

OpenPowerNet
Release Notes Version 1.2.0

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Document No. OPN/RN/1.2.0

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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 1.2.0. The document contains:

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

1.2 Configuration

See document Installation Instruction version 1.2.0 for required third-party software versions.

1.3 Acronyms and abbreviations

The following abbreviations are used within this document.



Abbreviation	Description
CD	Compact Disk
DC	Direct Current
AC	Alternating Current

2 List of files on CD delivery

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OPN_InstallationInstruction_1.2.0.pdf
OPN_ReleaseNotes_1.2.0.pdf
OPN_UserManual_1.2.0.pdf
OpenPowerNet\my.ini
OpenPowerNet\OpenPowerNet-1.2.0.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\vcredist_x64.exe
ThirdPartyPrograms\vcredist_x86.exe

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3 Main functionality

OpenPowerNet version 1.2.0 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 1.1.0 are as follows:

- Analysis Tool is available with automated analysis of.
 - Voltages and leakage currents along the line.
 - Connector currents, power versus time and as time-rated load period curve
 - Voltage, current, power, energy of substation and power supply versus time and as time-rated load period curve.
 - Calculation of vehicle data like transport quantity, absolute energy consumption, specific energy consumption, recovered energy, available and used brake energy.
 - Concluded energies per network of total energy balance, total losses balance, braking energy balance and performance characteristic regarding regeneration.
 - Calculation of magnetic field as single pictures or as movie at a specific location over the time.
 - Magnetic field diagram is available with colours, ISO-curves, absolute values ore with right cause by the current direction.
- Extend GUI functionality
 - Schema directory is available from menu and toolbar.
 - Add database export functionality.
 - Add database import functionality.
 - Unify all dialogs of database tasks.
 - Using scheduled jobs for database tasks, jobs can run in the background and wait until a previous task is finished.
- Bugfix:
 - Bug 252: Now record currents and voltages for all time steps to database, also if no course is in a network. This is needed for analysis.
 - Bug 263: Now energy storage loading starts with the OpenPowerNet simulation start time specified in the Project-File.

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- Rename conductor types ReinforcementFeeder to Feeder and ReinforcementReturnFeeder to ReturnFeeder.
- Attribute "frequence_Hz" in element "Network" of Project-File is now correct spelled as frequency_Hz.
- Add check whether there are two switches between two nodes. Or two isolators between two nodes. Or isolator and switch between two nodes. This is not allowed and will abort Project-File loading.
- The auxiliary power provided from engine is now recorded to database. The auxiliary power includes the power for engine auxiliary and the share of the trailer auxiliary in case there are multiple engines in one train.
- Configuration of "dbUser" and "dbPasswd" in Project-File is not required anymore if the connection is already set up in ODBC panel.
- Correct typo and rename attribute "OdbcDns" to "OdbcDsn" in Project-File root element.
- Write used TypDef-File to database table sim.

4 Known restrictions

OpenPowerNet is tested with OpenTrack version 1.5.5 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 1.2.0.

Document	Version
Installation Instruction	1.2.0
User Manual	1.2.0

6 Known issues

The following table contains all known but unsolved bugs.

ID	Summary	Status
299	Auxiliary power is also recorded with full power in case the course is passing a neutral zone and has no line side power supply.	OPEN