SEPM Products

Release 2021-02

New Features

Document Information	
Abstract	This document describes new features in the SEPM product release 2021-02
Version	2021-02
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Contents

1 Overview

1.1 Changes Overview

This release ***2021-02*** covers the following improvements:

- ***SEPM X-Translator*** : Numerous detail improvements have been implemented. For example , a "Find" command on the data model structure; or the export of post render sets, enabling exports from the NRM profile view.
- ***SEPM SIA405 Interface***: The interfaces for the canton of Basel-Land now use the SIA405-2015-LV95 model version.
- ***SEPM NEPLAN Interface***: The interface for NIS Strom now considers the orientation of the house service.
- ***SEPM ISYBAU Interface***: The existing function to enter the directory of video files has been extend: Input of the directory with foto files, extension to manhole inspections.

1.2 Installation/Upgrade

1.2.1 Upgrade to version 2021-02

The upgrade to the present version 2021-02 is achieved through exchange of the layered products supplied by SEPM and taking over of the existing licenses, as described in the Admin Manual.

1.2.2 AutoCAD DXF/DWG Format

This version comprises a new version of the helper program ***DwgAcp.exe***. If you use the "AutoCAD DWG/DXF" format you'll need to uninstall the existing *DwgAcpSetup.msi* and install the new setup. The installation directory in this release is:

```
C:\Program Files\SEPM\DwgAcp90
```

1.2.3 Smallworld-Versions

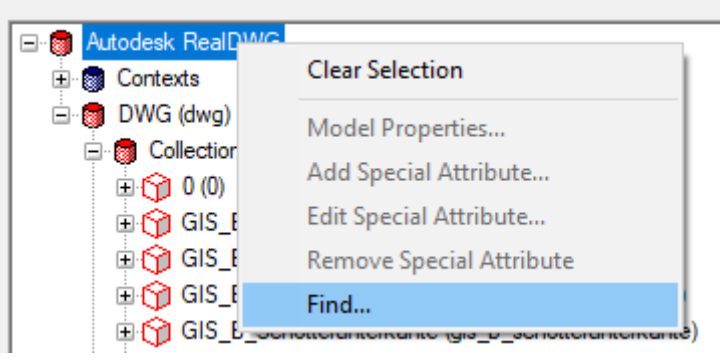
This release supports all Smallworld version from Smallworld 4.0 up to Smallworld 5.2.9.

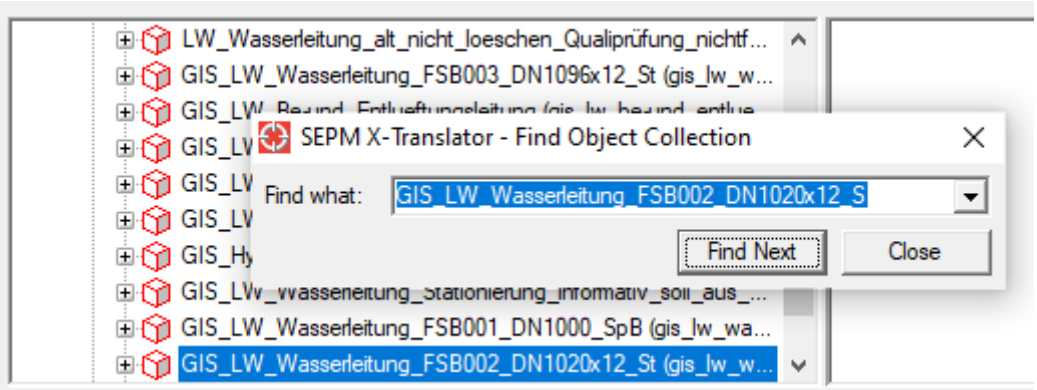
2 SEPM X-Translator

2.1 Functions

2.1.1 Find Feature in Source and Target Model

There is now a "Find" action on the source and target model trees:

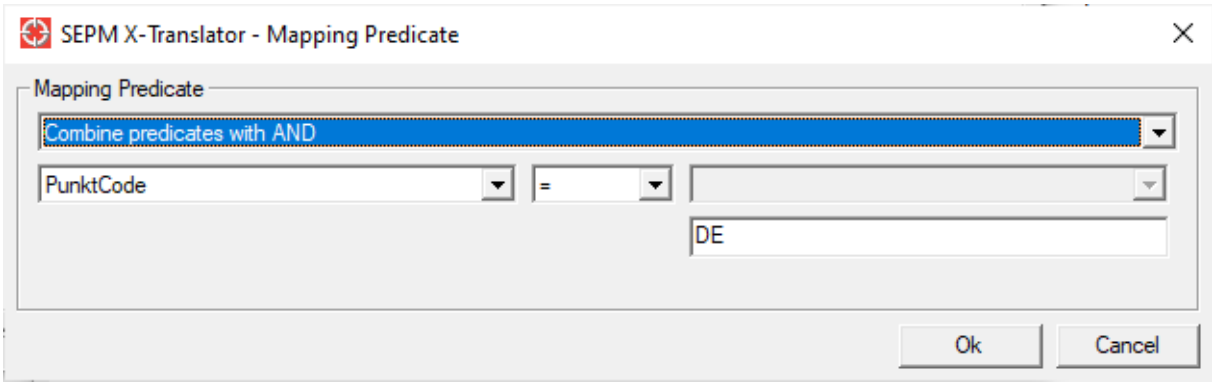




This allows to easily identify one of the collections.

2.1.2 Combine Mapping Predicates with AND

Until now multiple Mapping Predicates have been combined as a logical OR. Using a new choice selection it is now possible to combine them as a logical AND.



Let's assume you want to load the following data and create a mapping only for PunktCode = "DE" AND Objektart = "S":

	A	B	C	D	E	F	G
1	Objektbezeichnung	PunktCode	Objektart	#x#Position	#y#Position	#z#Position	Lagestatus
2	2000834	DE	S	469751,926	5564900,154	234,787	vermessen
3	2000834	SHP	S	469752,030	5564900,316	231,770	vermessen
4	2000834	AP	S	469752,211	5564900,678	231,720	vermessen
5	2000834	ZP	S	469751,638	5564899,947	232,410	vermessen

You can now create such a mapping by selecting *Combine predicates with AND*:

- Sachdaten → Level Crossing
  - >= PunktCode = DE (AND)
  - >= Objektart = S (AND)
  - α Objektbezeichnung → Name
  - g Position → Location

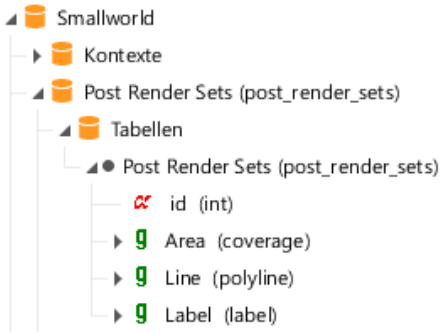
2.2 Smallworld Source Format

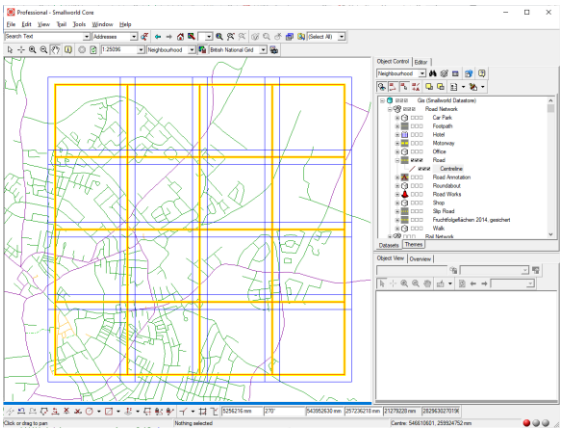
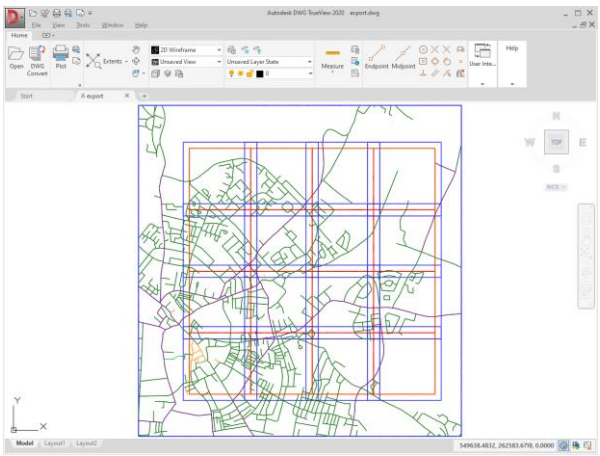
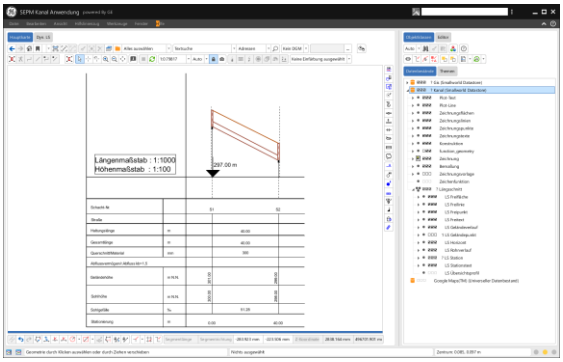
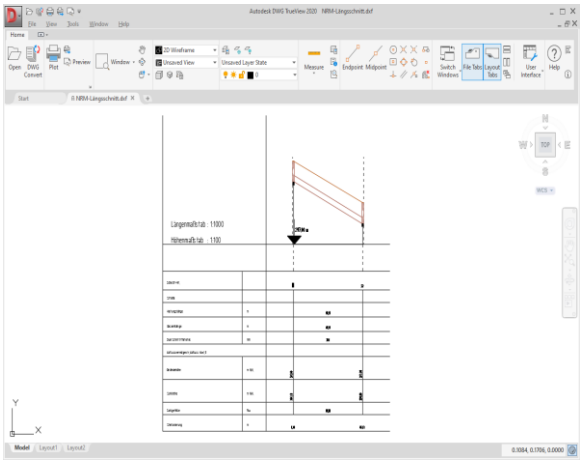
2.2.1 Export of Post Render Sets

The so called "Post Render Sets" are used in a Smallworld application to render geometries that are not stored in the database. This rendering methodology is used, among others, in the following software modules:

- SEPM X-Raster to display the outline of the raster tiles to be exported
- NRM Dynamic Profile to blend in the underlying plot layout

With this version 2021-02 *Post Render Sets* can now be exported. For this purpose a calculated collection *Post Render Sets* is created in the soure model to which the dynamic geometries are associated:

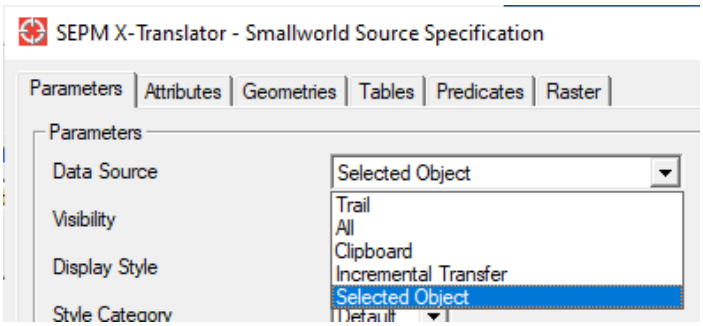


Smallworld	Exported DXF
Post Render Sets from SEPM X-Raster 	
NRM Profile 	

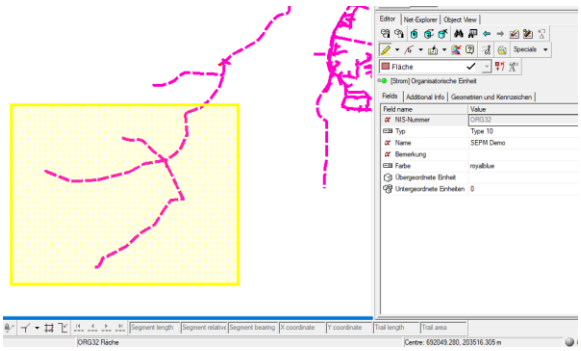
The new option *Export Post Render Sets* in the options GUI *Smallworld Source* tab allows to activate or deactivate this feature.

2.2.2 Determine Export Area through "Selected Object"

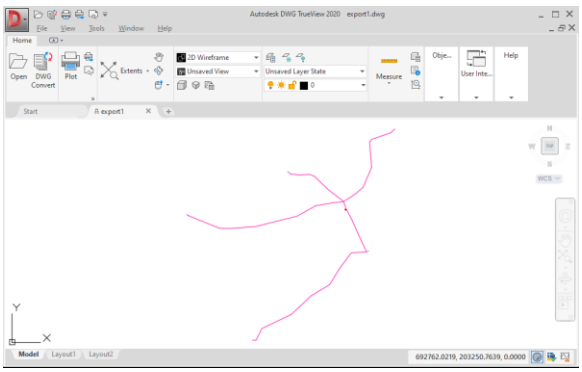
A new entry *Selected Object* in the ***Data Source*** choice list allows configuring the export area through the area geometry of a database record:



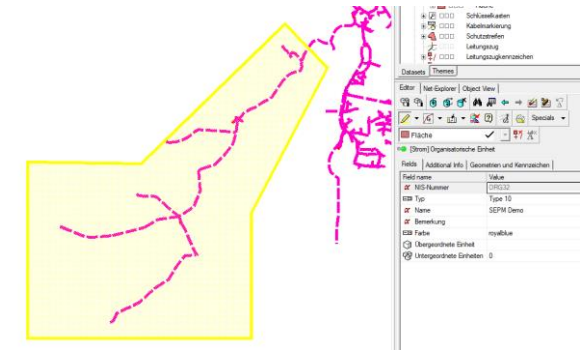
The following example workflow shows how this feature can be used:



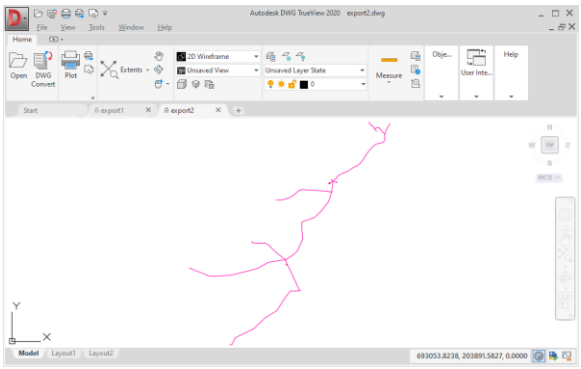
Initial configuration: The area geometry must be selected in the map before clicking the ***Get Trail*** button in the *Smallworld source dialog*.



Exported geometries



Now the area geometry is changed to cover a few more objects. The SEPM X-Translator configuration remains unchanged.

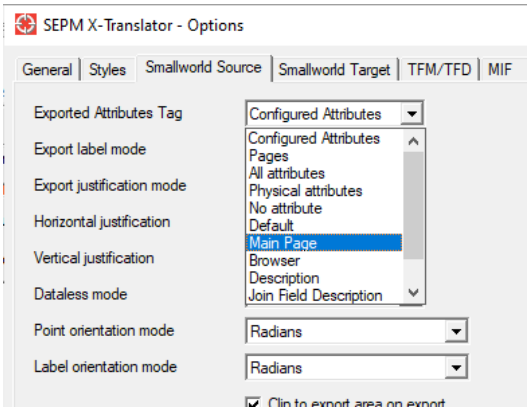


New export using the same configuration

Note that in the mapping file the reference to the export area is saved using the objects URN and the name of the geometry:

```
<source_spec
    spec_type="smallworld"
    data_source="selected_object"
    selected_object_urn="swrefVrecordVdatasetZstromVcollectionZnis_el_org_unitVkeysZ23389418"
    selected_object_geometry_name="area"
```

2.2.3 Selection of the 'main page' attributes (NRM)



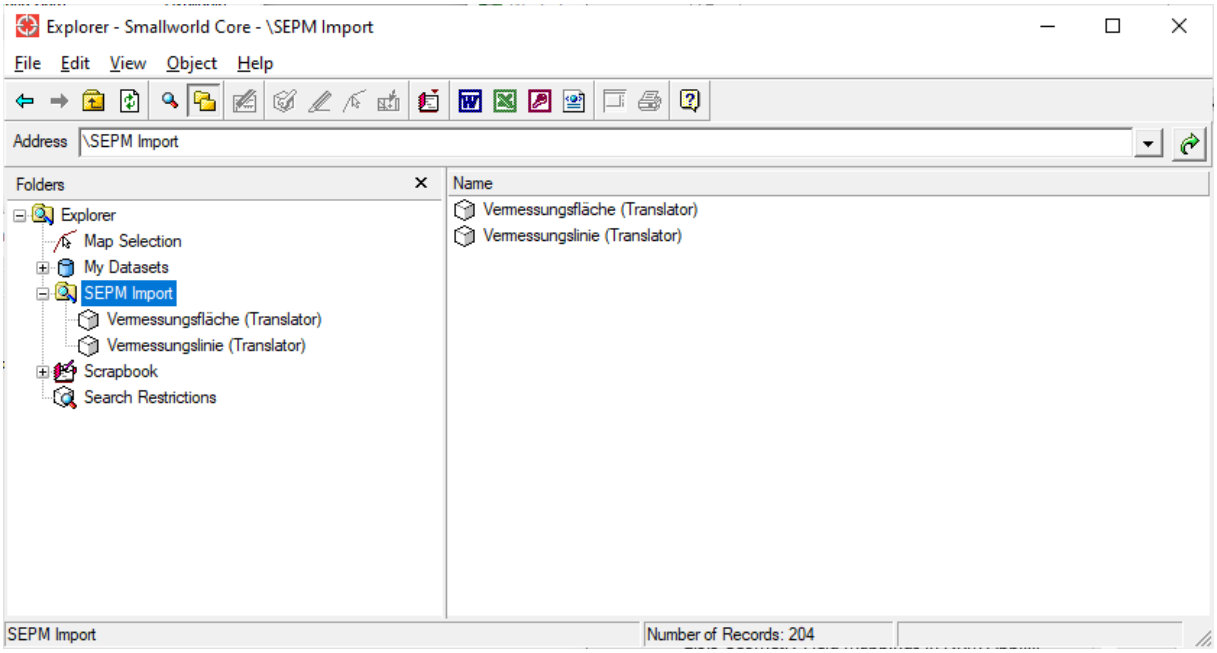
By selecting Main Page on the attributes of the main page are added to the export configuration (This feature is mainly interesting for the NRM application suite).

2.3 Smallworld Target Format

2.3.1 Explore Imported Objects

With the following new option in the *Smallworld Target* tab in the options dialog the loaded objects can be shown in the Explorer:

Option	Description
Browse objects	If selected (Default = No), the loaded objects are displayed in the folder ***SEPM Import*** in the Smallworld Explorer.



Display of the imported records in the Smallworld Explorer

2.3.2 Handling of Default Values for Mandatory Attributes

When importing to Smallworld two uses cases are emerging:

1. The primary goal of the data import is to transfer all the geometric data without data loss. Mandatory attributes should be set automatically to the greatest extent possible.
2. The source data are presumed to be correct, an automatic attribution of values is not desired. If the source data is incomplete no object should be inserted, an error should be recorded in the logfile instead.

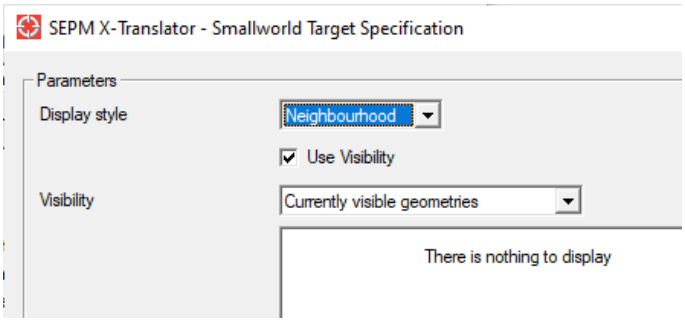
Traditionally the SEPM X-Translator has primarily covered the first use case. To serve also the second use case the following new option has been defined:

Option	Description
Defaults Mode	***Relaxed*** Default values for mandatory attributes are set automatically to the greatest extent possible ***Strict*** No default values for mandatory attributes are assigned.

By using the ***Strict*** no automatic default values are created. If a mandatory attribute value is missing, the insert transaction is aborted and an error is logged.

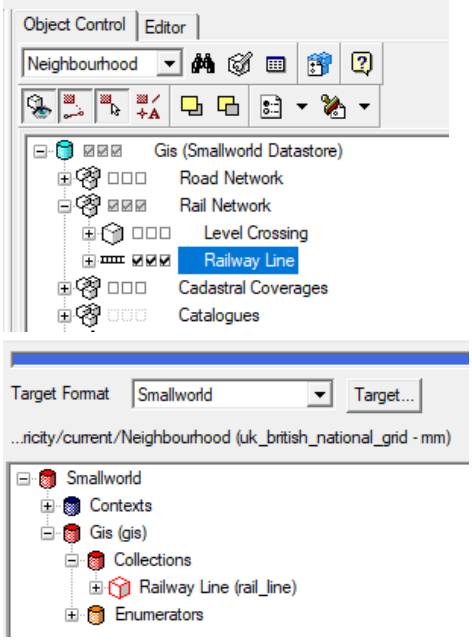
2.3.3 Use Visibility for the Target Model

When dealing with large data models, finding the target collection can be cumbersome. Thanks to the new possibility to show only visible objects, an import mapping can be configured quickly.



Parameter	Description
Use Visibility	***Checked:*** The target model is created based on the selection in the ***Visibility*** choice item (in this release only "Currently visible geometries" is available). ***Not Checked:*** The target model is created using the dataset selection.
Visibility	Visibility used when ***Use Visibility*** is selected.

As an example, if you know into which object(s) to load, you can set those particular objects visible in the object control:



When selecting ***Use Visibility***, only the visible collections are displayed in the target model tree, making it easier to create a mapping just for those objects.

2.3.4 Geometry Field Mappings in NRM Applications

Geometry field mappings in the NRM Gas and Water applications are characterized by modelling additional geometries to serve the purpose of a 'hypernode':

```
MagikSF> print(z)
$
m_wa_abzweig365:
:abzweigrichtung      unset
...
:statusanzeige   "BP:N.OK ÜP:N.OK GSP:N.OK  NL:OK "
:b_position      point:(gis_id(12813725,423312424,2464425))
:b_geom_wa_aw    unset
:b_geom_wa_aw_ab      unset
:b_geom_wa_aw_link    point:(gis_id(33785245,423312424,2464430))
:b_geom_wa_aw_link_ab      unset
:b_geom_wa_aw_link_plan    unset
:b_geom_wa_aw_plan    unset
:b_geom_wa_gw    unset
:b_geom_wa_gw_ab      unset
:b_geom_wa_gw_link    unset
:b_geom_wa_gw_link_ab      unset
:b_geom_wa_gw_link_plan    unset
:b_geom_wa_gw_plan    unset
:b_geom_wa_vw    unset
:b_geom_wa_vw_ab      unset
:b_geom_wa_vw_link    point:(gis_id(12813725,423312424,2464425))
:b_geom_wa_vw_link_ab      unset
:b_geom_wa_vw_link_plan    unset
:b_geom_wa_vw_plan    unset
:b_geom_wa_zw    unset
:b_geom_wa_zw_ab      unset
:b_geom_wa_zw_link    unset
:b_geom_wa_zw_link_ab      unset
:b_geom_wa_zw_link_plan    unset
:b_geom_wa_zw_plan    unset
:sp_position     unset
...
```

In this example the object WA Abzweig consist of two geometries:

```
:b_geom_wa_aw_link    point:(gis_id(33785245,423312424,2464430))
:b_geom_wa_vw_link    point:(gis_id(12813725,423312424,2464425))
```

The geometry field mapping (and hence the editor or queries) use the b_geom_wa_vw_link-geometry:

```
:b_position      point:(gis_id(12813725,423312424,2464425))
```

The b_geom_wa_aw_link-geometry establishes the topological connection to the AW-network:

```
:b_geom_wa_aw_link    point:(gis_id(33785245,423312424,2464430))
```

The question now arises how to export this situation:

- Export both geometry, since both are rendered if they are set visible

- Export only one of those geometries, as the user can access only one of them in the editor

SEPM Version 2019-01 with Patch 4181 until SEPM Version 2021-01 exports in some hardcoded collections, see *x_translator_smallworld_source_spec.is_skip_geom(),* only the geometry used in the field mapping. Starting with version 2021-02 this method has been extended to all similar cases.

2.3.5 Reading of multiple lines (MultiLineString), change 4399

When the option "Exploded geometries into multiple objects on import (needs sysid)" is NOT checked, and a line with multiple parts is read (from a MultiLineString or similar source geometry type), then this change attempts to merge the individual lines into one line geometry first.

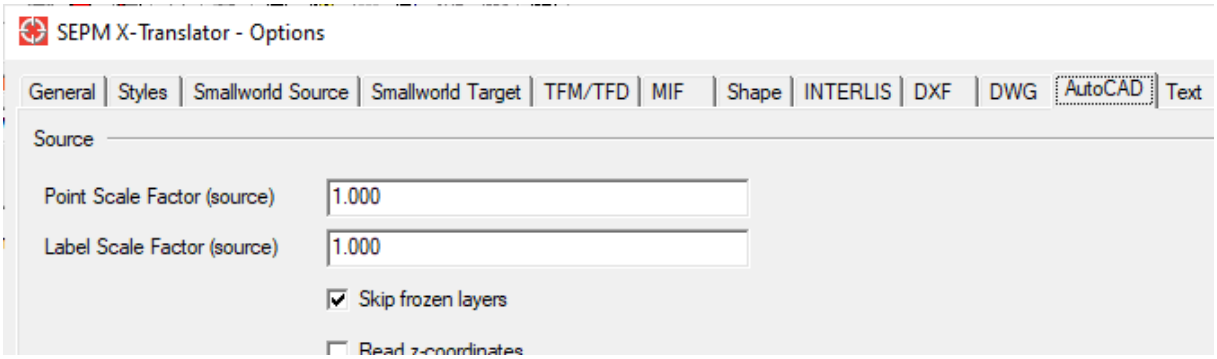
2.4 AutoCAD DWG/DXF Format

2.4.1 Removal of the Scale Parameter

In the AutoCAD DWG/DXF format the parameter to enter the scale has been removed. The scale factor implicit to the selected ACE display style in Smallworld format is now used.

The parameter 'Scale' was not very intuitive and also redundant. Through differing values in source and target, scaling effects when importing text and point geometries from DXF files could be achieved. This is not possible any longer, but can be recreated through new options for scaling points and texts, as described below.

2.4.2 New Options for Scaling Point and Text Geometries



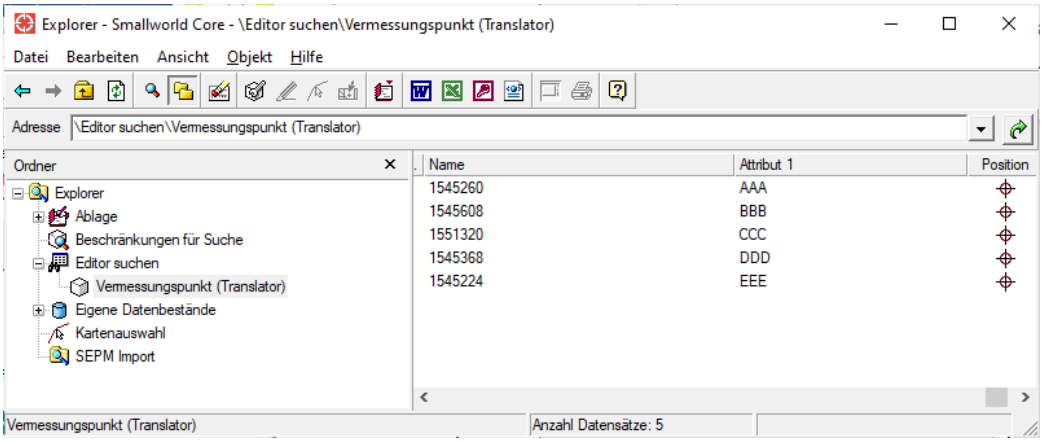
Parameter	Description
Point Scale Factor (source)	Scale factor applied to point geometries read.
Label Scale Factor (source)	Scale factor applied to text geometries read.

These scale factors are applied to point and respectively text geometries read with AutoCAD DWG/DXF format.

2.5 Text Source Format

2.5.1 New Code #unset#

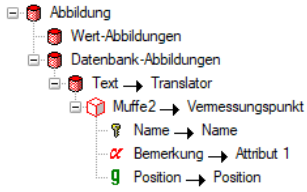
The Smallworld collection Survey Point holds the following records:

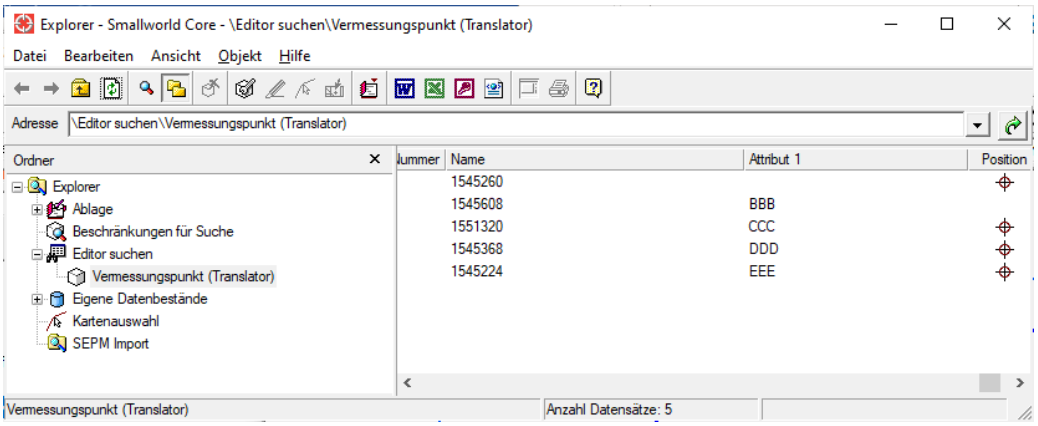


Now the following file should be read to update the data:

	A	B	C	D
1	Name	Bemerkung	#x#Position	#y#Position
2	1545260	#unset#	682999,236	205051,811
3	1545608	BBB	#unset#	#unset#
4	1551320	CCC	682955,891	205105,648
5	1545368	DDD	682913,127	205040,540
6	1545224	EEE	682951,812	205184,707

The attribute *Name* is used to identify the objects with *Connect-ID*. For object 1545260 the *Attribut 1* should be set to _unset, and for object 1545608 the point geometry *Position* should be set to _unset. This is now possible by using the special "#unset#" value in the source data.





Result after the import.

3 SEPM SIA405 Interfaces

3.1 SIA LKMap/BL Interface

3.1.1 SIA405-Version

The export configuration has been changed to the latest SIA model SIA405_LKMap_2015_2_d-20180427.ili.

4 SEPM NEPLAN Interface

4.1 NIS Strom

4.1.1 Consideration of the the House Service Orientation

When exporting to GIS coordinates the use of the house service orientation leads to a visually appealing presentation. If the algorithm 'Create house service fuses' is active, the line is generated in the direction of the house service.

Present export: The line generated has been directed downwards.

New export: the line generated is directed according to the house service's orientation.

5 SEPM ISYBAU Interface

This chapter is only available in German.