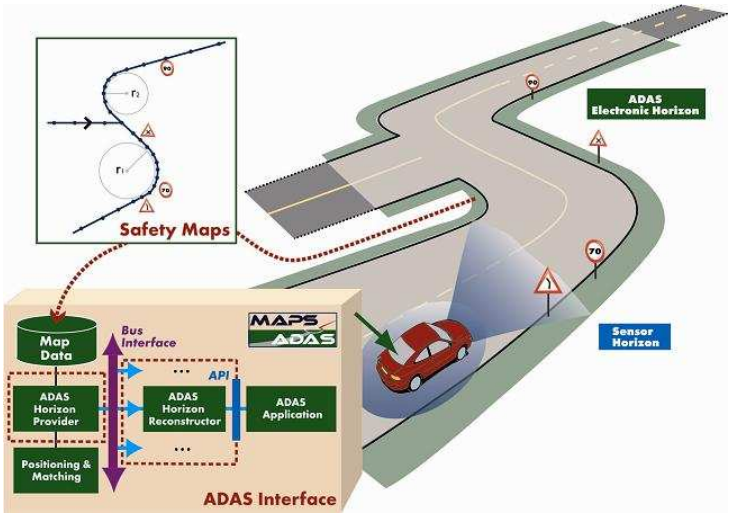
# The Premise

- Indications are that digital map data used for ADAS in passenger cars will be supplied by current navigable map data suppliers.
- Public road sector organisations, particularly the national road authorities, regularly collect data that could be of high value for ADAS applications if it could be delivered in a form acceptable to all market players. Examples of data

**ADAS Electronic Horizon**




**Slope**

**Banking**

**Bridge Heights**

**Speed Limits**

**Vehicle Type Restrictions**

# The Problem

- Information contained in the current navigable map databases is not sufficient to perform the required vehicle control and driver assistance functions.
- Public sector map data is not easily transferred to the navigable map databases. There are mismatches with:
  - Spatial Data Model
  - Geographic Reference System
  - Transfer Format

**Hazmat restrictions**

Prohibitions for vehicles carrying dangerous goods

Recommended parking place for vehicles carrying dang. goods


Recommended road for vehicles carrying dang. goods

**Warning attributes**

Steep hills (slopes)


Sharp curves

Truck accidents from period 2003 - 2006

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# Digital Map Databases: Why they build them

| Road Authorities | Land Surveys | ITS Map Producers |
|---|---|---|
| Design | Measure | Navigate |
| Build | Record | Track |
| Maintain | Visualise | Search |

# Digital Map Databases: How they build them

| Road Authorities | Land Surveys | ITS Map Producers |
|---|---|---|
| Country Datum | Country Datum | Lat-Long |
| Chainage Model | GIS Model | GDF Model |
| Physical Attributes | Cartographic Att's | Navigable Att's |

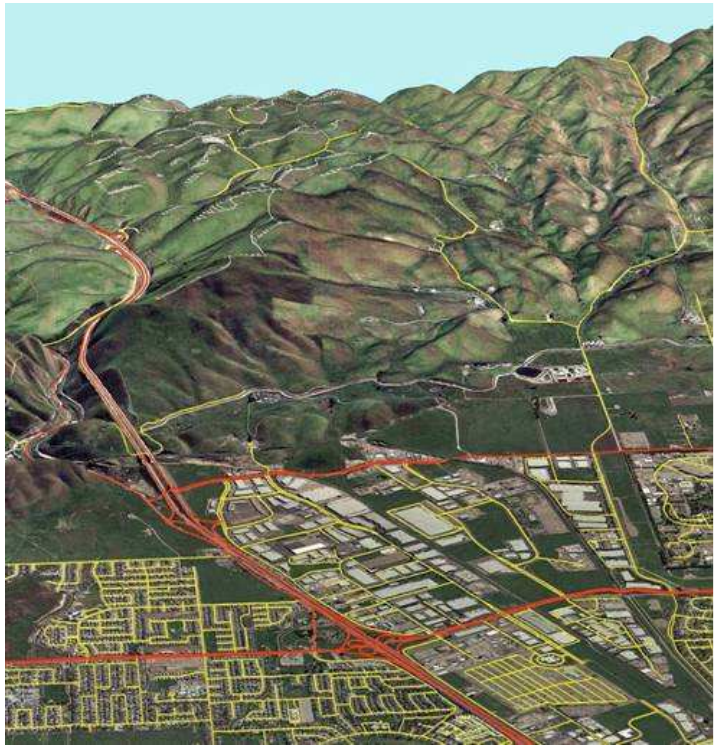
# Resolving the Issues

- Convert data to common geographic reference system: WGS84.
- Agree on functional road class names.
- Agree on data transfer format: SHAPE or EuroRoads
- Match locations using a location referencing method: AGORA-C
  - Name(s) of road(s)
  - Functional Class, etc.

**The top of a truck is given a shaving because of a mismatch between the height of the truck and the clearance of the overpass.**

# Conclusions and Future Work

- There are significant differences between the way that national road authorities and commercial map data suppliers collect and store their road-related information, but that does not mean that the data are incompatible.
- Methods exist to integrate useful data and make it available for ADAS applications.
- More focus needs to be given to cooperation, especially to develop a consistent, multi-country data pricing policy.



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# Thank you

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