

# railOscope

validate, visualize and analyze  
railML® files

Burkhard Franke

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# railOscope

**Why**

What

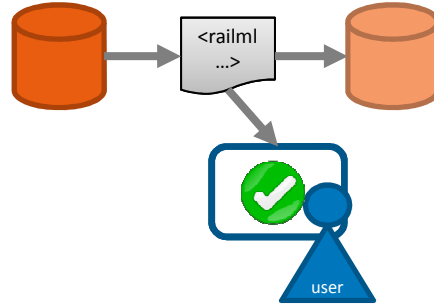
Who

# Motivation

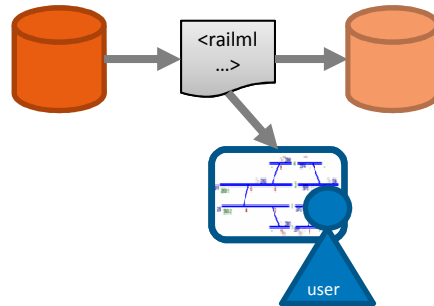
- **We work with rail data (especially railML®)**
- **We develop software**
- **Our experience:**
  - rail data is flawed
  - railML standard is flexible
  - surprise is the only constant

# Vision

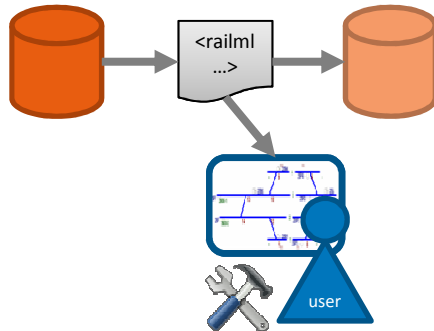
**Validate**



**Visualize**



**Edit**



**with a reliable tool**

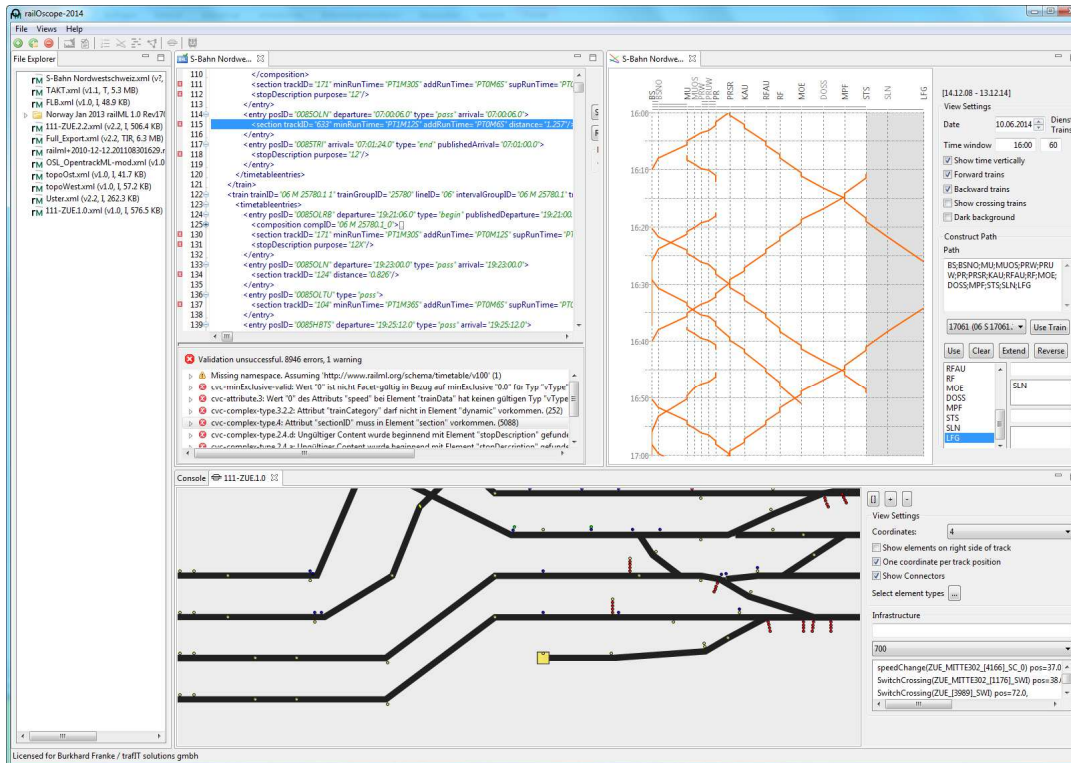
# railOscope

Why

**What**

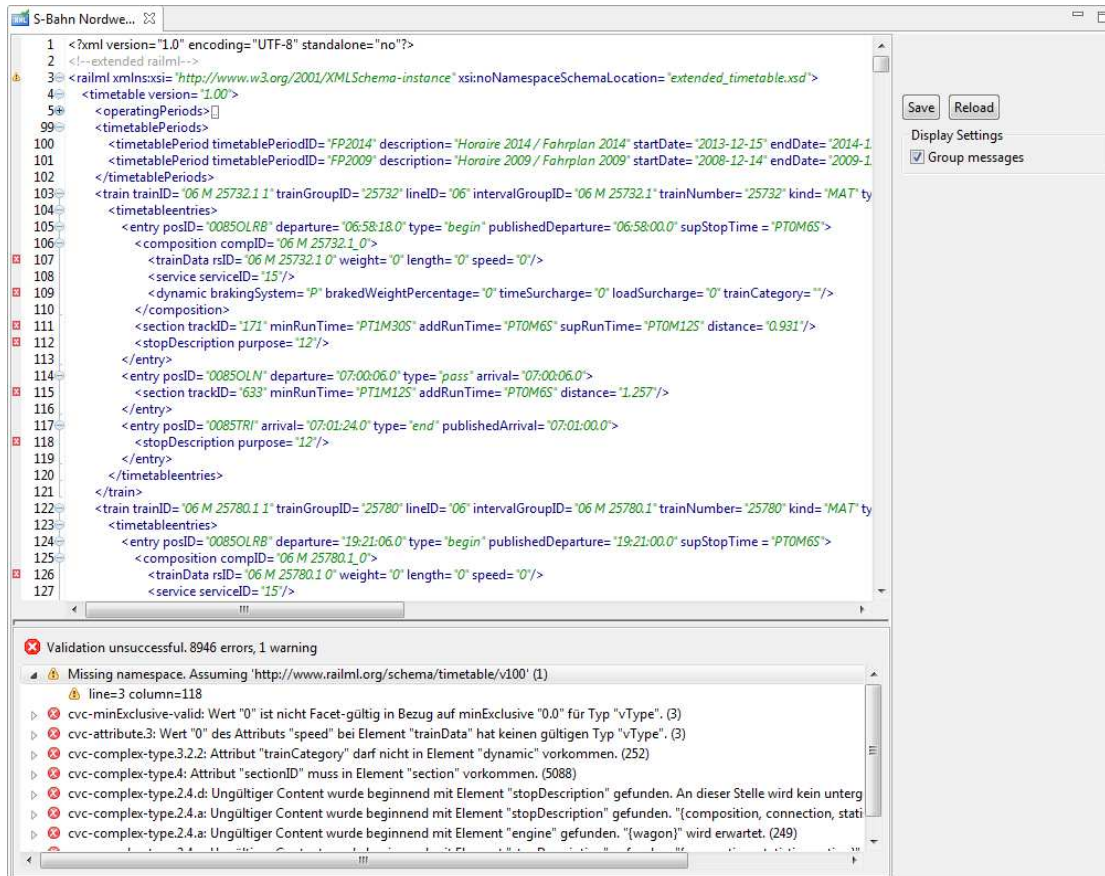
Who

## validate, visualize and analyze railML® files



- Validate files
- Fault-tolerant import of files
- Current railML versions: 1.0, 1.1, 2.0, 2.1, 2.2
- View (and edit) source
- Visualize data with commonly used views

# Validation

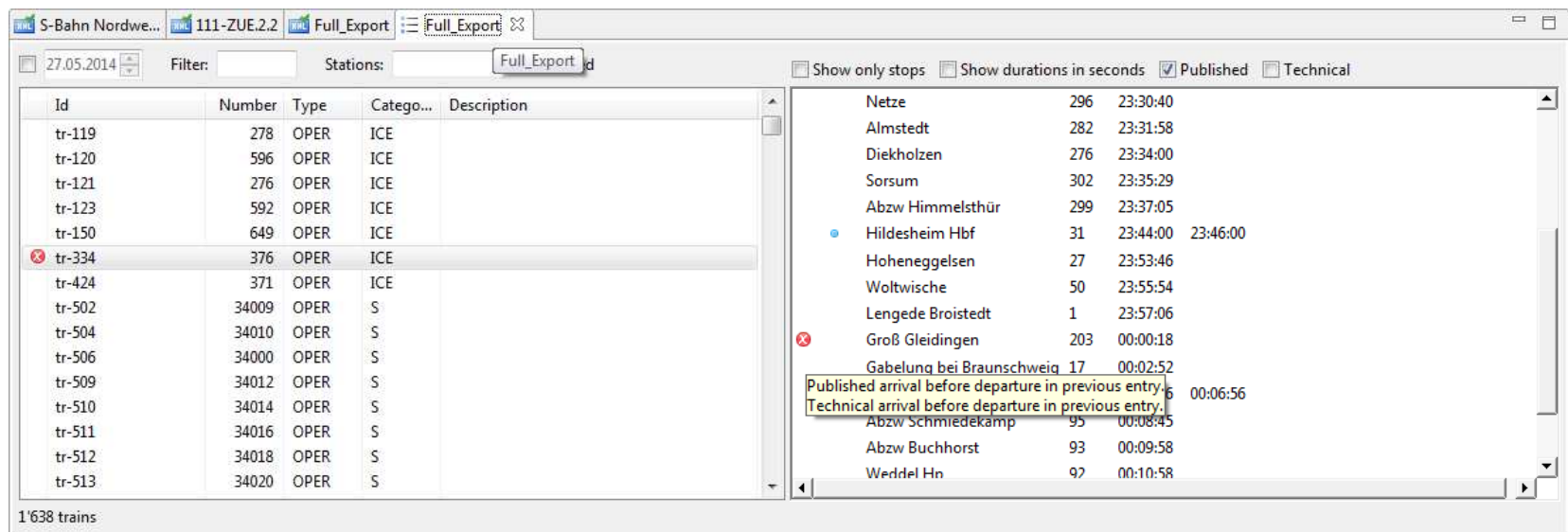


- Fault-tolerant handling of non-standard files
- Warnings / errors displayed according to the railML - version
- Description of errors to simplify fixing files and interfaces
- Editing features to quickly correct flawed files

# Timetable: Train listing

## Listing of all trains

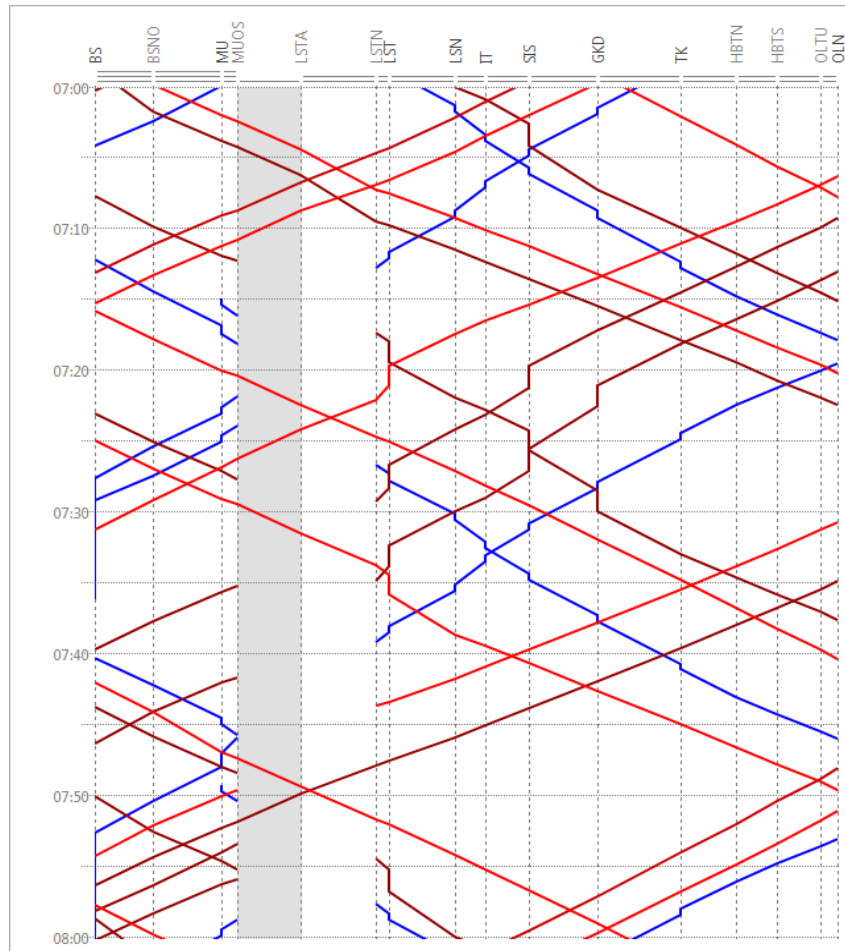
- Sort/filter train list by day of operation, trainNumber/trainID or station name
- Tabular view of train run with several display options



- Easy detection and description of inconsistencies (independent of formal validation)

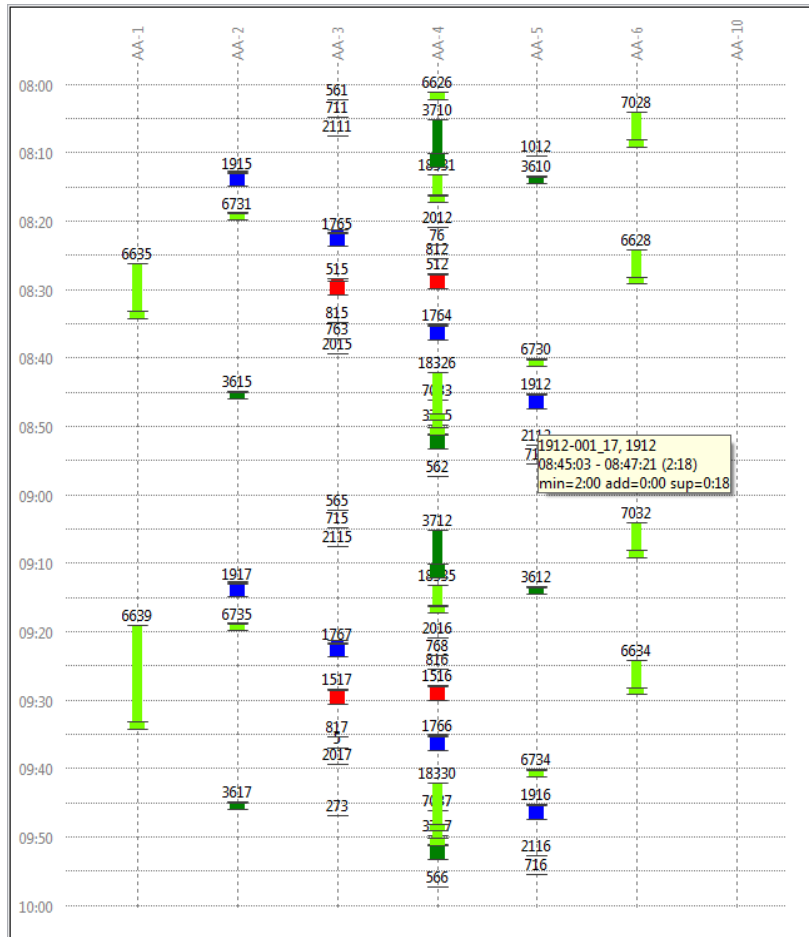


# Timetable: Graphical Timetable



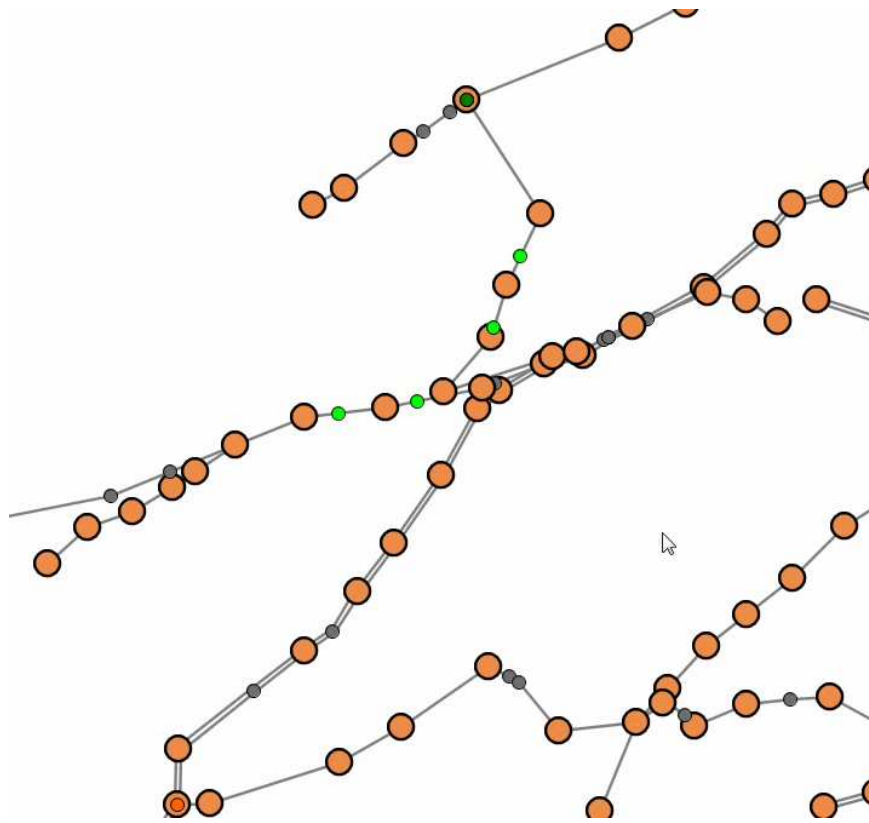
- Standard view for analyzing traffic on sections
- View is solely based on timetable data – no separate infrastructure model needed
- Easy customization of the view

# Timetable: Track Occupation Plan



- Standard view for analyzing traffic in a station
- View is solely based on timetable data – no separate infrastructure model needed
- Display of relevant train information and operational details such as minimal stopping times and margins

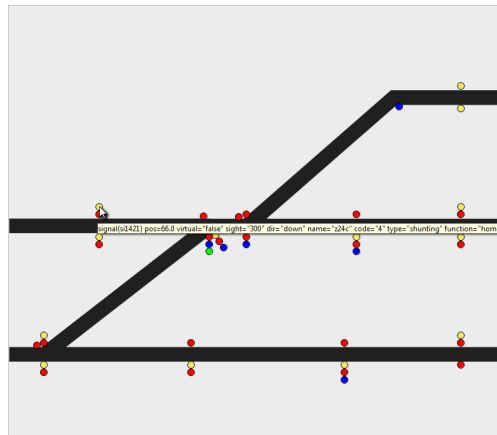
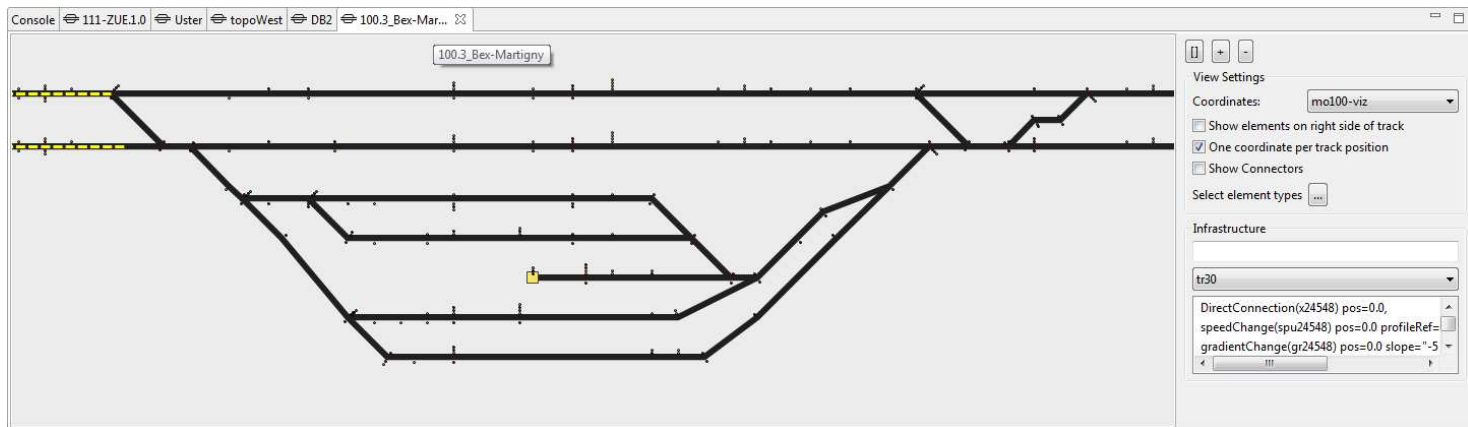
# Timetable: Animation



- Animate the operation of timetables
- See the network-wide context

# Infrastructure

## Visualization of topology and infrastructure elements



### Display of infrastructure details:

- Balises and signals,
- Cross sections,
- Speed changes,
- Gradient and radius changes,
- Mileage changes,
- Tunnels
- ...

# Rollingstock

Display of all data on formations and vehicles included in railML files

The screenshot shows a software interface with a console window at the top displaying '111-ZUE.1.0 Uster RS\_sampletrains'. Below the console, there are two main sections: 'Formations' and 'Vehicle Details'. The 'Formations' section has a filter set to 'RS\_sampletrains' and a table with columns: Id, Name, Length, Brutto weight, and Speed. The 'Vehicle Details' section shows details for vehicle 'rse0002', including Name, Description, Length, Brutto Weight, Netto Weight, Tare Weight, and Speed.

Id	Name	Length	Brutto weight	Speed
rsf0005	MixedFreightTrain	401.00	86.000	90
rsf0004	LocoPassengerTrain	174.00	446.000	200
rsf0003	ICE1 with 12 cars	358.02	731.000	300
rsf0002	TGV+ICE3	400.00	897.000	300
rsf0001	Double ICE3	400.00	1024.000	330

Id	Engine	Name	Length	Brutto weight	Speed
rse0002	E	Locomotive BR186	18.00	86.000	220
rst0012		BoxCar	19.00		90
rst0012		BoxCar	19.00		90
rst0010		TankCar	18.50		100
rst0010		TankCar	18.50		100
rst0010		TankCar	18.50		100
rst0010		TankCar	18.50		100
rst0010		TankCar	18.50		100
rst0010		TankCar	18.50		100
rst0012		BoxCar	19.00		90
rst0011		PlatformCar	20.00		120
rst0011		PlatformCar	20.00		120
rst0011		PlatformCar	20.00		120
rst0011		PlatformCar	20.00		120
rst0011		PlatformCar	20.00		120
rst0011		PlatformCar	20.00		120
rst0011		PlatformCar	20.00		120
rst0011		PlatformCar	20.00		120
rst0012		BoxCar	19.00		90
rst0012		BoxCar	19.00		90
rst0010		TankCar	18.50		100
rst0010		TankCar	18.50		100
rst0010		TankCar	18.50		100

Id	Name	Length	Brutto weight	Speed
rse0002	Locomotive BR186	18.00	86.000	220

# ... a reliable tool:

## **railOscope as commercial product**

### **We provide**

- **Support, updates, upgrades**
  - Future railML versions
  - Other input data
  - Converting data
- **Customization**
  - User specific needs

## **railOscope as free viewer**

- features and support open to discussion

# railOscope

Why

What

**Who**

# Audience

## railScope helps

- **enabling railwaymen/railwaywomen to deal with rail data**
  - Expansion of user base of railML
- **as a “lightweight” viewer of rail data**
  - Faster and easier to use than full-scale timetabling, simulation,... tools



# Summary

## railScope helps managing railML® files

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- **Master rail data**
  - Validate railML files
  - Edit, correct, complete (rule based)
  - Revise, convert, publish
- **Access files and understand data**
  - Fault-tolerant handling of non-standard files
  - Visualize: standard views
- **Ease the use of railML as rail data interface**
- **A reliable product**
  - Support, Updates, Upgrades
  - Customization