

# **Welcome to Zurich / Willkommen in Zürich**



**IT10 ● RAIL**

**OpenTrack  
User Conference  
January 21, 2010**

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Daniel Huerlimann**

# Agenda

- Introduction of the participants / Vorstellungsrunde
- Presentation of version 1.6 of OpenTrack /  
Präsentation der Version 1.6 von OpenTrack
- Key features / wichtigste Neuerungen

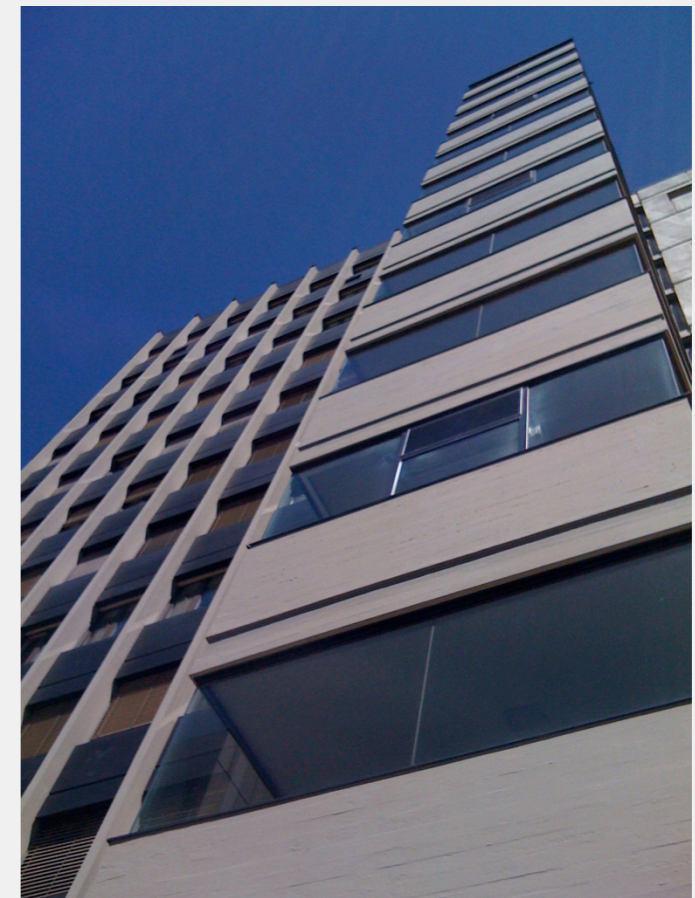
# OpenTrack - new office location

**OPEN**  **TRACK**

OpenTrack  
Railway Technology GmbH

**OpenTrack Railway Technology Ltd.**

Gubelstr. 28  
CH - 8050 Zürich  
Switzerland

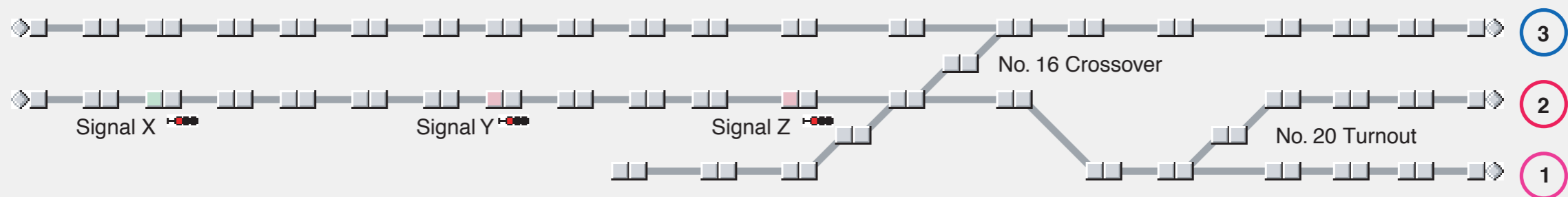


## New signal system: Universal (Metric / US)

Signal Aspect	Indication
Proceed $v$	Proceed at speed $v$
Approach $v$	Proceed approaching next signal at restricted speed $v$ . Trains exceeding restricted speed $v$ must begin reduction to restricted speed $v$ as soon as engine passes the Approach signal.
Advance Approach $v$	Proceed approaching second signal at restricted speed $v$ . Trains exceeding restricted speed $v$ must begin reduction to restricted speed $v$ as soon as engine passes the Approach signal.

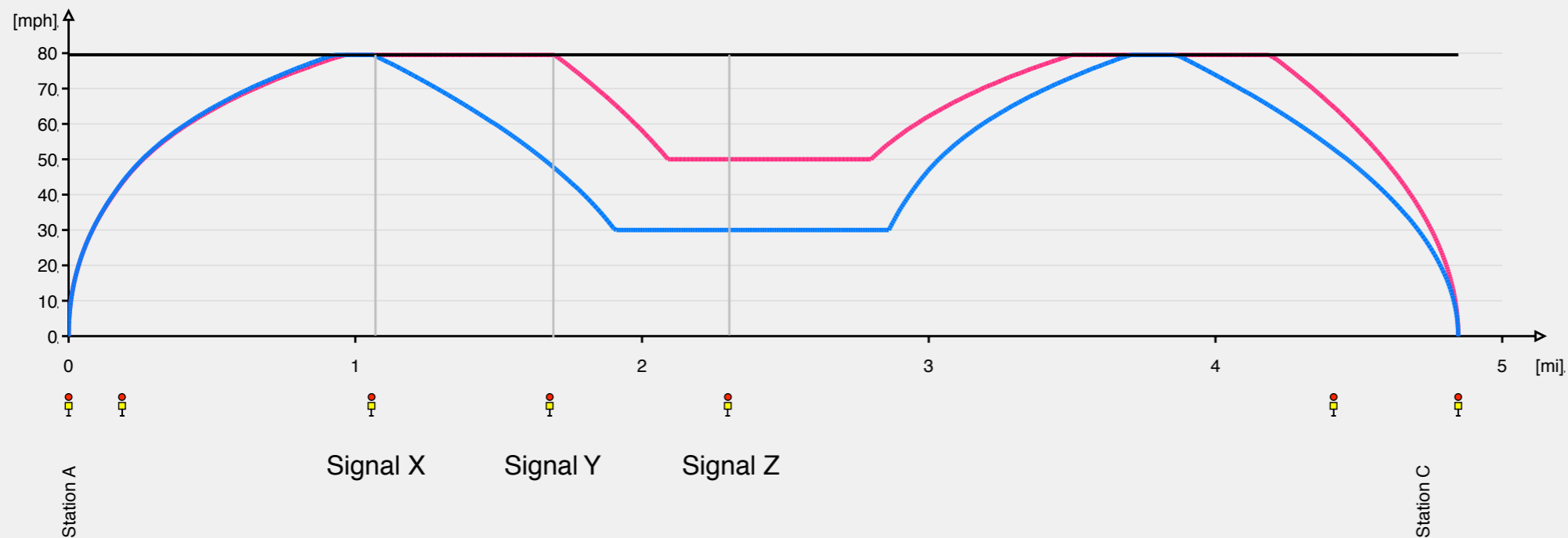
# New signal system: an example

Aspects of Signals at:	X	Y	Z
2 If cleared for diverging route through high-speed turnout to track 2 (50 mph)	TS	A 50	P 50
3 If cleared for diverging route through No. 16 crossover to track 3 (30 mph)	AA 30	A 30	P 30

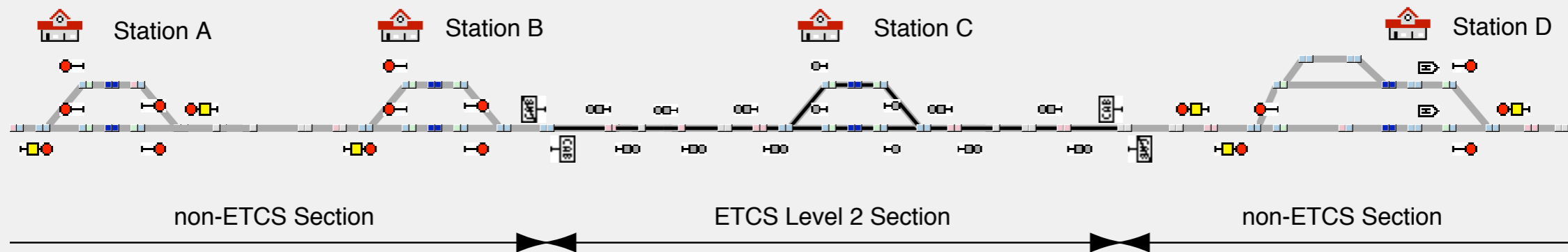


## New signal system: an example

Aspects of Signals at:	X	Y	Z
2 If cleared for diverging route through high-speed turnout to track 2 (50 mph)	TS	A 50	P 50
3 If cleared for diverging route through No. 16 crossover to track 3 (30 mph)	AA 30	A 30	P 30



# ETCS Level 2 - detailed infrastructure model



ETCS line start



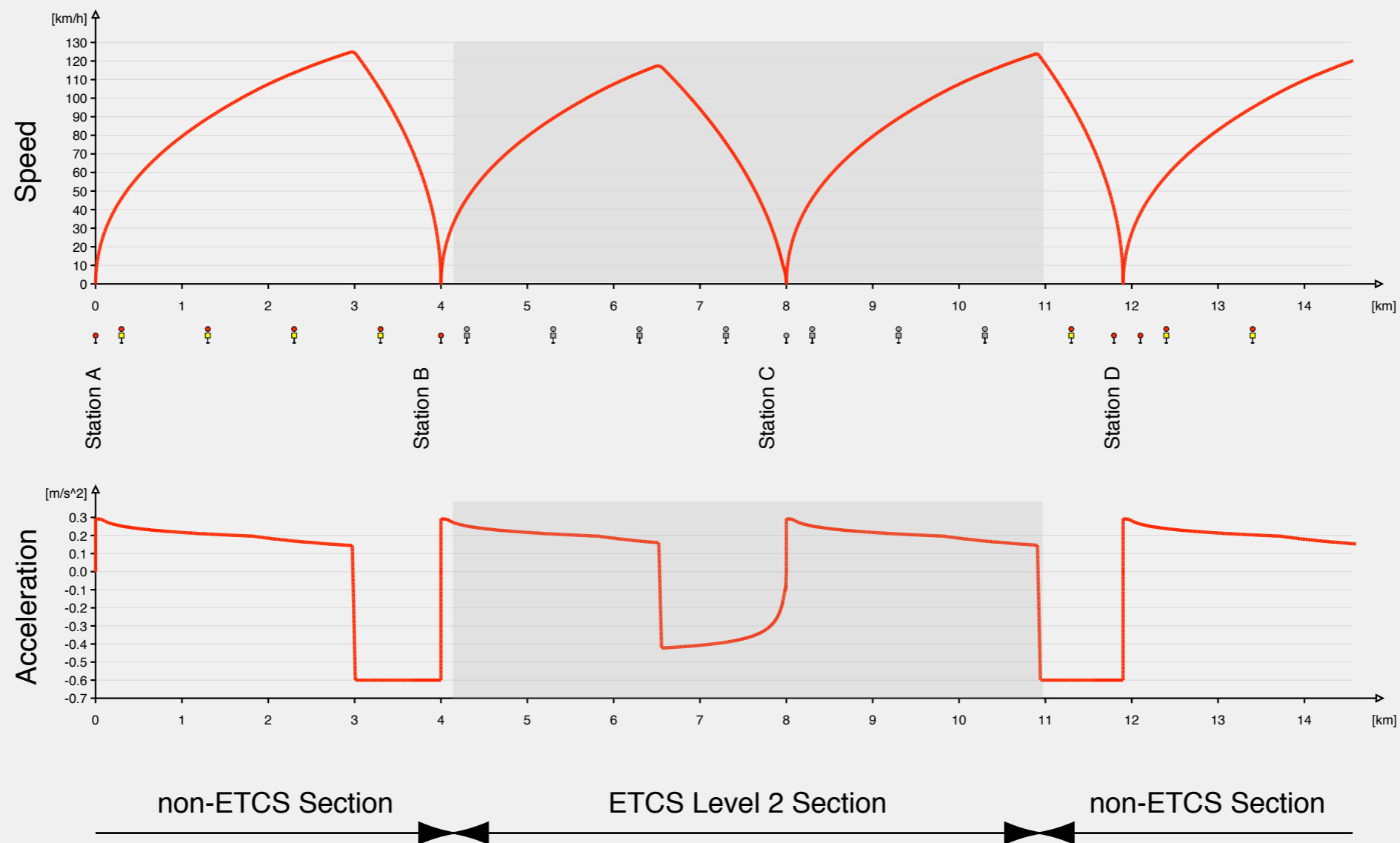
Stop marker boards  
(virtual signals)



ETCS line end

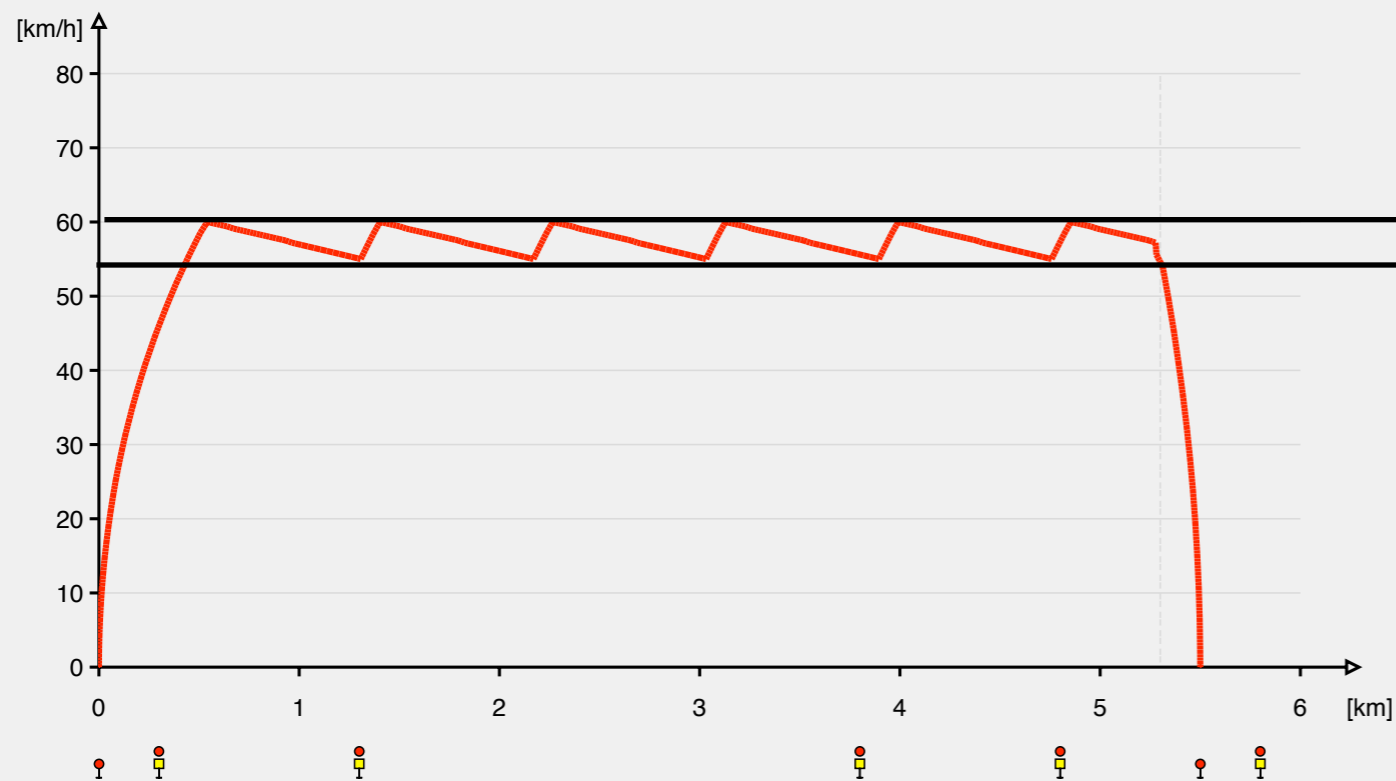


## ETCS Level 2 - outputs





## Coasting / coasting signal



Upper limit  
Lower limit

Station A

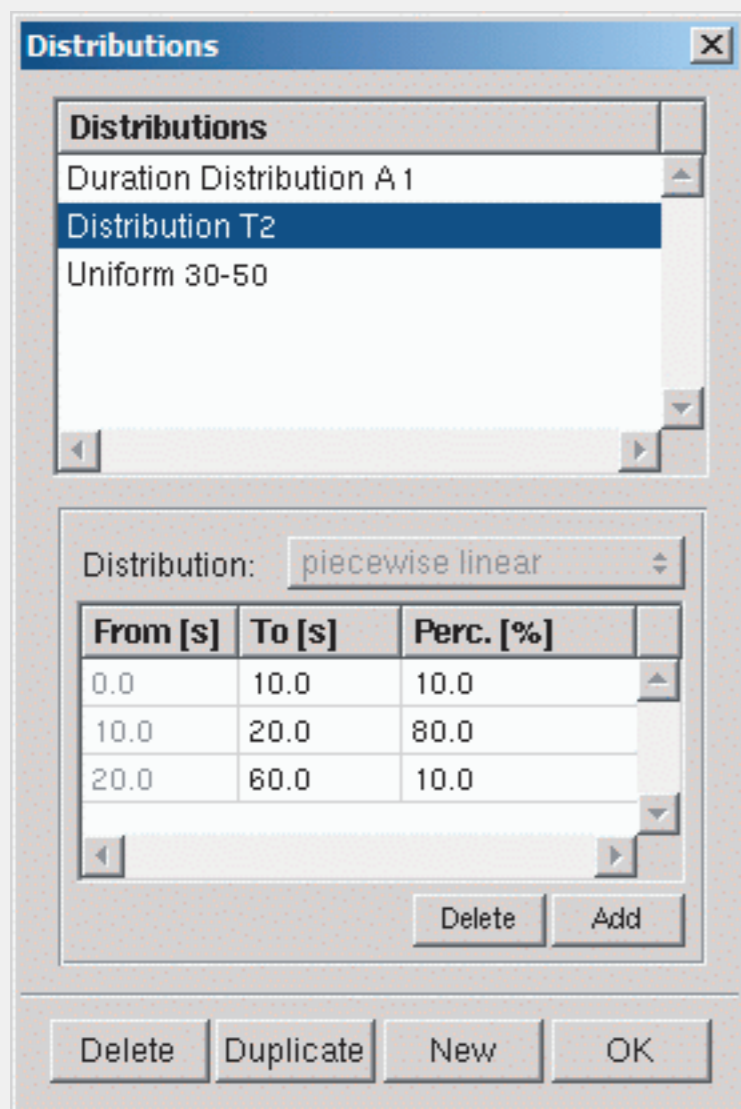


Station B

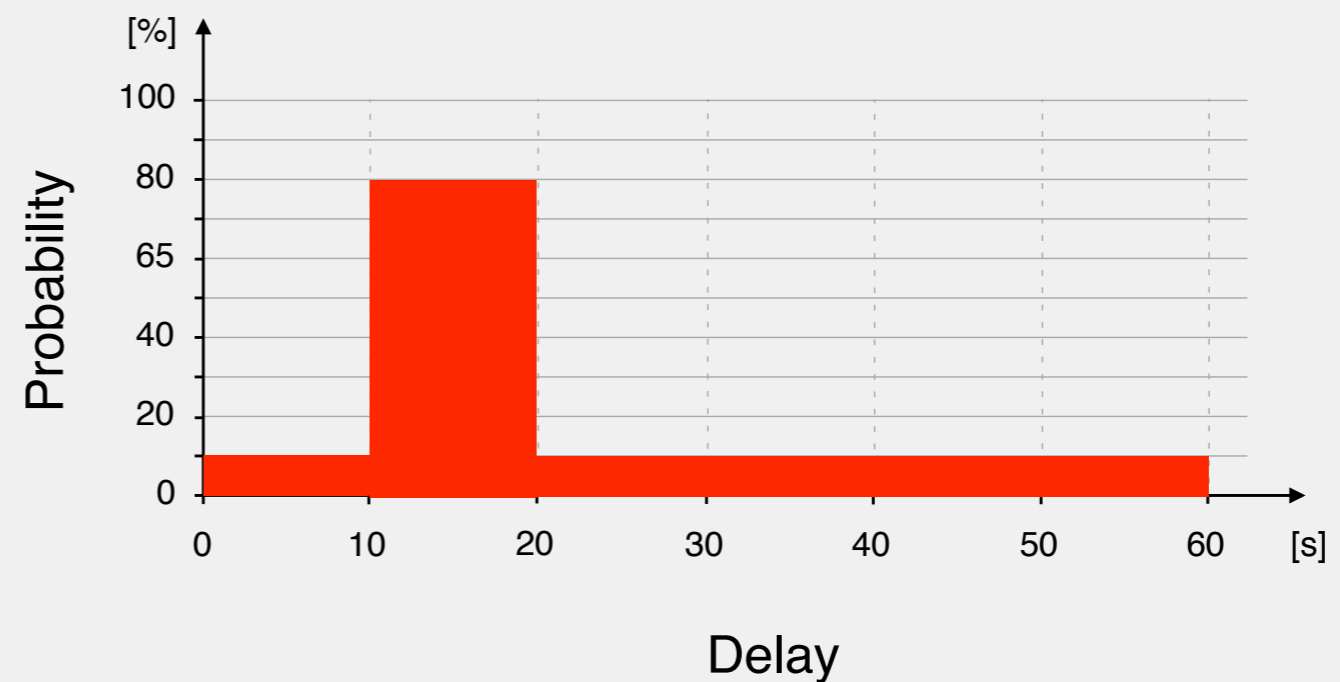


Coasting  
signals

# Distribution tool



- User definable distribution functions
- Piecewise linear



# New timetable functions

Course ID	Station	Arrival	Departure	Wait	Stop	Distr.	M. Del.
RE 10003	STATV	HH:MM:SS	09:18:20	0	✓		0
RE 10003	STATU	HH:MM:SS	09:23:20	30	✓		30
RE 10003	STATT	HH:MM:SS	09:27:00	30	✓		30
RE 10003	STATY	09:29:55	09:29:55	30	✓	Distribution T2	0
RE 10003	STATZ	09:33:45	HH:MM:SS	30	✓		0

Course ID	Station	Min. Wait	max. wait	Join	Split
RE 5830	STATW	00:07:00	HH:MM:SS	*	*

Distribution (for dwell times)

Functions (for selected entries)

Connections between stations

Keep interval ref. for delays

# New incident functions and attributes

Incidents

Type: Group of Edges

Object

Edge ID: 330

Edge ID: 672

Name: Group of Edges

Comment:

Probability: 100.0 [%]

Begin: 08:10:00 [HH:MM:SS]

End: [HH:MM:SS]

Begin Distribution: Distr.D 1

Duration Distribution: Duration Distr. DD2

Restr. Speed: 0.0 [km/h]

Wait Time after Stop: [s]

Discrete for Mov. Block Operations

Valid for Head of Train only

Periodic Incident (on/off/on/off)

0 0 0 0 [s]

Cancel OK

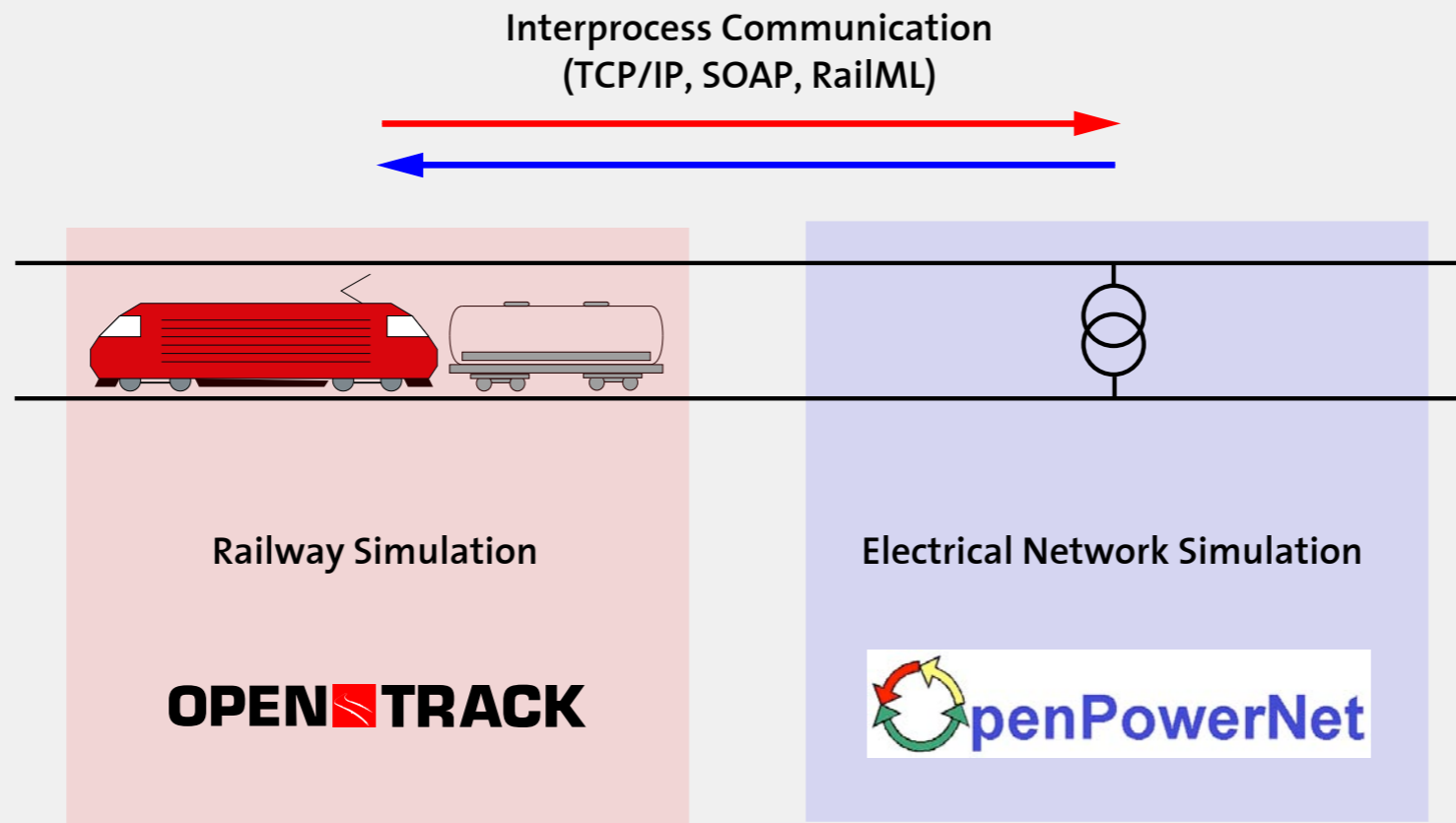
New incident types

Probability

Begin distribution

Duration distribution

# OpenPowerNet - Version 1.2.0 released



Users:



中铁第四勘察设计院集团有限公司

中国铁建 CHINA RAILWAY SIYUAN SURVEY AND DESIGN GROUP CO., LTD.