

OpenPowerNet  
Release Notes Version 1.2.2

**Institut für Bahntechnik GmbH**  
**Branch Office Dresden**

**Document No. OPN/RN/1.2.2**

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Author	Review	Release
_____ Date Martin Jacob	_____ Date Harald Scheiner	_____ Date Dr. Jörg von Lingen

## 1 Introduction

### 1.1 Overview

The purpose of this document is to describe the changes and the status of OpenPowerNet version 1.2.2. 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 1.2.2 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



```

OPN_InstallationInstruction_1.2.2.pdf
OPN_ReleaseNotes_1.2.2.pdf
OPN_UserManual_1.2.2.pdf
OpenPowerNet\my.ini
OpenPowerNet\OpenPowerNet-1.2.2.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  
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### 3 Main functionality

OpenPowerNet version 1.2.2 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 1.2.1 are as follows:

- General:
  - Bugfix 352: Effort requests where previously limited according to the ATM model while outside of timescope. Now the requests are returned to OT as requested to reach the same train positions like in simulation without OPN at the beginning of timescope.
  - Bugfix 358: For limited auxiliary power the engine never achieved a positive effort. As no traction power is needed for  $v=0$  ( $P=F*v$ ), the full effort can be achieved for  $v=0$  now.
  - Bugfix 359: For limited auxiliary power and consuming engine the regenerated power was not added to auxPower\_kW in database.
  - Bugfix 368: Set internal ID for track based on network instead of line, which could lead to wrong conductor display in Automatic Analysis.
  - Bugfix 374: Allow coasting engine to use electrical brake.
  - Check that all time steps are in the simulation time step raster set in OpenTrack. If the check fails the simulation will be terminated.
- Apservers:
  - Workaround: The last timestep of a course was not simulated in OPN in case the trainDied request sent by OT had the same timestamp.
  - Return exception in case a train should die before created.
- ATM:
  - Improved current limitation iteration for more stability.
  - Added constraint: Values in efficiency table have to be bigger than 0.
  - Bugfix 383: Calculation of standing engine without auxiliaries could fail.

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- PSC:
  - Bugfix 349: Coupling calculation was wrong (no big difference) in case earth node was not at the first slice in a line.
- GUI:
  - Nothing
- Analysis
  - Nothing

#### 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 1.2.2.

Document	Version
Installation Instruction	1.2.2
User Manual	1.2.2

#### 6 Known issues

The following table contains all known but unsolved bugs.

ID	Summary	Status