MISTRA Trassee (TRA)
Esri International User Conference

25.07.2012

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What is MISTRA?

ASTRA is developing the Management Information System Road and Traffic (MISTRA) to support strategical, conceptual and operational processes within the responsibilities of the ASTRA. These processes involve the specification for road network planning, road development and utilization as well as any additional tasks that fall within the responsibility of streets proprietor and operator.

The geographic information and communication system for road and traffic is being developed in close collaboration with the cantons, metropolitan authorities and various federal agencies as well as subject matter experts.
MISTRA System Overview

MISTRA Applications

- Financial Management System
  - Trassee
  - Buildings and tunnels
  - Equipment Management System
  - National Roads Management System
  - Urban Area Management System
- Operational Maintenance
  - Real estate and Contract Management System
  - Traffic Monitoring
- Application Data
  - Accidents
  - Bike and Pedestrian Roadways
  - Others...

MISTRA base data

MISTRA base system / ASTRA data warehouse
Motivation for MISTRA Trassee

• Trassee includes the entire foundation and surface structure for the roadway as well as the areas left and right of the roadway

• Documentation of the road vicinity:
  • Geometry and utilization
  • Roadway construction and condition
  • Guardrail system
  • Drainage, noise protection walls and wildlife fences
  • Road marking and signalization

• Replacement of the federal and cantonal system STRADA
Goals Trassee

Geometry and utilization
Goals Trassee

Roadway construction and condition

Diagram showing layers of roadway:
- Cover layer
- Bearing layer
- Base layer
- Pavement
- Foundation

Photos of roadway conditions.
Goals Trassee

Guardrail system / noise protection walls
Goals Trassee

- Pavement Management System (PMS)
- Empirical PMS process:
  - Belongs to object view
  - Create maintenance objects at critical locations
  - Assign maintenance tasks
  - Schedule maintenance objects and tasks
Interfaces

• MISTRA base system:
  • Import of administrative regions, assets, street axis and road networks
• Swisstopo:
  • Usage of basemaps (orthophoto and survey data)
• Third party systems and other Trassee clients
  • Obtaining and delivery of Trassee data
• Reporting
  • Excel, PDF
• LDAP
  • User authentication
MISTRA Trassee

Benvenuto a MISTRA Carreggiata

Versione 1.2.0.2 Produzione
Multitenancy Capabilities
MISTRA Trassee Main Page
Selection
Selection on map
Graph of Road Axis
Data Lists
Cross-section
Objects and their Representations
Queries
Create a Maintenance Object
Maintenance Object with Axis
Workpackage and Simulation
History with Reference Date
Reports
Statistics

• 20’000 roadway geometries
• 60’000 roadway structures
• 24 roadway attributes:
  • Currently there are 60K datasets for each attribute and survey for the federal highway system
  • Data is available for 3 surveys, surveys are done every 4 years
• Overall 2 Mio. roadway attributes
Performance

Performance for 60’000 objects

• ca. 3s for map display
• ca. 20s for data list

• Up to 100’000 objects can be displayed in the data list