



OpenPowerNet
Release Notes Version 1.2.1

**Institut für Bahntechnik GmbH
Branch Office Dresden**

Document No. OPN/RN/1.2.1

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Author	Review	Release
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1 Introduction

1.1 Overview

The purpose of this document is to describe the changes and the status of OpenPowerNet version 1.2.1. The document contains:

- List of delivered files on DVD,
- Description of the main functionality,
- Any restrictions known,
- List of corresponding documentation and
- Known issues.

1.2 Configuration

See document Installation Instruction version 1.2.1 for required third-party software versions.

1.3 Acronyms and abbreviations

The following abbreviations are used within this document.



Abbreviation	Description
DVD	Digital Versatile Disk
DC	Direct Current
AC	Alternating Current

2 List of files on DVD delivery



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OPN_InstallationInstruction_1.2.1.pdf
OPN_ReleaseNotes_1.2.1.pdf
OPN_UserManual_1.2.1.pdf
OpenPowerNet\my.ini
OpenPowerNet\OpenPowerNet-1.2.1.zip
OpenTrack\OpenTrack.V_1.5.5_2009-11-28.zip
ThirdPartyPrograms\HASPUserSetup.exe
ThirdPartyPrograms\jre-6u14-windows-i586.exe
ThirdPartyPrograms\MCRInstaller_R2009a_win32.exe
ThirdPartyPrograms\MCRInstaller_R2009a_win64.exe
ThirdPartyPrograms\mysql-connector-odbc-3.51.27-win32.msi
ThirdPartyPrograms\mysql-connector-odbc-5.1.5-win32.msi
ThirdPartyPrograms\mysql-connector-odbc-5.1.5-winx64.msi
ThirdPartyPrograms\mysql-essential-5.0.67-win32.msi
ThirdPartyPrograms\mysql-essential-5.0.67-winx64.msi
ThirdPartyPrograms\mysql-gui-tools-5.0-r14-win32.msi
ThirdPartyPrograms\odbcad32 (x86).lnk
ThirdPartyPrograms\odbcad32.lnk
ThirdPartyPrograms\vc redistrib_x64.exe
ThirdPartyPrograms\vc redistrib_x86.exe
update\artifacts.xml
update\content.xml
update\index.html
update\site.xml
update\features\de.bahntechnik.dd.opn.bin_1.2.0.v_200909232323.jar

```

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update\features\de.bahntechnik.dd.opn.bin_1.2.1.v_201001110000.jar
update\features\de.bahntechnik.dd.opn.psc.prj.ui_0.2.0.v_200909232323.jar
update\features\de.bahntechnik.dd.opn.psc.prj.ui_0.2.1.v_201001110000.jar
update\features\de.bahntechnik.dd.opn.ui_0.2.0.v_200909232323.jar
update\features\de.bahntechnik.dd.opn.ui_0.2.1.v_201001110000.jar
update\plugins\de.bahntechnik.dd.opn.ana.help_0.2.0.v_200909232323.jar
update\plugins\de.bahntechnik.dd.opn.ana.help_0.2.1.v_201001110000.jar
update\plugins\de.bahntechnik.dd.opn.ana_0.2.0.v_200909232323.jar
update\plugins\de.bahntechnik.dd.opn.ana_0.2.1.v_201001110000.jar
update\plugins\de.bahntechnik.dd.opn.bin.help_1.2.0.v_200909232323.jar
update\plugins\de.bahntechnik.dd.opn.bin.help_1.2.1.v_201001110000.jar
update\plugins\de.bahntechnik.dd.opn.bin_1.2.0.v_200909232323.jar
update\plugins\de.bahntechnik.dd.opn.bin_1.2.1.v_201001110000.jar
update\plugins\de.bahntechnik.dd.opn.psc.prj.ui.diagram_0.2.0.v_200909232323.jar
update\plugins\de.bahntechnik.dd.opn.psc.prj.ui.diagram_0.2.1.v_201001110000.jar
update\plugins\de.bahntechnik.dd.opn.psc.prj.ui.edit_0.2.0.v_200909232323.jar
update\plugins\de.bahntechnik.dd.opn.psc.prj.ui.edit_0.2.1.v_201001110000.jar
update\plugins\de.bahntechnik.dd.opn.psc.prj.ui.editor_0.2.0.v_200909232323.jar
update\plugins\de.bahntechnik.dd.opn.psc.prj.ui.editor_0.2.1.v_201001110000.jar
update\plugins\de.bahntechnik.dd.opn.psc.prj.ui.help_0.2.0.v_200909232323.jar
update\plugins\de.bahntechnik.dd.opn.psc.prj.ui.help_0.2.1.v_201001110000.jar
update\plugins\de.bahntechnik.dd.opn.psc.prj.ui_0.2.0.v_200909232323.jar
update\plugins\de.bahntechnik.dd.opn.psc.prj.ui_0.2.1.v_201001110000.jar
update\plugins\de.bahntechnik.dd.opn.ui.help_0.2.0.v_200909232323.jar
update\plugins\de.bahntechnik.dd.opn.ui.help_0.2.1.v_201001110000.jar
update\plugins\de.bahntechnik.dd.opn.ui_0.2.0.v_200909232323.jar
update\plugins\de.bahntechnik.dd.opn.ui_0.2.1.v_201001110000.jar
update\plugins\de.bahntechnik.dd.opn.util_0.1.0.v_200909232323.jar
update\plugins\de.bahntechnik.dd.opn.util_0.1.1.v_201001110000.jar
update\plugins\de.bahntechnik.dd.util_1.0.3.v_200908261600.jar
update\web\site.css
update\web\site.xsl

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3 Main functionality

OpenPowerNet version 1.2.1 has the following main functionality:

- Calculation of AC, 2AC and DC power supply system,
- Calculation of magnetic coupling of conductors is done internally,
- Calculation of tractive effort used by OpenTrack and analysis,
- Calculation of braking effort for analysis,
- Evaluation of tractive and braking current limitation,
- Calculation of electrical engines with single or multiple propulsion systems,
- Division of power consumption for multiple Train Operating Companies,
- Evaluation of energy storage for stabilisation of line voltage,
- Calculation of short circuit currents,
- Quick evaluation of network structure using constant current engine model,
- Visualisation of results using analysis of data with prepared Excel-Files and
- Visualisation of results using the automated analysis of the Analysis Tool.

The latest changes since version 1.2.0 are as follows:

- General:
 - Bugfix 299: Now the recorded auxiliary power is 0kW in a neutral zone as well as in case the engine main power switch is OFF.
 - Bugfix 323: Now auxiliary power is used while coasting but not while main power switch is OFF.
 - To use coasting the minimum OpenTrack version is 1.5.5 from November 28th 2009!
 - Bugfix: Before the engine data were recorded twice for the last time step of a existing train, now only once as it should be.
 - Bugfix 320: Special characters as well as leading and trailing spaces are now removed from project name.
 - Bugfix 342: Times are now saved to database and shown in console as local time. Before GMT was used.
 - The message ID from Exceptions, shown in the GUI console, is now the file and line from the cause of the exception and not the last in the stack. This means its more easy to locate the code causing the error.
- Analysis Tool:
 - Improved handling of missing data in selection dialogues.
 - Removed the possibility to set timeStart == timeEnd, which would lead to a time duration of 0s, timesteps in scope = timeStart ... timeEnd-1.
 - Fixed handling of lines without stations and invalid station files.
 - Fixed some SQL queries that could lead to abort of analysis.
 - Fixed calculation of losses in switches.
 - Fixed bug in screen size detection, set default image size of 1368x720 pixels in magnetic field tool if screen size can not be detected.

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- Fixed display of underline character in project and line name in magnetic field tool.
- Changed unit of field density to mT to prevent usage of non-ASCII character "μ" in magnetic field tool.
- Clear console window of GUI at start of calculation.
- Changed output directory and default database are now active without restart.

- GUI:
 - Bugfix 311: The PSC Viewer default layout was corrupt in case a conductor from type "unknown" was used in the Project-File. Type "unknown" added.
 - Bugfix: Only one console with name OPN is created while starting Analysis. Before 2 consoles with same name were created.
 - Bugfix 317: Fix the problem to have multiple instances of the modules running.
- PSC:
 - Bugfix 325: PSC did crash in case the conductor of a conductor switch did not exist.
 - Bugfix 322: Short circuit engine is now able to pass a neutral zone without error.
 - Bugfix: Short circuit engine was inserted with imaginary part, now only real.
 - Check constraints: The maximum allowed number of contact wires per track is 1 and rails per track is 2.
 - A warning will be displayed in case a switch name mentioned in the Switch-File does not exist in the Project-File. The simulation will not be stopped but the switching will be ignored.
 - Brake line while writing "." and "#" during collecting/writing nodes, conductors etc. to database.
 - Add error message in case a conductor for leakage connectors does not exist.
 - The conductors after and before the feeder connection from a substation to the line are recorded in case current or voltage of the substation shall be recorded. This is necessary to use Substation.xls in case only substations shall be recorded.
 - Now it is possible to specify the same connector slices with equal distances using attributes "firstPos_km", "lastPos_km", "maxDistance_km" and "skipLastPos" as well as using specific positions using element "Position".

4 Known restrictions

OpenPowerNet is tested with OpenTrack version 1.5.5 (2009-11-28) and should only be used with this version.

OpenPowerNet is a single user application. It is not tested to use the same database for multiple users at the same time.

The Engine-File uses the RailML rollingstock schema version 1.03 with OpenPowerNet specific extensions and is therefore not 100% compatible with the mentioned version 1.03.

5 Version of corresponding documentation

The following table lists the version of the documents related to OpenPowerNet 1.2.1.

Document	Version
Installation Instruction	1.2.1
User Manual	1.2.1

6 Known issues

The following table contains all known but unsolved bugs.

ID	Summary	Status