INSPIRE data for automatic driving

Workshop „Use of INSPIRE data“, 27.11.2018, Warsaw
Goal of geodata management

- Delivery of data that is provided by law from administrations (INSPIRE):
  Traffic network, Elevation, Buildings,
  Environmental monitoring facilities, Meteorological geographical features

- Delivery of additional thematic data
  e.g.: Open Data of road engineering and management, Open Street Map,
  weather and climate data, traffic situation

- Preparation and structuring of data to combine them with the dynamic data produced by cars
INSPIRE – Traffic network
INSPIRE – Road network
INSPIRE – Road network

- VehicleTrafficArea
- RoadLink
- RoadArea
- Road or ERoad
- RoadLink
- RoadNode (e.g. roundabout)
- RoadArea
- RoadNode (e.g. junction)
- RoadServiceArea
- RoadArea
- RoadLink
- RoadArea
- RoadLink
- RoadNode (roadServiceArea)
Basic model: Tetrahedron
Network model - Street
Network model
Street

NetworkElement
RoadEdge
- line: GM_Curve
- segm_begin: GM_Point
- length: int [0..1]

RoadSegment
- begin: double [0..1]
- end: double [0..1]
- direction: YX_direction

RoadSection
ordered
begin end
0..1

RoadDirection
- direction: YX_direction

RoadJunction

NetworkConnection

RoadSourceSink

NetworkPort

«enumeration»
YX_direction

inDirection
oppositeDirection
bothDirections
Network model
Lane

NetworkElement

RoadLane
  - line: GM_Curve
  - segm_begin: GM_Point

RoadLaneSegment
  - begin: double [0..1]
  - end: double [0..1]

NetworkPort

ordered
begin
end
Network model
Properties

- Parameter: YX_parameter
- dateTime: TM_object [0..1]
Network model
Examples
Network model
Examples

Legend
Segment: parking prohibited
 Segments: average car speed
Conclusions

• Simple data model
• Less object classes
• Common and repetitive structure

• Accuracy:
  – topological model: street – undirected
  – functional model: lane – directed
  – segments for exact position of all road features and traffic conditions

• Depiction of any properties
  – expandable
  – same structure
  – any resolution of the street
Thank you for your attention!