
# European initiatives and perspective on speed limit information in digital maps

Maxime Flament, ERTICO – ITS Europe
m.flament@mail.ertico.com

# Headlines

- Transport Scotland
  - "Each £1 invested in Road Condition provides an economic benefit of £1.60"
- Roads Service, Northern Ireland
  - "Each £1 underspent on maintenance means that the backlog grows by £1.60"

- Road maintenance and operation planning
  - "Each XX€ invested on "ITS spatial data" provides an economic benefit of YY€"

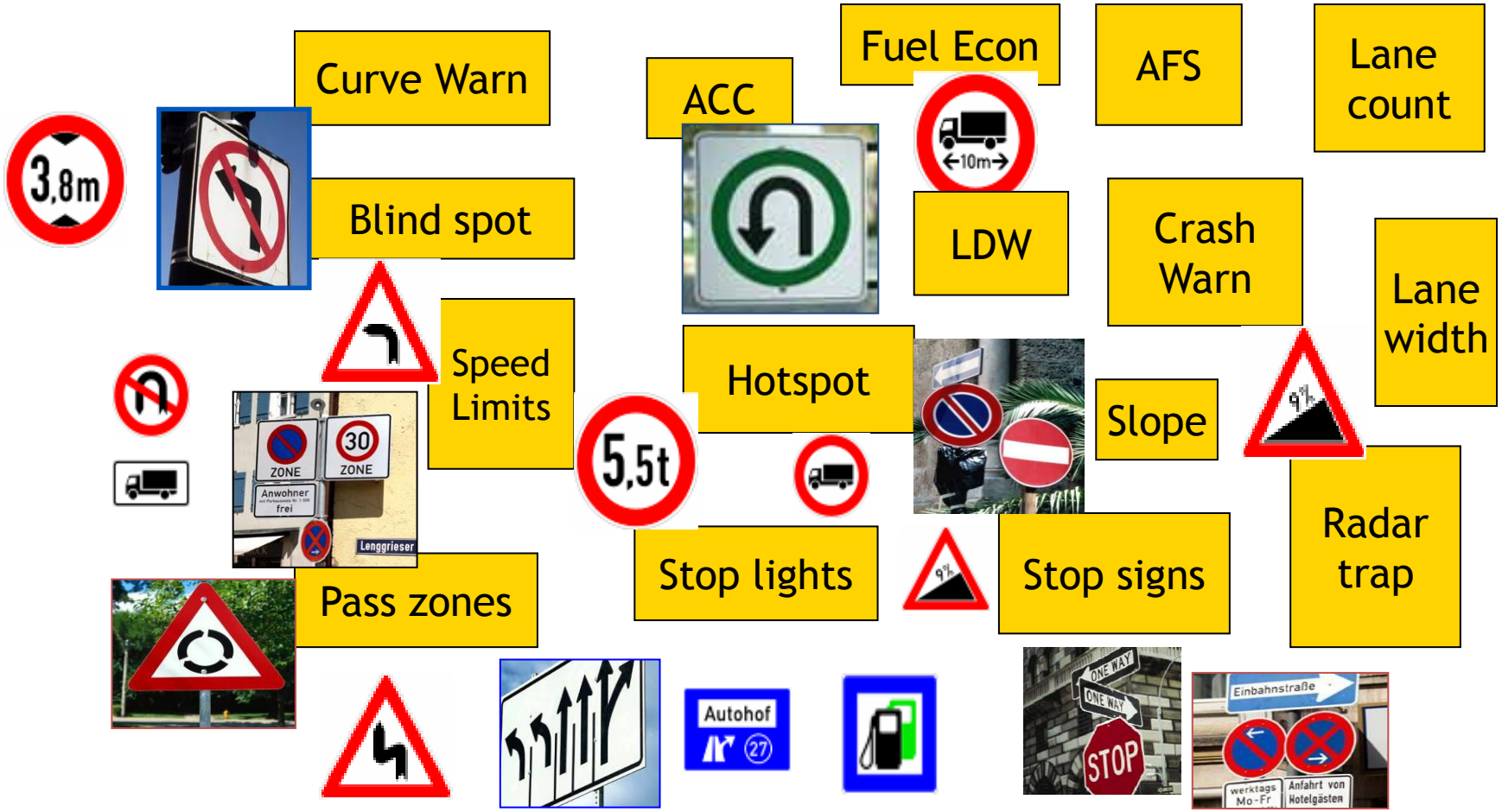
# Why all the fuzz on ITS Spatial Data (1/2)

- Data sharing as an enabling factor
  - Public Sector Information PSI Directive (2003)
  - IP/11/1524: DA: Turning government data into gold
  - Data is only worth something when it is used
  - Share ITS Spatial Data and ten-fold its value!
  - Let the market players “cook” your data
- Bring societal benefits
  - Innovative ways to contribute to road safety
  - Control your traffic with better routing (i.e. less undesired through-traffic)

# Why all the fuzz on ITS Spatial Data (2/2)

- Rethink your road operations and maintenance
  - Digitise to monitor and maintain your road regulations
  - Reduce cost with automated data sharing
  - Make your data grow towards high quality
    - Flag false/suspect spatial map data
  - Exchange your data between municipality, regional and national levels
    - Enable multi-level aggregation

# ITS Spatial Data and in-vehicle applications



# ITS Spatial Data and in-vehicle applications

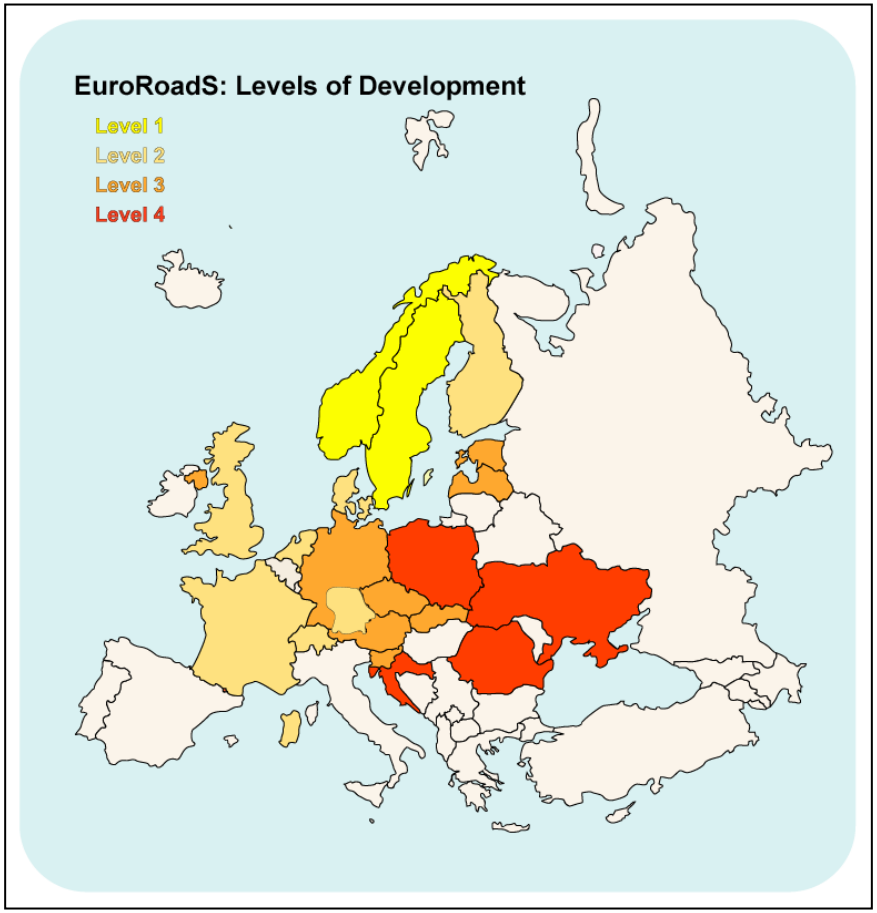
| ITS Spatial Data | In-vehicle applications | Change frequ. | Priority Primary/Secondary |
|---|---|---|---|
| **Legal speed limits** | SpeedAlert<br>Intelligent Speed Assistant (ISA)<br>(Mobile speed enforcement) | 9-7%/ year | Very high (primary sensor) |
| **Traffic regulations** (interdiction to turn, max height, max weight, interdiction to stop) | Enhanced navigation (e.g. trucks) | High to low | High (primary sensor) |
| **Slope and Banking** | Fuel consumption & Powertrain assist; Roll-over warning; Curve warning | Very low | Medium (Primary and secondary) |
| **Accident "hotspots"** | Dangerous road warning | Medium | High (Primary sensor) |
| **Crossings** (Pedestrians, bicycle path, Trams, right-of-way, tunnels/bridge,…) | Intersection assistance; Vulnerable Road Users protection | Medium | Medium to high (secondary sensor) |
| **Lane Information** (number, width, type of divider, shape, topology) | Lane Keeping Assist; Curve Warning; Overtaking advisor | Medium | Medium (secondary sensor) |
| **Intersection information** (Traffic lights, topology, lane direction, local dynamic maps) | Red light violation warning; Emergency vehicle pre-emption; Bus and heavy vehicle priority; | Medium | Medium (secondary sensor) |


# ITS Spatial Data and the EU Member States

04/06/2013

*M. Flament - FOT-NET - ADASIS - TN-ITS WS - Dublin*

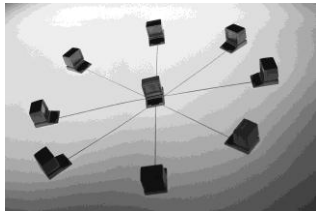
# Level of development of national road databases




Source: Euroroads, Per Isaksson, TrafikVerket (2008)

# Data sources for safety attributes

| Paper/ files | Electronic/ Spread sheet | GIS-platforms (part of map data) | Business system (not integrated) | National/regional integrated databases (different organisations) |
|---|---|---|---|---|

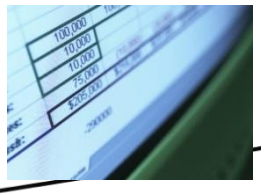


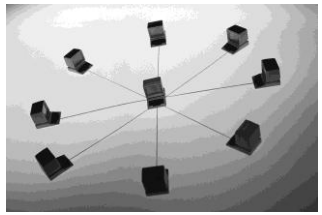


**Current situation among PA's**

# Data sources for safety attributes

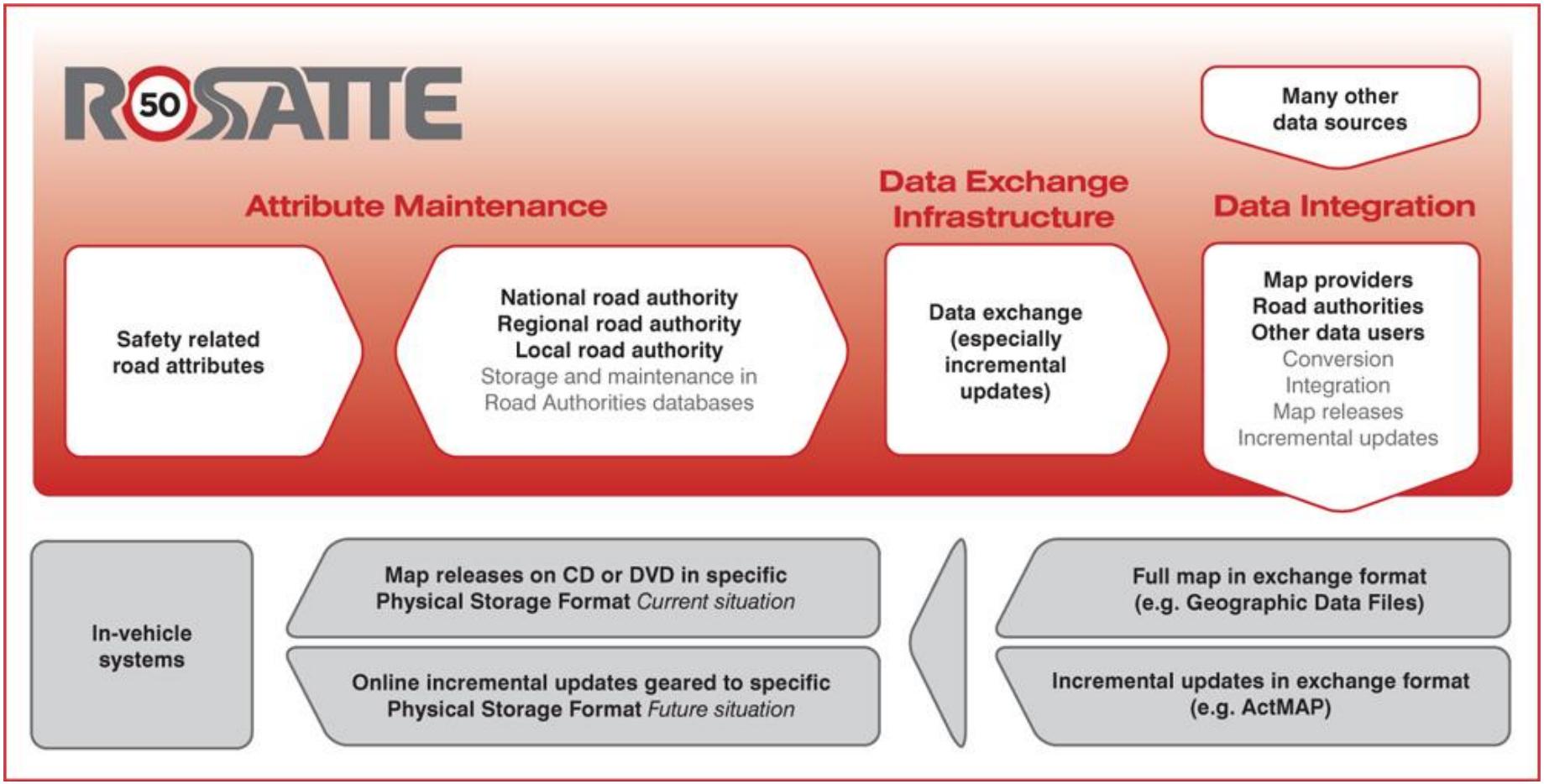
| Paper/ files | Electronic/ Spread sheet | GIS-platforms (part of map data) | Business system (not integrated) | National/regional integrated databases (different organisations) |
|---|---|---|---|---|





The Target !!

# The ROSATTE chain of value



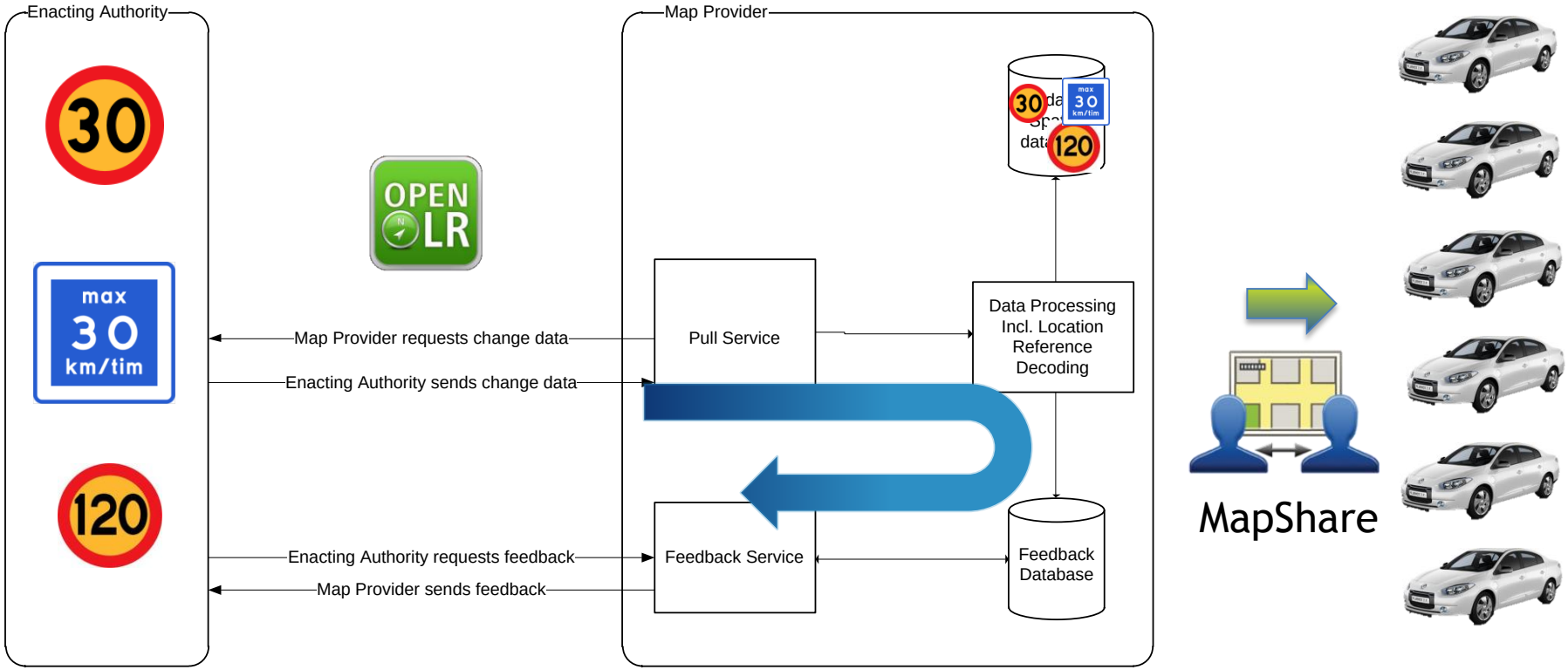
# Output of ROSATTE project

- Generic framework to facilitate access, exchange and maintenance of spatial data from public sources including:
  - multi-level national/regional/local aggregation
  - Incremental updates of map data
- Technical & organisational guidelines
- Aligned with INSPIRE services
- Commitment for deployment

# ROSATTE Infrastructure in place

TRAFIKVERKET

TOMTOM




Source: Tomtom

Transport Network ITS Spatial Data

# (Strong) links with the ITS Directive

04/06/2013

*M. Flament - FOT-NET - ADASIS - TN-ITS WS - Dublin*

# The ITS Directive:
# the best driver for these developments

- Optimal Use of Road, Traffic and Travel Data
- Continuity of Traffic and Freight Management
- Road Safety and Security
- Integration of Vehicle and Transport Infrastructure
- Data Protection and Liability
- European ITS Coordination


COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 16.12.2008
COM(2008) 887 Final
2008/0263 (COD)

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

laying down the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other transport modes

{SEC(2008)3083}
{SEC(2008)3084}

(presented by the Commission)

EN

EN

# ITS Directive - Area 1

## Optimal Use of Road, Traffic and Travel Data

1. EU-wide real time travel information (public and private roles)
2. **Collection and provision of road data**
3. **Accurate public data for digital maps**
4. Free minimum information service
5. Promotion of multi-modal journey planners


**Recommendations:**

**ROSATTE and INSPIRE**

**Specification, organisation and framework**

**TN-ITS Specification**



*in*

TN-ITS

# INSPIRE Directive

- General rules to establish an infrastructure for spatial information in Europe
  - Community environmental policies
  - Policies or activities which impact on the environment
- To be based on SDIs established and operated by the Member States
  - INSPIRE is a distributed infrastructure
- Does not require collection of new spatial data
- Does not affect existing Intellectual Property Rights
- Entry into force 15 May 2007

# INSPIRE Scope

- Spatial data held by or on behalf of a public authority operating down to the lowest level of government when laws or regulations require their collection or dissemination
- INSPIRE covers 34 Spatial Data Themes laid down in 3 Annexes

# INSPIRE Thematic Scope

## Annex I

1. Coordinate reference systems
2. Geographical grid systems
3. Geographical names
4. Administrative units
5. Addresses
6. Cadastral parcels
7. **Transport networks**
8. Hydrography
9. Protected sites

## Annex II

1. Elevation
2. Land cover
3. Ortho-imagery
4. Geology

## Annex III

1. Statistical units
2. Buildings
3. Soil
4. Land use
5. Human health and safety
6. Utility and governmental services
7. Environmental monitoring facilities
8. Production and industrial facilities
9. Agricultural and aquaculture facilities
10. Population distribution – demography
11. Area management/ restriction/regulation zones & reporting units
12. Natural risk zones
13. Atmospheric conditions
14. Meteorological geographical features
15. Oceanographic geographical features
16. Sea regions
17. Bio-geographical regions
18. Habitats and biotopes
19. Species distribution
20. Energy Resources
21. Mineral resources

# Why INSPIRE alignment is good for ITS spatial data

- Coordinate and aggregate data from public authorities at all levels
- Publish, exchange and report these data
- Offer web-services like: discovery, view, download, etc…
- Forum to maintain TN specifications
- Base procedures on legal framework and implementing rules

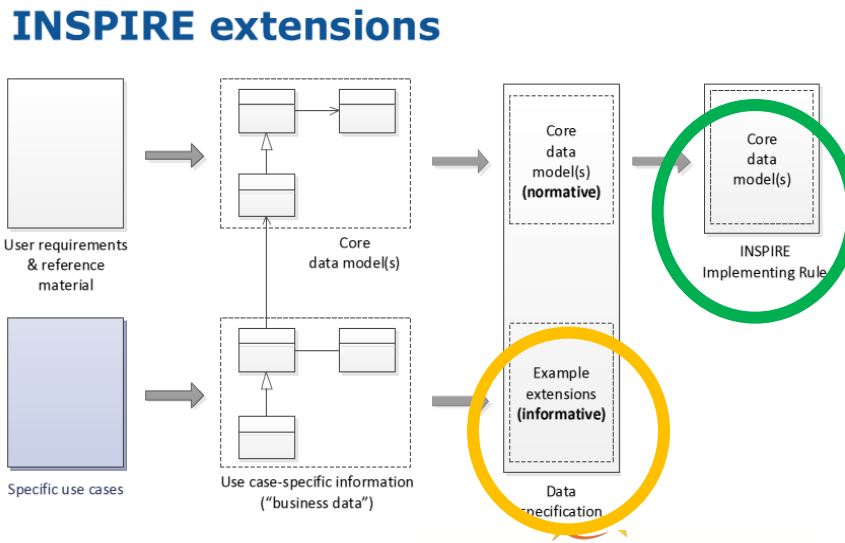
# INSPIRE and ITS spatial data differences

ITS Directive/TN-ITS and INSPIRE:

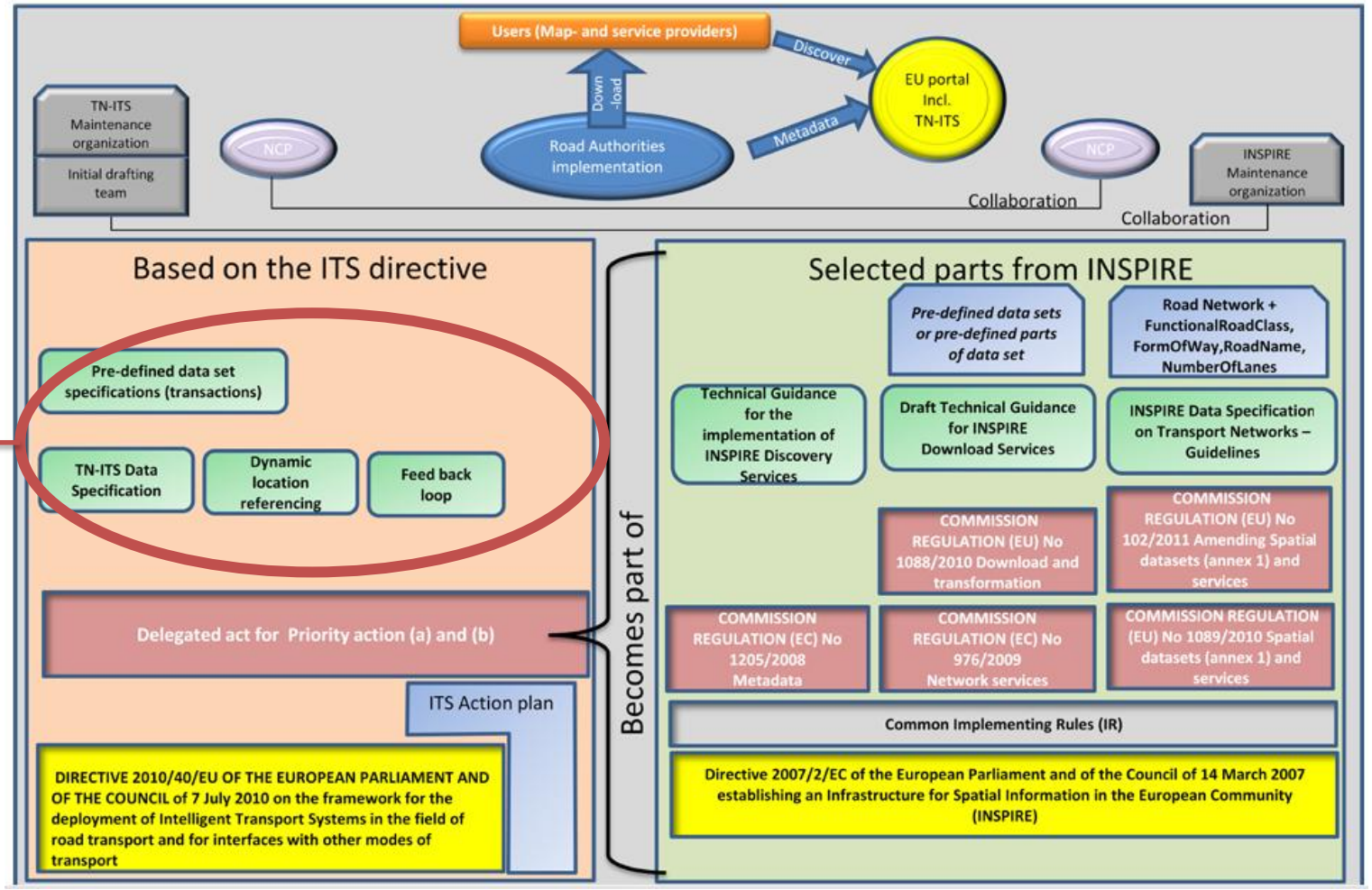
- Focus: Environment vs. transport policies
- Private/public owned data: IPR issues needs to be handled
- Location referencing systems based on
  Linear Referencing vs. Map-based Location Coding
- Quality control
- Maintenance of data
- Feed back loop

Still … alignment is desirable!

TN-ITS deployment platform (SDIC) to propose TN-ITS specifications
as an extension to the TN specification



# INSPIRE alignment from an ITS Directive Point of View



# Conclusions

- ITS Spatial Data is a must in our digital society for improving road safety and sustainability in the future
- Leaving the mapping uniquely to the industry for safety relevant attributes is not sustainable in the long term
- The mapping industry is primarily interested in changes rather than full sets of data
- Public Authorities should embrace the principle of notification of new changes
- Need to adopt TN-ITS extension to INSPIRE TN specification to answer the needs of the ITS industry

Transport Network ITS Spatial Data

# Thank you

Maxime Flament, ERTICO – ITS Europe
m.flament@mail.ertico.com