Welcome to Zurich / Willkommen in Zürich

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

OpenTrack Railway Technology Ltd.
Gubelstr. 28
CH - 8050 Zürich
Switzerland
## New signal system: Universal (Metric / US)

<table>
<thead>
<tr>
<th>Signal Aspect</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proceed $v$</td>
<td>Proceed at speed $v$</td>
</tr>
<tr>
<td>Approach $v$</td>
<td>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.</td>
</tr>
<tr>
<td>Advance Approach $v$</td>
<td>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.</td>
</tr>
</tbody>
</table>
New signal system: an example

Aspects of Signals at:

<table>
<thead>
<tr>
<th></th>
<th>X</th>
<th>Y</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>TS</td>
<td>A 50</td>
<td>P 50</td>
</tr>
<tr>
<td></td>
<td>If cleared for diverging route through high-speed turnout to track 2 (50 mph)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>AA 30</td>
<td>A 30</td>
<td>P 30</td>
</tr>
<tr>
<td></td>
<td>If cleared for diverging route through No. 16 crossover to track 3 (30 mph)</td>
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New signal system: an example

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- If cleared for diverging route through high-speed turnout to track 2 (50 mph)
- If cleared for diverging route through No. 16 crossover to track 3 (30 mph)
ETCS Level 2 - detailed infrastructure model

ETCS line start

Stop marker boards (virtual signals)

ETCS line end
ETCS Level 2 - outputs

![Graph showing speed and acceleration over distance with stations A, B, C, and D marked. The graph illustrates the dynamics of a railway network under ETCS Level 2, with non-ETCS sections interspersed.](#)
Coasting / coasting signal

Upper limit
Lower limit

Coasting signals
Distribution tool

- User definable distribution functions
- Piecewise linear
New timetable functions

- Distribution (for dwell times)
- Functions (for selected entries)
- Connections between stations
- Keep interval ref. for delays
New incident functions and attributes

- New incident types
- Probability
- Begin distribution
- Duration distribution
OpenPowerNet - Version 1.2.0 released

Interprocess Communication
(TCP/IP, SOAP, RailML)

Railway Simulation

Electrical Network Simulation

Users:

Technische Universität Dresden

China Railway Siyuan Survey and Design Group Co., Ltd.