“The importance of road monitoring to develop traffic management strategies”

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Outline

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Introduction

• Spanish information
  – Spanish area: more than 505.957km2
  – TERN: more than 9.000 Km
  – Main roads: 13.500 km.
  – Different important long corridors

• Traffic organizations
  – National public traffic organization:
    • DGT
  – 2 regional public traffic organizations:
    • SCT & DT
Traffic management in Spain

- **DGT TCC Structure:**
  - **Coordination TCC**
    - It is the main centre and contains the traffic information database.
    - It is responsible of
      - National & international actuations
  - **Regional TCC:**
    - It control autonomously the ITS systems installed in the roads under its competences.
    - Traffic management at regional level and in conurbations areas
  - **Local TCC:**
    - It share with the regional centre the control of some ITS installed inside.
    - Located in specific locations
    - They are in charge of dangerous road points.
    - The road network covered is completely integrated in the regional TCC network.
Traffic management in Spain
Traffic management in Spain

DDGT ITS Systems and services for traffic Management

– Incident detection
– Incident prevention systems
– Travel Times
– Speed control
– Ramp metering
– Dynamic lane control
– End user information systems
  • Pre-trip Information
  • On trip information
– Datex I & II
– TMP (local, regional & Cross border)
The importance of road monitoring

**Key Factors**
- New monitoring technologies
- New equipment
  - to deploy new systems
  - to improve the existing
  - to fill the gaps
- Data quality
- New & existing ITS systems could use current road monitoring equipment
Road monitoring and data quality

- **Data quality**
  - The success of the ITS service provision depends on the data quality.
  - Raw data are fundamental
    - If errors appear at the beginning, it is difficult to correct them at the end.
  - However,
    - Data quality is required in the whole ITS service process not only at the beginning.
    - ITS service quality depends on the quality of all processes involved in the service provision.
ITS services and data quality

- Quality is required at different levels

| Monitoring          | • Technological level (sensor, signal, cable, …)  |
|                     | • Data and information (speed, density, …)        |
| Management          | • Functional (algorithms, procedures,…)          |
|                     | • Operational (strategies)                        |
| End user            | • Acceptance degree (behavior vs signalization)   |
| Evaluation          | • Success (Target vs expected results)             |
Spanish Approach

- CTN199 SC15. Data Quality
  - Led by DGT
  - Focused on data quality at TCC level
  - Workgroups
    - WG 1: “Intercentros“
    - WG 2: Data analysis
      - Data reduction
      - Data reconstruction
      - Data Base insertion
      - Quality evaluation.
Conclusions

- DGT is working hardly to incorporate new technologies to develop new ITS systems and improve the existents.

- DGT uses the current ITS system installed in order to develop new ITS services to improve traffic management and control strategies to enhance traffic flow and increase road safety.
Conclusions

• One of the key aspects of ITS systems is road monitoring. It is the basic layer to develop ITS services.
• Road monitoring needs data quality in order to develop correctly this ITS services.
• Furthermore, data quality is required when TCCs exchange traffic information to develop ITS services between them.
• ITS evaluation of the systems should be carried out in all design and installation phases.
Thank you for your attention!!!