Coordinate based object referencing

Reference point for the track survey
Absolute / relative (red) track geometry

Long wave track deformation

Red: Ancient, relative working method
Green: New, absolute coordinate based working method

Cost effectiveness of the new method

Tracks 1986-1996: Cost ↓, Load → Quality ↑

Route net of the Swiss Rail

Route Net with Nodes and Edges

Work surface constructed on the route net

Automatic Summation with work surfaces

Content of work-surface: 27,851 km tracks, 218 switches

KM-Axis (Part of the Route net)
Railway Coordinates: State of the Art and a tremendous potential

List representation of railway facilities

<table>
<thead>
<tr>
<th>Linie</th>
<th>Km</th>
<th>Km bis</th>
<th>Standort</th>
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<tbody>
<tr>
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<td>Paluds, Les : St-Maurice Tunnel / Tunnel / Galleria</td>
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<td>St-Maurice Gebäude / Bâtiment / Fabbricato</td>
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</table>

Railway Coordinates: State of the Art and a tremendous potential

Graphic representation of railway facilities

 Gleisaußenmet deanlage
Anzahl: 7
Auswahl: Kartenausschnitt

DIA report: 08.09.2008
Railway map: global view

Railway map: platform and buildings
Shell data model

Minimal and maximal data interoperability
From the track work process …

Coordinate based, process driven, topology structured track data management

… to the Infrastructure Maintenance Process

Coordinate based, maintenance process driven, topology structured infrastructure data management

Maintenance process – The work step driven data updates

Interface – The consistency tests of the data from the topologically structured data models

Data basis – The interoperability module to guarantee the interaction between the data models
Invitation to discuss the future organisation

A proposal for consolidating the coordinate based railway reference data

Railway Coordinates: State of the Art and a tremendous potential