



Software **E**ngineering
& **P**roject **M**anagement

SEPM Products

Release 2018-01

New Features

Document Information	
Abstract	This document describes new features in the SEPM product release 2018-01
Version	2018-01
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1 Overview

1.1 Changes Overview

This Release **2018-01** covers the following improvements:

- Improvements of the **SEPM X-Translator**, in particular a GeoJSON format which is part of the Bundle and some detail improvements
- A direct connection to the NEPLAN 360 calculation engine through the **SEPM NeplanAcp**
- Improvements of the **SEPM ISYBAU Interface**

1.2 Installation/Upgrade

1.2.1 System-Requirements

SEPM Products 2018-01 are supported on Smallworld 400 to 430, as well as Smallworld 5.

SEPM NEPLAN DLLs require NEPLAN Desktop 5.5.4 or higher.

The **RealDWG™-based AutoCAD DWG/DXF format** requires .net 4.7.

The **SEPM ISYBAU Interface** Requires NRM Wastewater for Smallworld 4.3

The **NeplanAcp** uses the Neplan Calculation DLL 10.7.*

1.2.2 Upgrade of Software Modules

The upgrade can be done as usual with following steps

- Replace product **x_translator**
- Copy SEPM customer modules without any changes
- Copy license files from the old to the new version (unless you have configured the path to the license files *x_base_settings.licenses_dir*)

1.2.3 RealDWG™-based AutoCAD DWG/DXF Format

This release requires a new version of the helper program DwgAcp.exe:

- Uninstall any existing *DwgAcpSetup.msi*. Please make sure that the installed files have been completely removed from the system
- Install the new *DwgAcpSetup.msi* from this release 2018-01. The installation directory should not contain any spaces (for example *C:\DwgAcp50*)
- Make sure that the *SW_ACP_PATH* includes the directory used in the setup.

2 SEPM X-Translator

2.1 GeoJSON Format

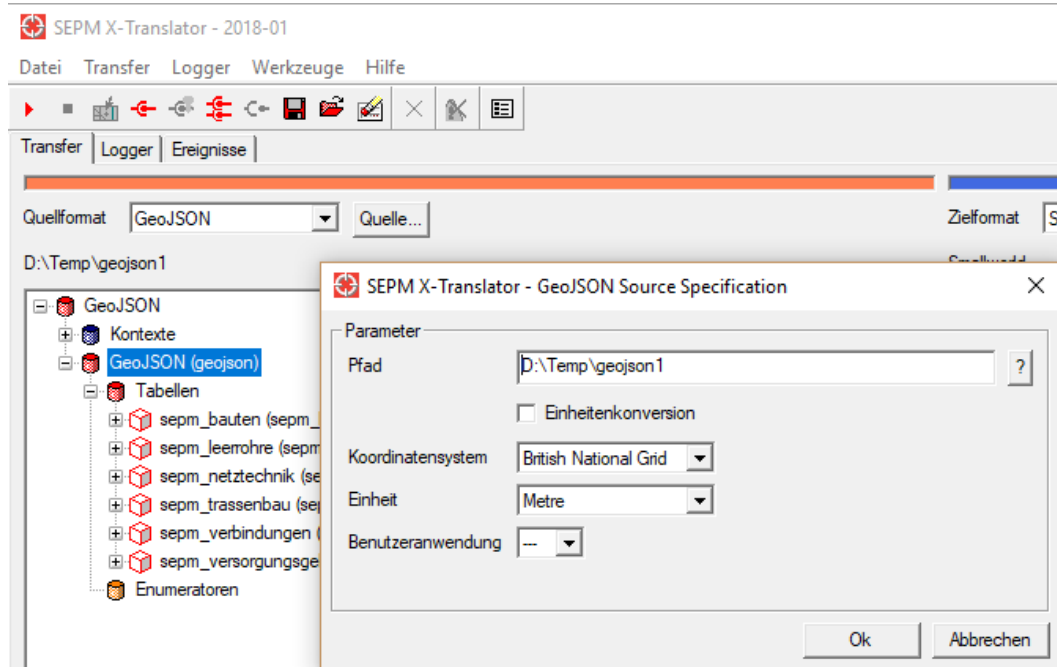
2.1.1 Overview

GeoJSON is a GIS format that encodes geographic data in JSON notation. It is defined in a freely available specification (<https://tools.ietf.org/pdf/rfc7946.pdf>) definiert. The following is an example of GeoJSON data:

```
{
  "type": "FeatureCollection",
  "name": "bauten",
  "features": [
    { "type": "Feature", "properties": { "id": 1, "zustand": 1, "art_bau": 1 }, "geometry": {
      "type": "Point", "coordinates": [ 368241.374, 813729.231 ] } },
    { "type": "Feature", "properties": { "id": 2, "zustand": 1, "art_bau": 1 }, "geometry": {
      "type": "Point", "coordinates": [ 373722.284, 824280.450 ] } },
    { "type": "Feature", "properties": { "id": 200, "zustand": 2, "art_bau": 3 }, "geometry": {
      "type": "Point", "coordinates": [ 361138.623, 808599.048 ] } },
    { "type": "Feature", "properties": { "id": 201, "zustand": 2, "art_bau": 3 }, "geometry": {
      "type": "Point", "coordinates": [ 368708.351, 817369.373 ] } },
    { "type": "Feature", "properties": { "id": 202, "zustand": 2, "art_bau": 3 }, "geometry": {
      "type": "Point", "coordinates": [ 366327.299, 818621.361 ] } }
  ]
}
```

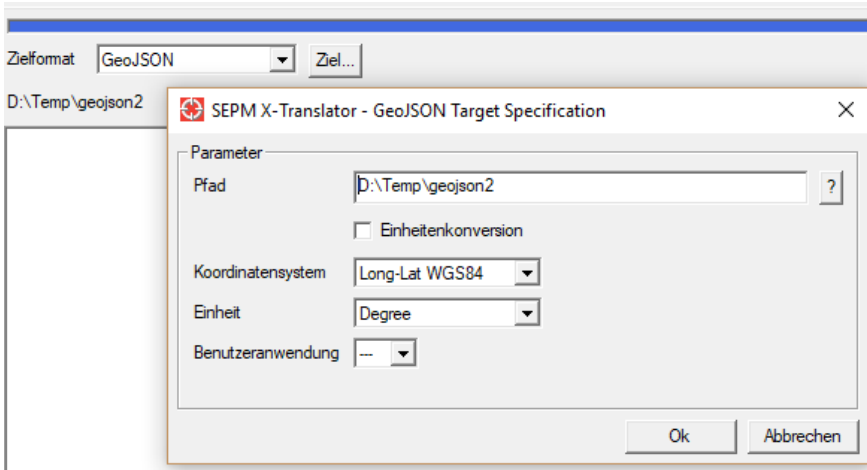
The coordinate system of GeoJSON is usually set to WGS84, but other coordinate systems are also commonly used. In the X-Translator the correct coordinate system must be entered in the user interface.

2.1.2 GeoJSON Source Format

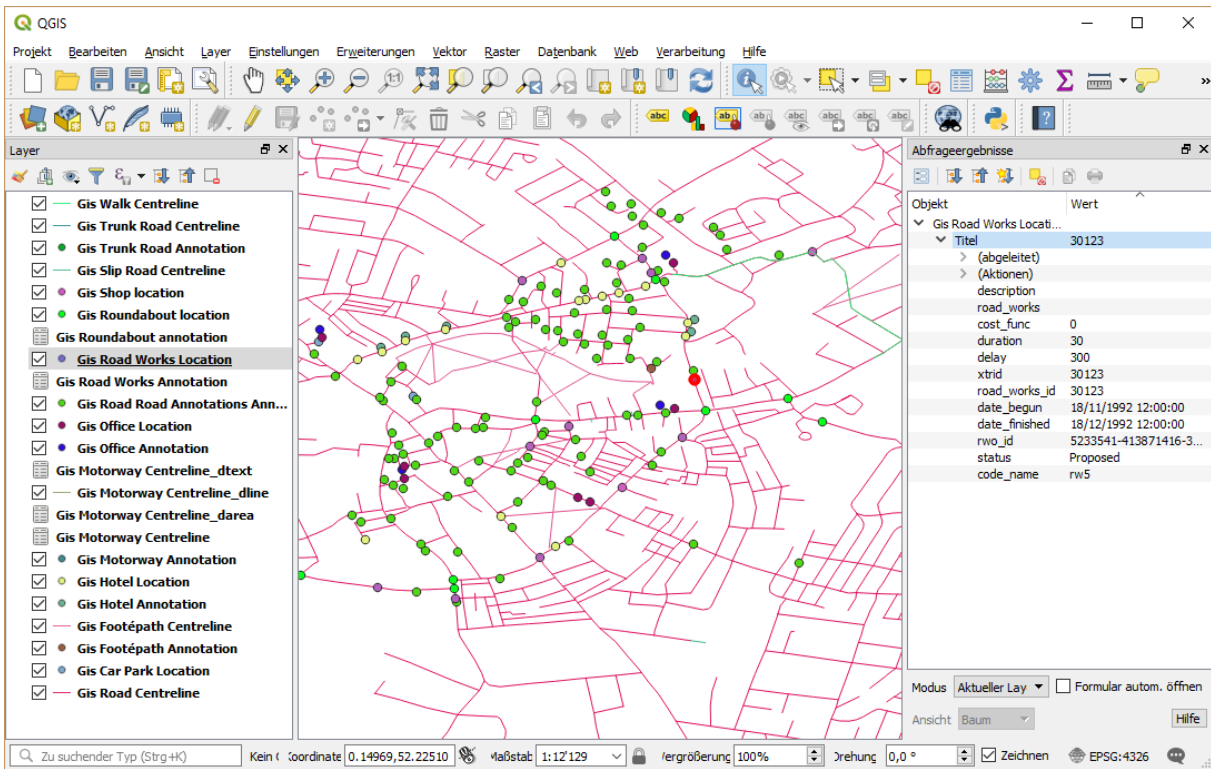


The GeoJSON source format is similar to the Shape source format: Enter a directory containing GeoJSON files (file extension *.geojson). The GeoJSON source format can read geometry types Point, MultiPoint, LineString, MultiLineString, Polygon, MultiPolygon. The geometry type GeometryCollection is not implemented.

2.1.3 GeoJSON Target Format



The GeoJSON target format is similar to the Shape target format. Enter a target directory, the GeoJSON file structure will be generated from the source data.

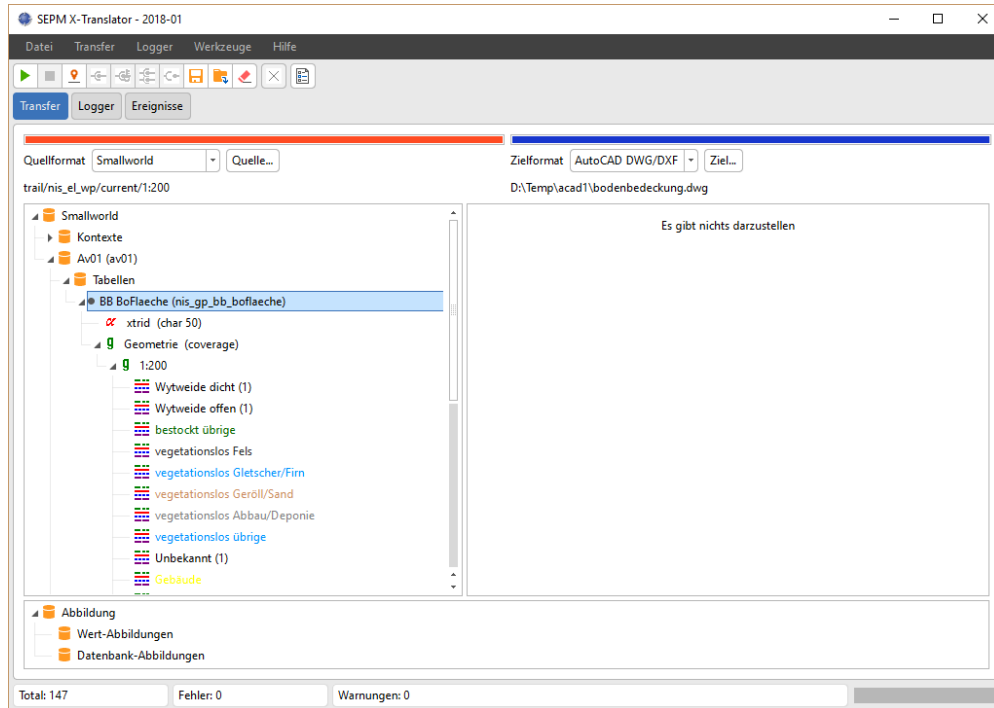


Display of GeoJSON in the software QGIS.

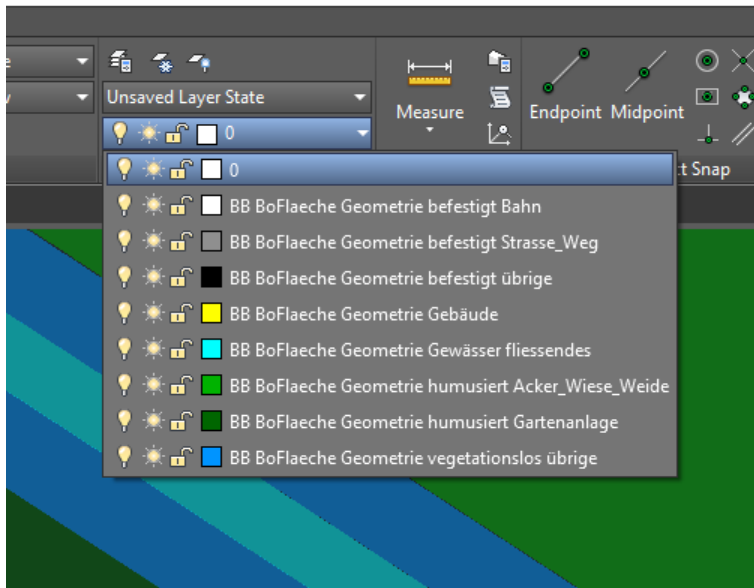
2.2 RealDWG™ "AutoCAD DWG/DXF" Target Format

2.2.1 Create one layer per style

The DXF target format (original DXF12 output) offered an option *'Create layer per style'* to create one individual layer for every style. This option is now also implemented in the RealDWG™ "AutoCAD DWG/DXF" format.



Autodesk DWG TrueView 2018 bodenbedeckung.dwg



Example for *'Create one layer per style'*

The same option was also implemented in the DWG/DXF target format.

2.3 Text Source Format

2.3.1 Option 'Quotation marks delimit field values'

When importing text files quotation marks were interpreted as a field delimiter, the contents inside the quotes was interpreted as one logical field value which could also include semicolons. The quotation marks themselves were omitted. This approach was not always desired and a new option was introduced, the following example demonstrates the effect:

'*Quotation marks delimit field values*' is active. In the following file the field *Remark* is read as *SEPM;ABC* (without quotation marks, with semicolon):

```
ID;Remark
1; "SEPM;ABC"
```

'*Quotation marks delimit field values*' is not active. In the following file the field *Remark1* is read as "*SEPM* and *Remark2* is read as *ABC*".

```
ID;Remark1;Remark2
1; "SEPM;ABC"
```

The same option was implemented in the MIF source format.

2.4 X-Translator GUI

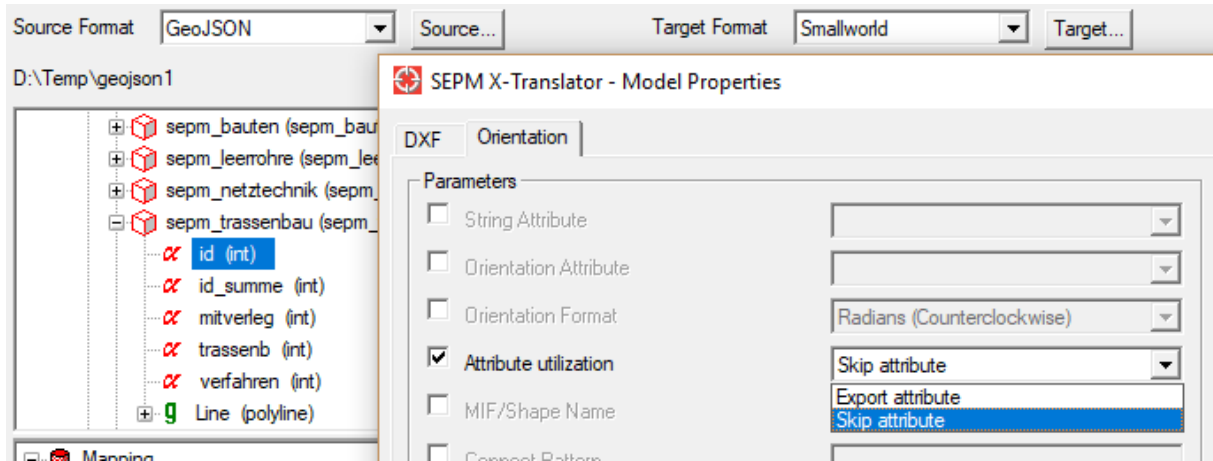
2.4.1 Retain Configured Mapping

When importing files sometimes the requirement exists to configure an import mapping once and then use it for different files to import. This can be accomplished with the following configuration steps:

- Create "template" import files which cover all combinations of cases needed to onfigure the import with respect to attribute or geometry names and attribute values
- Now configure the import mapping using these template files
- Configure the 'Connect Pattern' property in the Model Properties for the source collection (right-mouse-menu). The pattern should match the future target file name. The '*' character can be used as wildcard.
- Example for a CSV file:
 - Template-File: 'Lines_template.csv'
 - Connect Patter: 'Lines*'
 - Importfile: "Lines_IMP001.csv"

2.4.2 Model Properties: Attribute utilization

In the Smallworld source format the exported attributes can be configured through the option *Exported Attributes Tag*. With other source formats it was not easily possible to exclude a particular attribute from the export definition. This can now be accomplished by setting the *Attribute utilization* property to *Skip attribute* in the model properties for this source attribute.

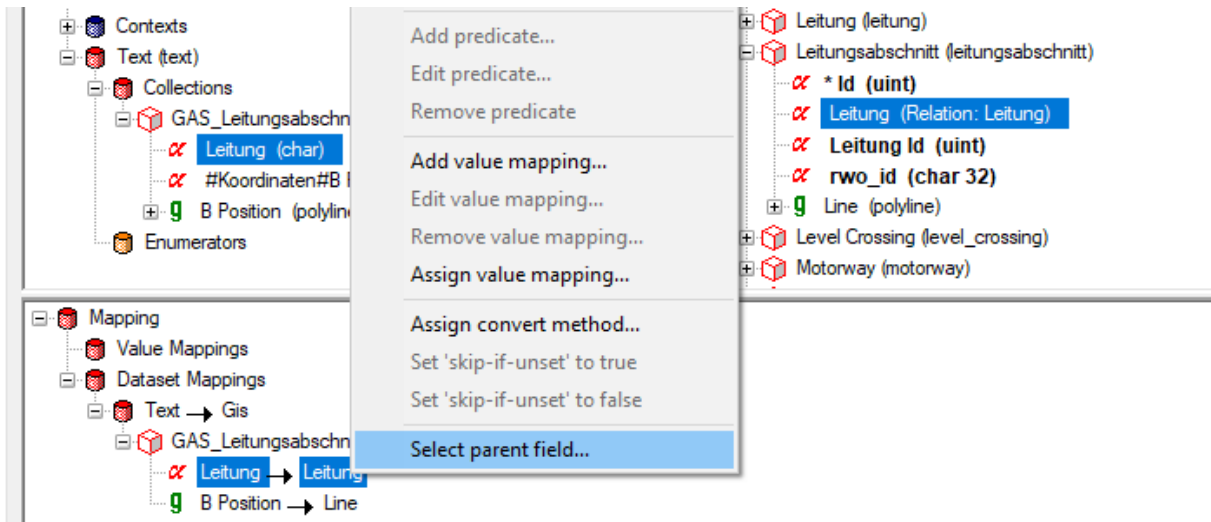


2.5 Smallworld Target Format

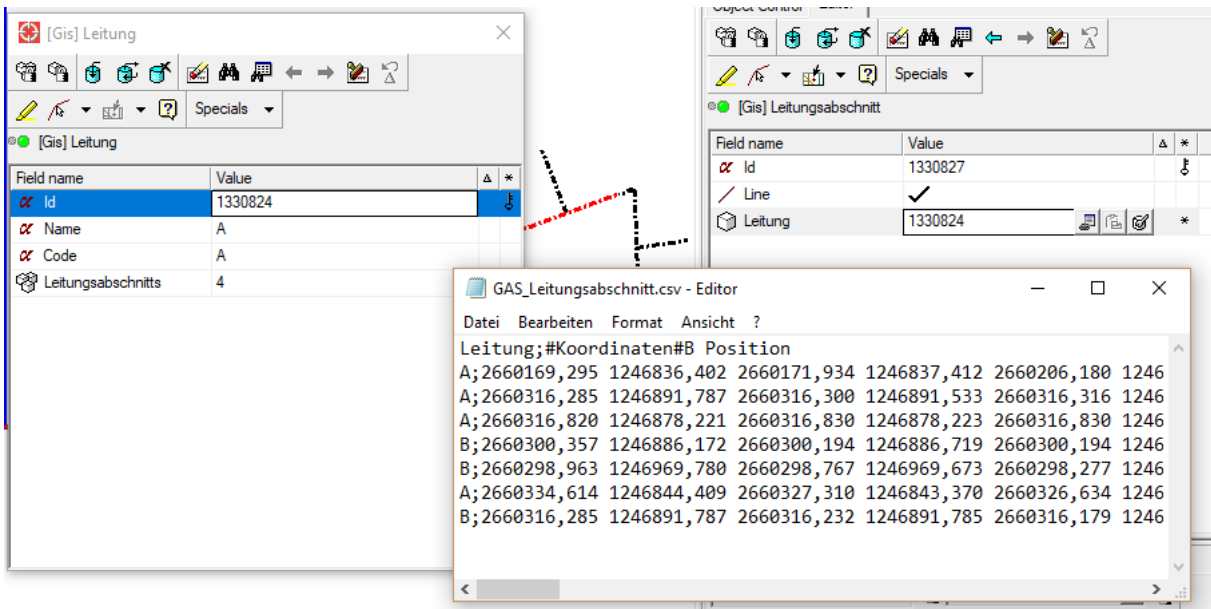
2.5.1 Select Parent Field

Until now a parent relation could be resolved through the ID field or through the aspect field as defined in the data model, using the option *Source value of parent is aspect field (instead of ID)* in the options for the Smallworld Target.

Sometimes however you don't have the ID of the parent object neither the return value of the aspect field, but some other value of the parent table. In this situation you can now select the parent field and assign it to the attribute mapping (source value maps to relation-to-parent) using the *Select parent field...* command in the right-mouse-menu:



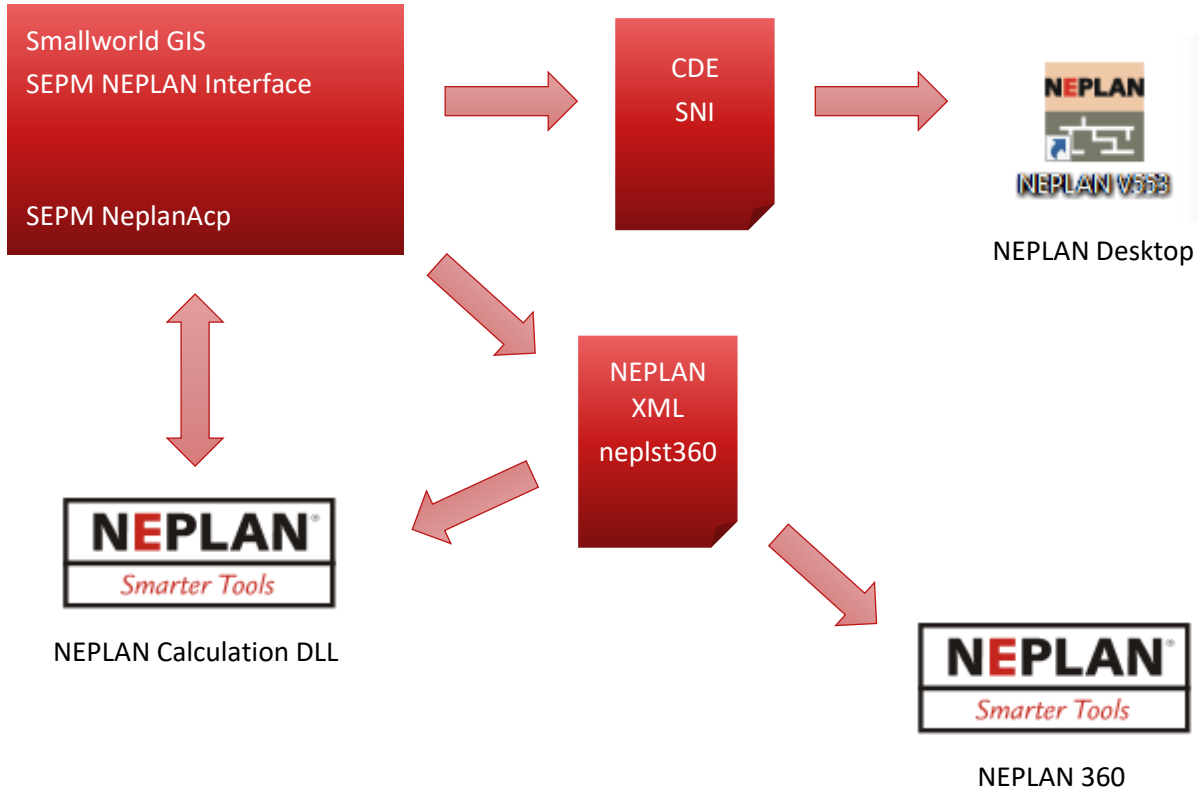
In the following example line sections are loaded and the relation to the line object is created at the same time. The field *Code* was used to identify the parent object for the relation:



3 SEPM NEPLAN Interface

3.1 NeplanAcp

3.1.1 Overview



SEPM offers the following paths to interface with the NEPLAN network calculation package:

- The **SEPM NEPLAN Interface** creates CDE files (NEPLAN ascii format) and SNI files (SEPM NEPLAN Import for additional information), that can be loaded into NEPLAN Desktop.
- The **SEPM NEPLAN Interface** XML files (neplst360), that can be loaded into NEPLAN 360.
- The new **NeplanAcp** creates a direct connection from Smallworld Magik to the NEPLAN calculation engine.

3.1.2 Example 1 - New Disperse Generator

Scenario: You would like to evaluate the consequences of a new generation unit of 50kW, that should be connected with a new cable to an existing cabinet. This is achieved with the following Magik code:

```
n.open_project( l_library_path, l_project_path )
n.new_node( "NODE1" )
n.new_line( "LINE1", "SAM1768", "NODE1", "GKN 3x95/95", 0.2 )
n.new_disperse_generator( "NODE1", "EEA1", 50.0, 1.0 )
n.run_load_flow()
res << n.get_load_flow_results()
n.show_load_flow_results(res)
```

Explanation

- Open NEPLAN 360 project with the existing network
- Add a new node NODE1
- Add a new line LINE1 with type "GKN 3x95/95" with a length of 200m from busbar SAM1768 to NODE1
- Add a new generator EEA1 to NODE1
- Call the NEPLAN Load Flow calculation
- Get back overloaded elements from NEPLAN

3.1.3 Example 2 - New Load

Scenario: You would like to evaluate the consequences of a new load. The NEPLAN object customer connection is used for this:

```
n.open_project( l_library_path, l_project_path )
n.new_customer_connection( "HAS364-N", "CC1", 0.4, 50.0, 60, 2 )
n.run_short_circuit_dach( "CC1" )
res << n.get_short_circuit_dach_results()
n.show_short_circuit_dach_results(res)
```

Explanation

- Open NEPLAN 360 project with the existing network
- Add new customer connection CC1 on house service node. In this example the parameters *Startup current (60 A)*, *Repeat Rate (60 pro Minute)* and *Connection Type (3-phase connection)* were used
- Call the NEPLAN DACH evaluation
- The results of the assessment can be queried and used in the GIS

4 SEPM ISYBAU Interface

This chapter is only available in German.