

Basis for effective asset management and regulation management

Smallworld NRM

Network Resource Managers for
Electricity, Gas, Water and Wastewater

Topic Paper for Releases 4.2 and 4.2 TSB 16



Authorized Partner
GE Energy



Smallworld NRM

Basis for effective asset management and regulation management

Smallworld NRM are utility-specific standard applications for documentation, update, analysis and statistical evaluation of network data, utility assets and other geographical data. These mature and innovative products based on the Smallworld GIS are available both for energy suppliers and for public authorities.

Smallworld GIS in combination with Smallworld NRM for energy and water are economical and ensure that the simulation of network data conforms to the real world, the way operators of such networks expect from a GIS and in a manner that is intuitive to operate. Precisely this proximity to the practical world brings added benefit when using Smallworld NRM and makes work more efficient and productive from data collection through to the mobile workplace.

The Smallworld technology, with its focus on simulating complex networks and large

data quantities, is complemented by the NRM products and the functional logic and functionality required to ensure a trouble-free processing sequence for the network operator.

Over 15 years of development work in lively exchange with users, and more than 30 years of experience in the collection of graphical data in the ESC environment have been invested in Smallworld NRM for electricity, gas, water and wastewater systems from GE/Mettenmeier. It is precisely for this reason that the standardised data models have long

since become established in the market and are today the most mature Smallworld products available.

As a user of the NRM, you are given proven software that is in successful operation in more than 300 companies. Unlike customised solutions, this approach distributes development costs over a broad base. Smallworld NRM from GE/Mettenmeier are always the more cost-effective alternative to customised solutions both in terms of maintenance, and when it comes to system upgrades.

The standard NRMs from GE/Mettenmeier use mature and repeatedly proven products for the digital geographic administration of your networks, bringing you the following benefits:

Proven products

- Ensured product quality through large number of users
- Faster productivity through immediately deployable standard environment
- Multi-utility capability with integral operating concept
- Reduced training effort through uniform user interface of the NRM
- Modular, configurable and parameterisable product modules (instead of a monolithic, individual solution)
- Effective, low-cost collection and update of data through optimised design and dimensioning functions
- Upwards compatibility among individual software releases through a controlled development and quality assurance process
- Use of the GIS data in the technical and commercial corporate processes through add-ons, interfaces and integration technologies

Continued improvement

One of the strengths of Smallworld NRM is its highly practical relevance, which ensures continuous coordinated further development. User requirements are incorporated directly into the product development in the context of the working groups in the Smallworld User Group. The result is software that optimally handles your work processes for update and analysis, and thus provides a solid data foundation for network operation and the technical and commercial decision processes. The NRMs are an indispensable part of the database setup and security. They are the only way to ensure network management and enable strategic and regulatory network evaluation and forecasting. Both aspects are becoming increasingly important and place high demands on the quality of the underlying data.

Support for standards and stipulations of regulation management

NRMs for gas and water with their DVGW-GAWANIS data models are certified, and like all other NRMs from Mettenmeier, meet the stipulations made by German associations such as VDEW, DVGW, AGFW and DWA. General standards such as DIN and CIM are also considered during implementation.

Equally important is the implementation of regulation authorities' requirements with respect to § 3 Nr. 27 EnWG (German Electricity and Gas Supply Act) and of trade associations' stipulations. The route analysis and network statistics modules contained in the NRM collect and process the GIS-relevant information, such as pipe lengths, connection rate or network complexity as appropriate. The further standard module 'VDN outage and availability statistics' provides the functions required to record faults and determine downtimes for mandatory reporting in the case of supply failures.

Smallworld NRM

Current Release NRM 4.2 and NRM 4.2 TSB 16 (March 2012)

In 2011, the official Smallworld NRM 4.2 Release was published for the German market. This release placed a particular focus on the further development of NRM Wastewater. The latest release, NRM 4.2 TSB 16, followed in March 2012. This TSB implements comprehensive extensions and functions for NRM Gas, Water and Electricity to further enhance their ease-of-use.

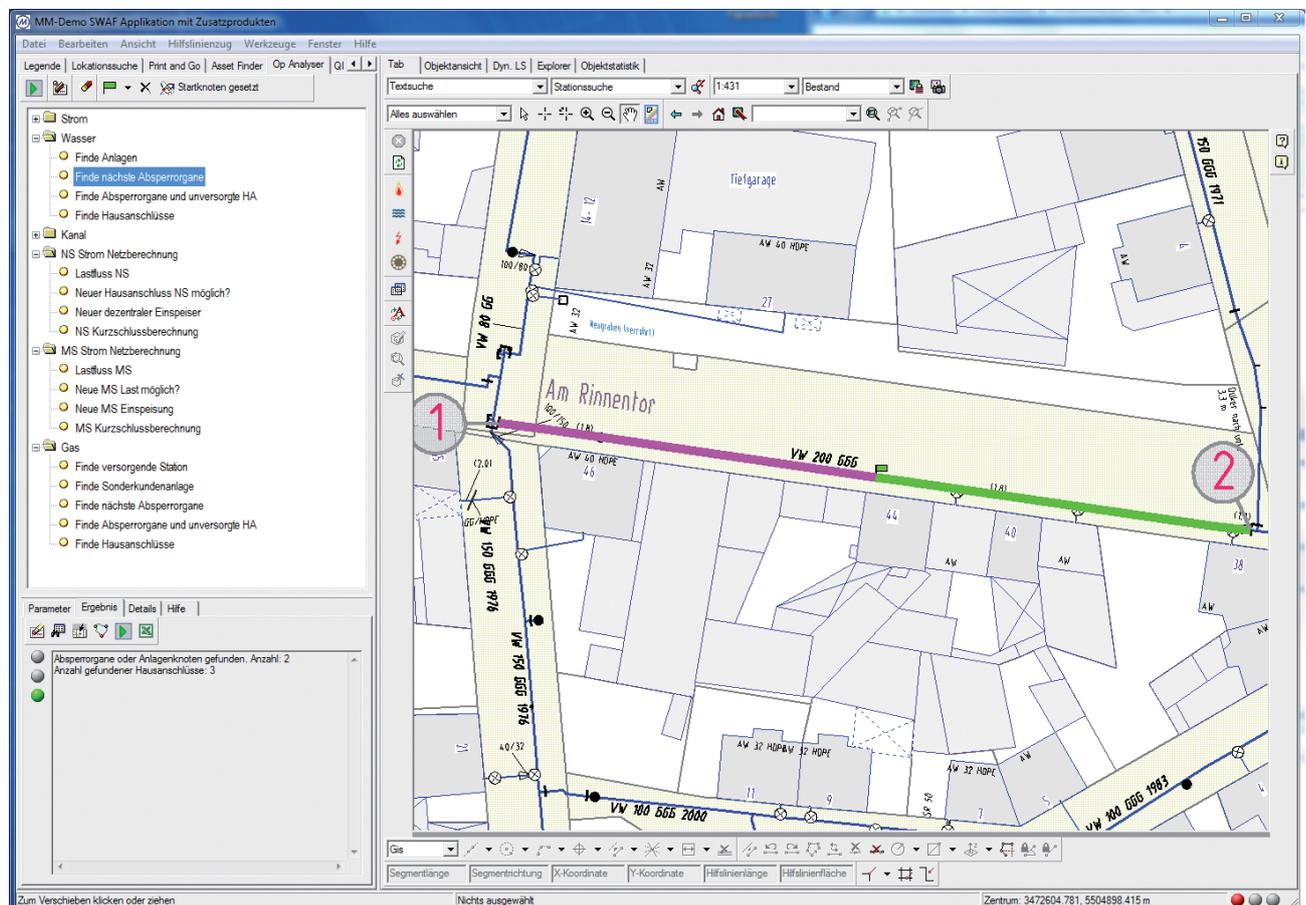
Release 4.2 and the TSB from Mettenmeier now replace NRM Gas, Water, Wastewater and Electricity on a new level of maturity. One essential aspect was the support for current DVGW and VDE standards, but also a wide range of functional extensions to provide optimal support for the update of data on a day-to-day basis, as well as sporadic work in the system from other user groups. Many of the requirements implemented in Release 4.2 and in TSB 16 originate from the SWUG workgroups and discussions with customers.

Special attention was given to frequently expressed customer wishes: to simplify basic operation and enable adaptation of the system for all NRMs (i.e. also for NRM Wastewater). On the one hand, the current TSB now allows the administrator to define additional free attribute fields for any object classes to facilitate capture of customer-specific object data. On the other hand, the representation and function of the editors has been revised extensively, resulting in a significant optimisation when working with child

objects, and achieving additional functionality.

Combined with the standard options of the Smallworld Core for tailored application design, the NRMs provide users with a straightforward, functional method for working with the system.

The most important innovations in the release and the TSB are outlined below. They will convince you – upgrading is worthwhile.



Example for a tailored application design

Smallworld NRM

NRM Electricity, Gas, Water and Wastewater Release NRM 4.2 TSB 16

Additional fields

In the past, users very often requested the capability to create their own customer-specific attributes for any object classes. Normally, in the Smallworld GIS, however, this requires the service provider to modify the data model.

The TSB 16 now provides a versatile means of using so-called soft joins to provide these free attribute fields. An additional table with „Additional fields“ has been integrated in each NRM database. These include the configuration of additional fields for all object classes, which can be created by the administrator per XML or directly in the GIS. For definition, the administrator can choose between integer, float, string and data fields and name these freely. These fields are then available to the user in the object editor in an analogous way to the object-specific standard attribute fields, and can be used accordingly for queries.

Editor functions

The user guidance of the editor has been optimised comprehensively. This makes for considerably easier and straightforward daily work with the objects.

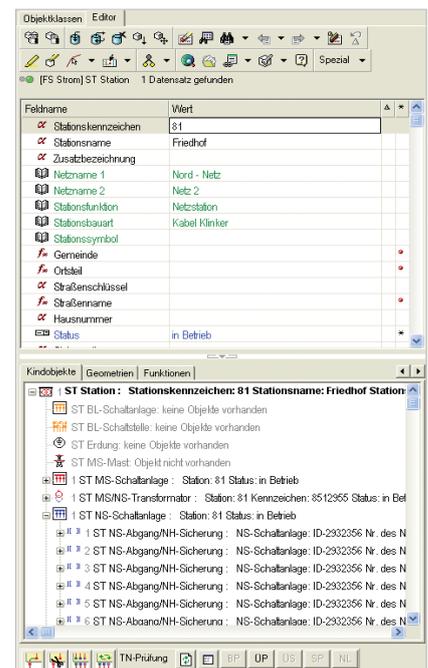
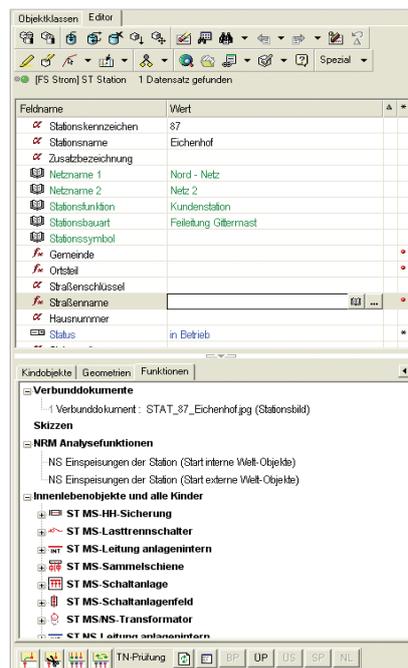
In addition to the familiar "Fetch" function for the first database object of the current object class, fetching of all objects in the current object class is possible (restrictable as required by specifying attribute values) by using the new "Search records and browse with next or previous" function. Two additional "Browse" functions are available for scrolling the results directly in the editor.

The icon bar and editors can be configured according to object classes to hide unnecessary icons as required. Each object class has an adapted basic configuration of this kind, which can be customised by the administrator. Special highlights are the three new tabs,

which each editor will have in the future: „Child objects“, „Geometries“ and „Functions“. These enable fast, direct access to the child object or geometries of the selected object. Particularly for objects with internals, the „Child objects“ tab provides a prompt, clear structural overview of all associated objects. The context menu of the right mouse button allows these objects to be displayed, processed, deleted or re-assigned directly from within the editor. In this context, it is possible to configure whether a graphical distinction is to be made for all available, or only for actually present child objects.

The "Geometries" tab is used to display all geometries for the object, whereby different colours are used to distinguish between geometries of the object and other topologically linked objects. This representation order is particularly helpful when checking the topologies. This also offers a variety of functions (for example „Highlight“ or „Go to“) via the context menu.

The "Functions" tab also includes object-specific analysis functions (NRM analyses), but also direct access to related documents and schematics that complement the new editor extensions.



The new tabs of the object editor

Optimised catalogue usage

Frequently in asset documentation, catalogues become extremely cluttered due to historical entries (for example, material lists) that are no longer used. To improve this situation, the new release for each catalogue implements a new attribute „Active?“ that enables the user to individually set the catalogue values to "active" where appropriate. Only in this status are they then displayed in the catalogue selection for data entry or modification. In this way, the selection lists are shortened to an expedient length without changing the existing objects.

Smallworld NRM

NRM Electricity, Gas and Water Release NRM 4.2 TSB 16

Comparing and configuring the status

The status lists have been harmonised to further enhance the consistent functionality of NRM for energy utility companies. This means that the same states are available in NRM for electricity, gas and water. In NRM Electricity, the states „removed“, „under construction“, „not yet in use“ and „unknown“ have been added; while the state „reserve“ has been added to NRM Gas and Water.

A further essential enhancement is the option for the administrator to rename or even supplement these three NRM individually and change the associated geometry mapping. In this way, it is possible to implement the customised status models addressed in work groups easily and individually.

Colouring of the supply network and determining the infeeding zones

Colouring of the product objects according to standard criteria is an extremely important function for fast visualisation of thematic data. Based on the GE product "Thematic Mapping", the new release integrates a push-button colouring function for the most important aspects of day-to-day work.

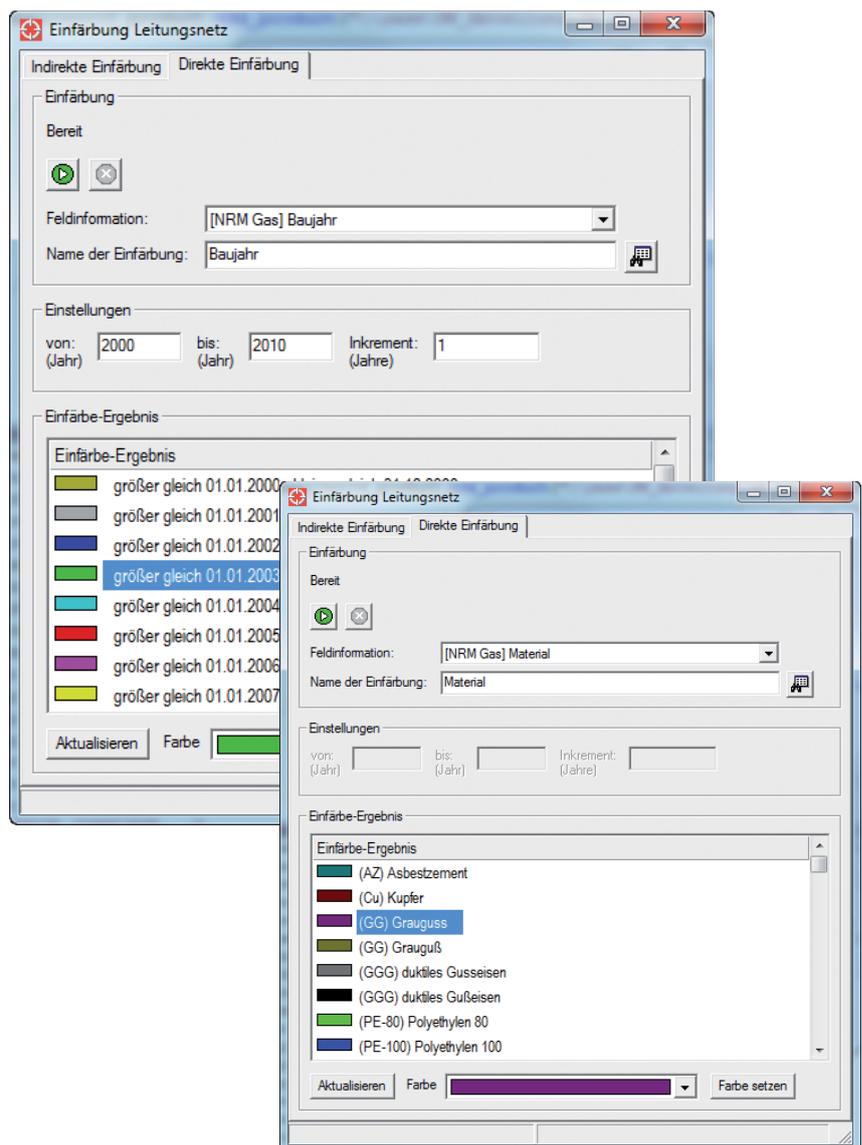
For the gas and water segments, dynamic colouring is carried out according to the age, diameter and material of the mains, whereby the colours can be defined freely. Especially for the electricity segment, the dynamic colouring functions as well as the colouring of the infeeding zones can be carried out. The latter colouring is determined using a separate, configurable function based on the network analysis. The association of the relevant infeeding zone is documented at the object and used on the basis of its colouring.

Object class "Network Area"

Also in the context of concession management, the representation of organisational structures using area models is gaining in importance. The new „Network Area“ object class permits the representation of structures of this kind as area objects. The flexible configuration of the object class enables individual configuration of objects, for example for documentation of maintenance districts, master areas or concession regions.

Multi Utility Service

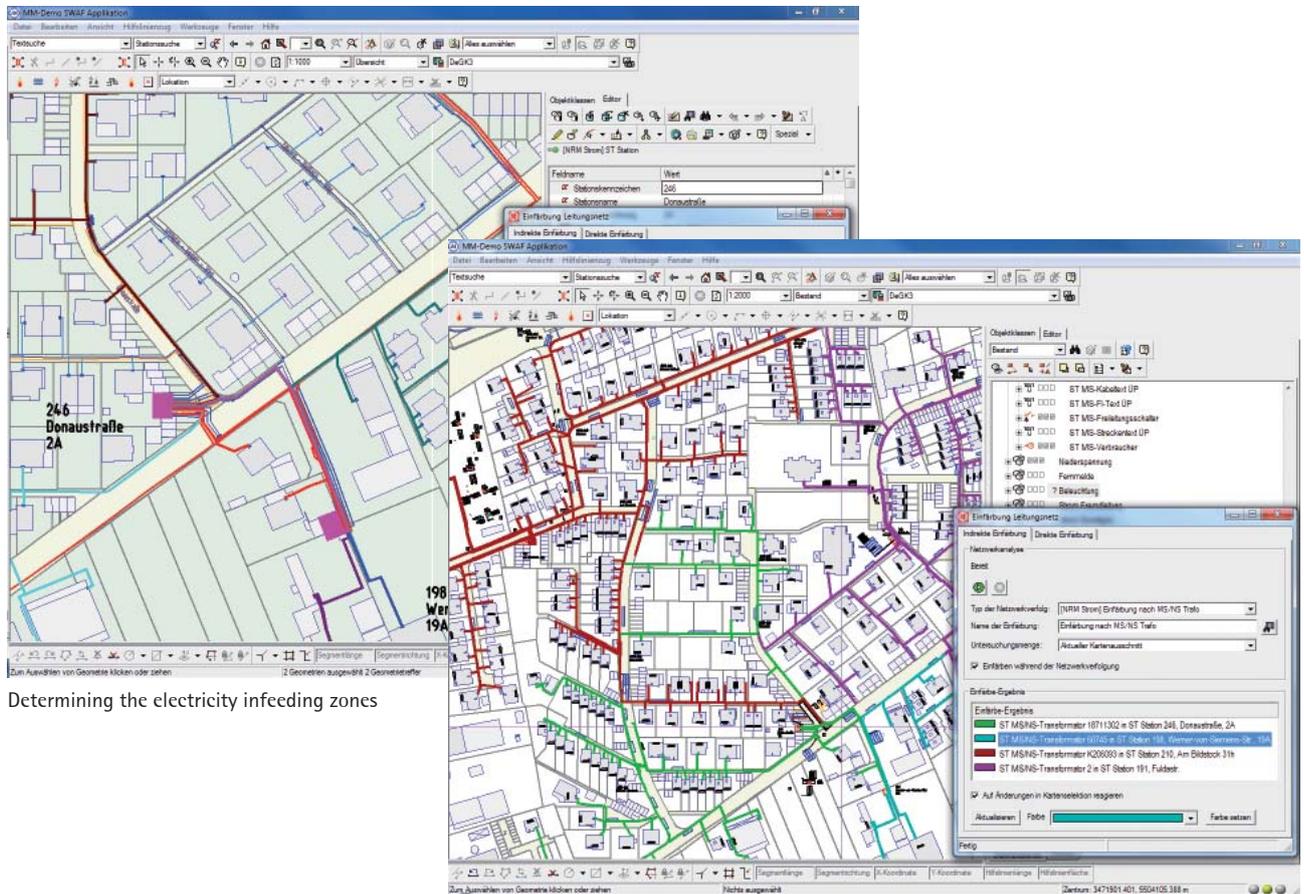
Coupling GIS with commercial systems produces the demand to map similar structures in SAP to allow the assignment of both elements. The service connection in particular dictated the need to implement a higher level object, the "Multi Utility Service", in the GIS in order to assign the service connections to the individual utilities. This has now been realised with TSB16 and the multi utility service can be installed in any database.



Configuration of the gas colouring according to material and age

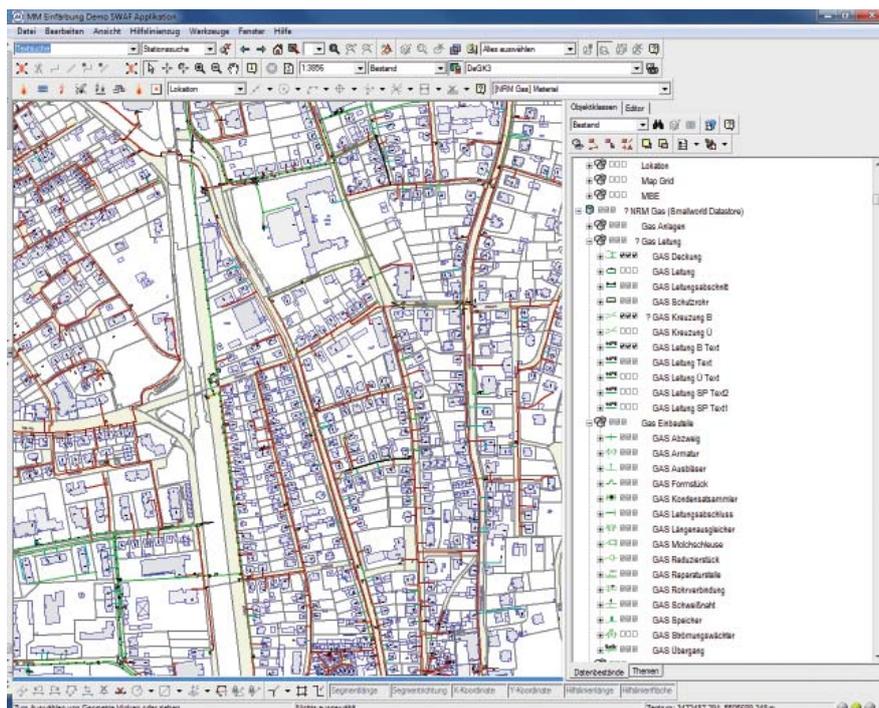
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NRM Electricity, Gas and Water Release NRM 4.2 TSB 16



Determining the electricity infeeding zones

Result of colouring of the infeeding zones



Result of colouring of the gas network according to the material

Smallworld NRM

NRM Electricity Release NRM 4.2 TSB 16

Decentralised infeed

The new release has the capability to document the phase and peak power of the infeed for the existing "MV Infeeder" and "LV Infeeder" objects, thereby providing enhanced support for the documentation requirements of the power generation field in the form of decentralised infeeds.

Furthermore, the NRM analysis functions have been extended to determine and visualise infeeds on the medium-voltage and low-voltage levels at the push of a button, starting at the primary substation or the substation. The new editor functions enable these analyses to be started either per mouse context menu, or quickly and easily directly in the object editor.

Stations' internals

Since the stipulations of regulation authorities for network calculations are also placing an increasing focus on the low-voltage range, the documentation of stations' internals is becoming more and more significant. To simplify production of the internals independent of the existing prototype function, a new function has been implemented for automatic creation of internals based on existing attributes. When the function started, the associated switch gears are used to determine how many switch bays are contained in order

to dimension the display correctly. The procedure for the busbars and other objects is analogous.

Full system internals are the result, which then only need to be connected to the external world. The new function for temporary display of the end nodes in a geographic map makes this an easy task.

Style adaptations VDE-AR 4201

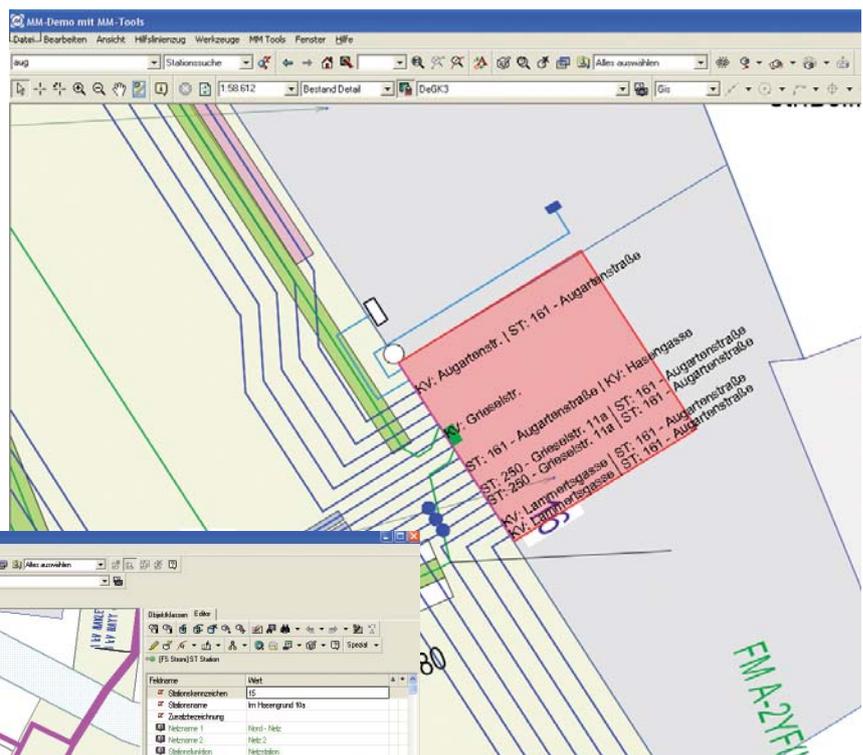
The VDE application rules 4201 also define how several objects in the GIS are to be displayed in the network documentation (for example, the distinction between MV and LV Infeeder types). These new specifications have been adapted in the

new style system for the product suite for electricity and can be loaded as an option when upgrading to the new release.

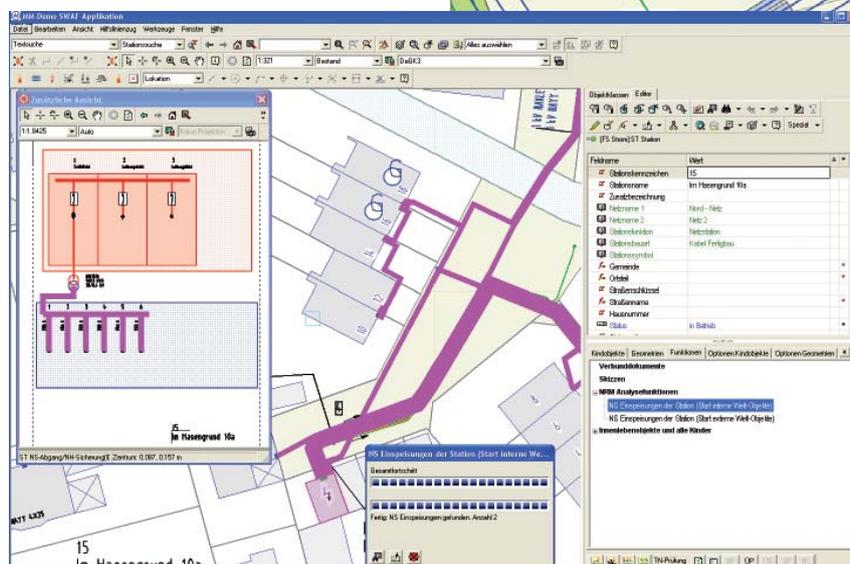
Further innovation

In addition to those described, further changes have been implemented, for example:

- New attributes for electricity protective duct
- Geometry extension for the shaft
- New „Comment“ field for all catalogues
- Adaptation of the network statistics and outage report for catalogue extensions and status configuration



Temporary display of the end nodes



Analysis function to determine the decentralised infeeder

Smallworld NRM

NRM Gas and Water Release NRM 4.2 TSB 16

Prototypes for stations' internals

The NRMs for gas and water can be used to capture the stations' internals, which is becoming an increasingly important issue for network calculation among users. To facilitate data capture, the function for utilising prototypes has been implemented analogous to NRM Electricity. This enables the user to store particular stations' internals as prototypes and use these to create complete internals for further systems.

Style adaptations GW 120 with style for abandoned mains

The new set specifications of the worksheet for technical regulations GW 120 include several changes for the properties of objects in the GIS (for example, the new representation of abandoned main sections or of gas and water systems. These new specifications have been adapted in the new style system of the applications suites for the various gas, water and corrosion protection objects and can be loaded as an option when upgrading to the new release.

New "Pipe Type" catalogue

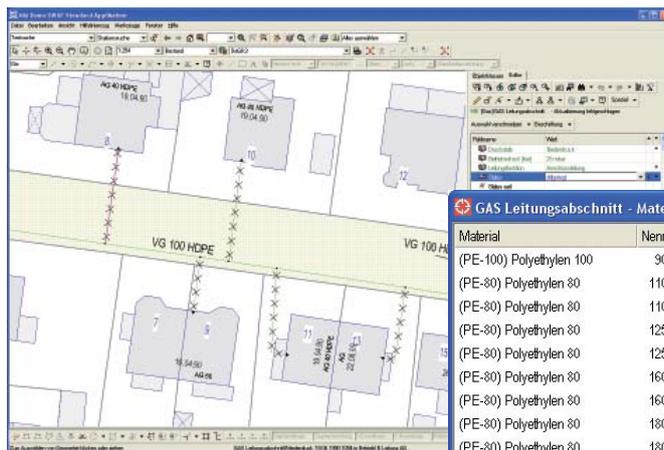
Similarly, against the background of network calculation, there is an increasing demand from users to simulate a distinction between the pipe inner and outer diameters in addition to the previously used catalogues to describe the technical details of the mains in terms of material, nominal diameter and pressure class. This is very important information for several types of materials, particularly for the network calculation.

To take account of this requirement, a new „Pipe Type“ catalogue has been introduced. It represents the possible combinations of materials and pressure classes with specified inner and outer diameters. When upgrading, certain values in the system are used to set up the new catalogue and supplement the standard combinations. Since there are no real standards for these combinations, they are based on the practical data and experience of Fischer-Uhrig (manufacturer of the network calculation software STANET) and can be extended or modified according to customer requirements.

Other innovations

In addition to those described, further changes have been implemented, for example:

- Extended configuration options for text distance to building for service connection labelling
- New attributes „Manufacturer model“ and „Manufacturer“ on the gas and water main section
- New object class „CP Joint“ for documenting connections between CP main sections
- Extension of geometries for the "GAS Manhole", "CP Measuring Pillar" and "CP Test Point"



Representation of abandoned mains

Material	Nennweite DN	Nenndruck	Außendurchm...	Wandstärke	Realer Innend...	Beschriftungstext
(PE-100) Polyethylen 100	90.000 mm	PN 4	90.000 mm	5.400 mm	79.200 mm	90
(PE-80) Polyethylen 80	110.000 mm	PN 1	110.000 mm	6.600 mm	96.800 mm	110
(PE-80) Polyethylen 80	110.000 mm	PN 4	110.000 mm	10.000 mm	90.000 mm	110
(PE-80) Polyethylen 80	125.000 mm	PN 1	125.000 mm	7.400 mm	110.200 mm	125
(PE-80) Polyethylen 80	125.000 mm	PN 4	125.000 mm	11.400 mm	102.200 mm	125
(PE-80) Polyethylen 80	160.000 mm	PN 1	160.000 mm	9.500 mm	141.000 mm	160
(PE-80) Polyethylen 80	160.000 mm	PN 4	160.000 mm	14.600 mm	130.800 mm	160
(PE-80) Polyethylen 80	180.000 mm	PN 1	180.000 mm	10.700 mm	158.600 mm	180
(PE-80) Polyethylen 80	180.000 mm	PN 4	180.000 mm	16.400 mm	147.200 mm	180
(PE-80) Polyethylen 80	225.000 mm	PN 1	225.000 mm	13.400 mm	198.200 mm	225
(PE-80) Polyethylen 80	225.000 mm	PN 4	225.000 mm	20.500 mm	184.000 mm	225
(PE-80) Polyethylen 80	32.000 mm	PN 4	32.000 mm	2.900 mm	26.200 mm	32
(PE-80) Polyethylen 80	40.000 mm	PN 4	40.000 mm	3.700 mm	32.600 mm	40
(PE-80) Polyethylen 80	50.000 mm	PN 4	50.000 mm	4.600 mm	40.800 mm	50
(PE-80) Polyethylen 80	63.000 mm	PN 4	63.000 mm	5.800 mm	51.400 mm	63
(PE-80) Polyethylen 80	75.000 mm	PN 4	75.000 mm	6.800 mm	61.400 mm	75
(PE-80) Polyethylen 80	90.000 mm	PN 1	90.000 mm	5.400 mm	79.200 mm	90
(PE-80) Polyethylen 80	90.000 mm	PN 4	90.000 mm	8.200 mm	73.600 mm	90

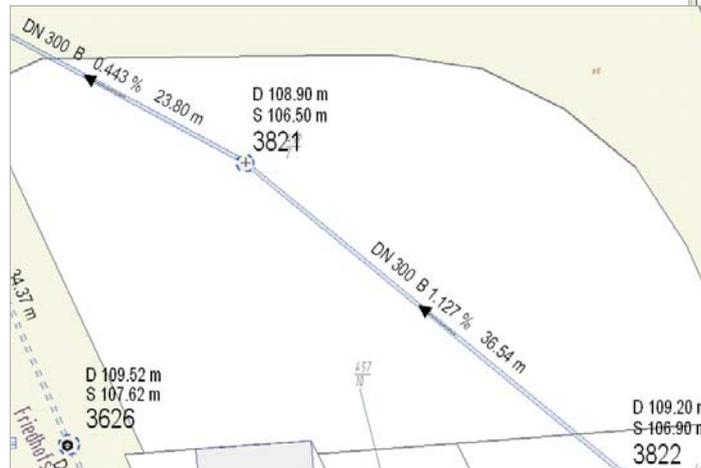
Combined catalogue „Pipe Type“

Smallworld NRM

NRM Wastewater Release NRM 4.2

New drainage process

A new drainage process of the type "Water" has been implemented especially for separate representation of stream pipes in the local drainage system. Since a distinction in the display of reaches of this drainage process is also necessary in this context, the associated geometry mapping and style system has also been adapted.



Schematic for the new drainage procedure

Feldname	Wert
Schachtnummer	3821
Alte Bezeichnung	
Rechtswert	3473050006.000 mmm
Hochwert	5504539379.000 mmm
Baustatus	in Betrieb
Lagesstatus	
Gemeindenname	
Ortsname	
Straßenname	Adelungstraße
Straßenschlüssel	815049
Örtliche Lage	
Sonst. Lagebez.	
Erhw. Verfahren	Gewässer
Erhwässerungssystem	
Schachtart	
Trennender Schacht?	nein
Deckelhöhe [+NN]	108.30 m
Höhenstatus Deckel	
Sohlhöhe [+NN]	106.50 m
Höhenstatus Sohle	
Schachtförm	
TN-Prüfung	BP OK; OP nicht erfasst

Documentation of drop structures at manholes

The user can now use the "WW Inlet" object class on the basis of the connection type to document whether the connection of the reach at the manhole is via an internal or external drop structure. In addition, the "Connection height drop structure [+NN]" at which the drop structure is connected to the lower point of the manhole is captured. The drop structure is also simulated in the layout plan, and accordingly in the longitudinal section display.

DTM support

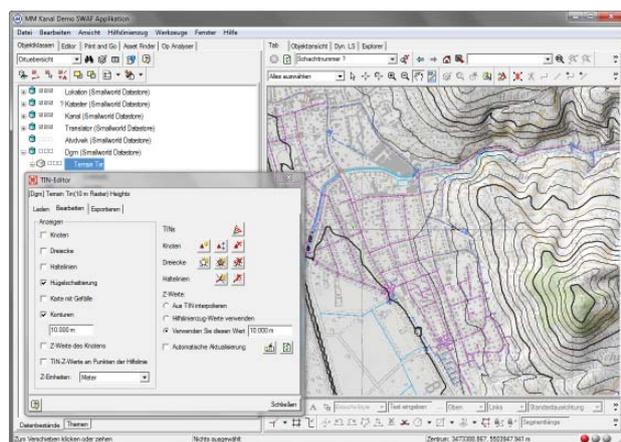
Particularly in the field of wastewater, ground elevations are an essential aspect for the documentation the drainage network. These are often determined by local surveys and wastewater system inspections and used for data capture.

A further approach is the use of a digital terrain model (DTM) that can also be used in Smallworld. Smallworld Core already includes a DTM module (Grids and TINs), which can be installed by a system administrator using one of the installation packages provided by Mettenmeier. Data

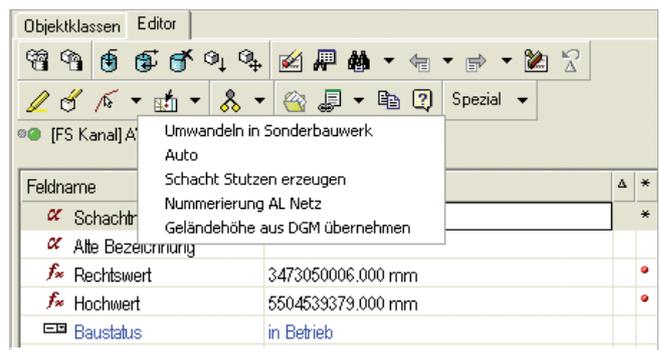
for the utilisation of such a DTM can, for example, be obtained by the State of NRW in a grid of up to 1 meter and an elevation accuracy of +/- 2 decimetres.

In NRM Wastewater, a special editor function uses these evaluation to transfer the DTM height automatically to the product objects (e.g. cover height of a manhole) when the object is inserted, or at a later stage.

These functions are implemented analogously for the connection network.



NRM Wastewater with DTM data



Menu for incorporating DTM data

Smallworld NRM

NRM Wastewater Release NRM 4.2

Refined generation of longitudinal sections

The function for utilising the DTM described before is also used for the longitudinal section, since DTM data can also be used to create longitudinal sections. Furthermore, the following contents for creating longitudinal sections have been improved:

- Map-optimised definitions for longitudinal section profiles are provided in all common DIN-A sheet formats
- The editor has been expanded to enable entry of the desired length and height scale
- The new checkbox „map-optimised“ ensures that the system automatically determines the optimal profile definition
- It is also possible to calculate a projection to produce multiple longitudinal sections
- The representation of crossing connection lines is possible (analogous to crossing reaches)
- For display of the pipe connections at reaches, the new attribute "Measured connection height" is primarily evaluated compared to the "Height" attribute
- A new button can be used to display the longitudinal section directly in the main screen. This function effects a zoom to the search result of the 1st longitudinal section definition

Wastewater status report

The convenient reach report introduced with Version 4.1.1 can now also be used with Release 4.2 as a status report for manholes and special structures and processed directly in Microsoft Excel. In addition to important master data, all details of TV examinations and their results are output in an easy-to-read representation.

Status reports can now also be produced for the "Connection Pipe" and "Inspection Chamber" objects in the connection network.

The optional additional module „Examination graphic+“ offers the additional benefit of the integrated image display in the report and of the integrated jump to the desired position in the video file in the Excel report as well as directly in the Smallworld GIS.

Extension for rehabilitation planning

The representation options for rehabilitation planning have been further extended and now allow visualisation of sectional rehabilitations as a line profile. Furthermore, this release can also be used to create rehabilitation planning for the connection network.

Extended numbering concept

Release 4.2 now also supports the ETRS coordinate system for manhole numbering. This was done by expanding the associated options. To prevent possible redundancies in the data, reach numbers can now also be checked for uniqueness within the current database alternative using the option setting and reaches can also be numbered automatically.

Further development of the connection network

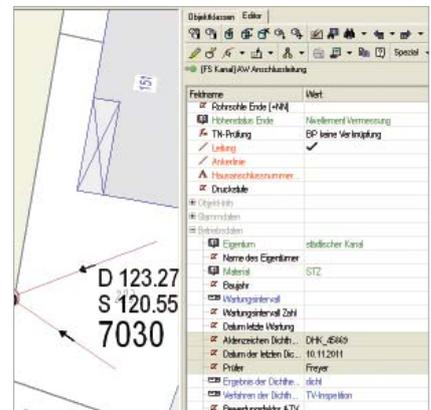
The documentation of the connection network is playing an increasingly important role for wastewater network operators. For this reason, the existing options offered by the product suite have been extended further.

This includes the integration of the extended numbering concept for the connection network, which is also reflected in the options. Automatic numbering can be applied to manholes, reaches or regions.

The entire pipe connection functionality is now available for the connection network. Furthermore, the labels for the connection network have been expanded.

To facilitate capture and update of connections, the new function is used to create the associated node objects (e.g. pipe connections) automatically.

Given the significance of the currently controversial topic of leakage tests for wastewater connection, the current release meets the requirements for documenting these data, thus allowing the data to be recorded promptly when the stipulations come into force.



Documentation of leak tests for connections

Function and model extensions for convenient work

Additional function extensions have been incorporated to provide further support and achieve improved efficiency when working with the system. These include

- Display of manholes and special structures in the context of analysis results for network tracking along the analysed pipe section
- Extension of location information on the objects „WW Deaerator“ and „WW Shutoff Device“
- Including the attribute "SAP-ID" for important object classes
- Support for the SRP Copy Editor familiar from other NRM for fast transfer of detail map and overview map geometries

Optimising the object editors

TSB 16 also implements important extensions for NRM Wastewater to include editor handling and utilisation of additional attributes. This function considerably enhances GIS operation. The changes are described in the „NRM for Electricity, Gas, Water and Wastewater, Release NRM 4.2 TSB 16“.

Smallworld NRM

NRM Wastewater Additional Modules and Interfaces

In addition to the features included in the release, Mettenmeier offers numerous additional modules and interfaces for drainage applications.

Additional modules for the NRM Wastewater

Module for pressure drainage systems

The special representation of pressure drainage systems, particularly in large, scarcely populated areas (but also in large cities) in the new German states were already implemented in the Smallworld GIS version 4.1 in the module of the same name. This functional scope has been extended in Version 4.2 to provide better simulation of the special representation of combined material and dimension changes both in the main pipe and the connection network, for example.

Wastewater Operation Analyser

The new Operation Analyser for wastewater in Smallworld GIS 4.2 offers integrated application analysis functions (such as search for indirect discharges) on the basis of the tried-and-tested Operation Analyser. This platform is used to develop two important modules for management of drainage networks - the status evaluation and rehabilitation planning modules.

Status evaluation module

The module „Status evaluation according to DWA-M 149-3“ allows wastewater operators to evaluate the structural condition of the networks safely and efficiently directly in Smallworld GIS. After checking the input data, the individual faults and objects (and their status evaluation) are classified according to specifications. The results are stored in the objects and visualised according to topic.

Rehabilitation planning module

The renovation planning module supports the entire planning process for rehabilitation measures in the wastewater network.

Examination graphic+

Direct linking of image and video sequences to the damage in status reports for reaches or manholes greatly simplifies work with examination data for the user. The current Version 1.1 for the Smallworld GIS now supports direct access to videos from within Smallworld GIS.

Interfaces for NRM Wastewater

DWA-M-150 interface

For Smallworld GIS 4.2, the current Version 3.0 of DWA-M-150 interface is available to support the stipulations of the DWA from April 2010 for format definition. Furthermore, functional extensions for data import means that the DWA-M-150 interface optimally supports standardised data exchange for constructional examinations of wastewater networks.

ISYBAU interface

The ISYBAU interface was expanded to include an option for selecting the examination status („only active“, „only inactive“, „all“), and the wastewater system can now be restricted.

Hystem-Extran interface

The interface was adapted to the requirements of the current Hystem-Extran 6.7.

Support for Smallworld technologies

The new version of NRM for supply and disposal networks also enables to use a variety of products from the Smallworld product range (for example, Smallworld GSS and SIAS Client, Smallworld Thematic Mapping or Smallworld GSA) to integrate your network data more efficiently into corporate processes.



Smallworld GIS Fachschalen

Additional Products and Upgrade to New Release

Support for further software solutions

In addition to products from GE Smallworld, Mettenmeier offers numerous in-house products and solutions for a wide variety of applications to support your processes in network documentation and network management, for example:

Web-based geodata and information service via intranet or the internet

- Mettenmeier MGC – the online/offline geodata client
- Online map information service
- Mettenmeier MapApp for iOS

Analysis

- Operation Analyser (network calculation direct in the GIS)
- Join Designer (simple attribute links)
- Asset Finder (enhanced queries)

Network planning

- Planning product VRDB (variant database)

Integration in your corporate IT

- Smallworld EIS (Enterprise Integration Services)
- Interfaces to network calculation programs (Stanet, PSS/Sincal, NEPLAN, PowerFactory)

Operative and strategic asset management

- OPTIMUS (Operational Asset Management) with Smallworld integration
- Samco Tools (Strategic Asset Management)

Mobility

- Tensing Mobile GIS
- Mettenmeier MGC – the online/offline geodata client

Upgrade to 4.2 TSB 16

Profit from the numerous extensions, new functions and enhanced operating concept for the new Version 4.2 TSB 16. No matter which release you are currently using, upgrading is worthwhile. Take the opportunity today to plan your system upgrade with Mettenmeier GmbH, the manufacturer of Smallworld NRMs for electricity, gas, water and wastewater.

Your benefits with a Mettenmeier upgrade

Upgrades are part of Mettenmeier's day-to-day business. Our NRM product suite brings you the benefits of our full competence and comprehensive experience:

- Developer of NRMs: the majority of our product suite extensions for 4.2 come from Mettenmeier. You receive software all in one hand to support the current demands in your company and also better sustain your regulation management
- GE Smallworld Partner: our year-long partnership in close cooperation with GE ensures early insights into new GIS versions but also a common proven procedure for integration to ensure that the current versions of NRM are tested intensively and matched to the core system.
- On-schedule delivery: tested upgrade routines and experienced employees with a trained eye for your data situation and your IT landscape ensure an efficient upgrade project.
- All in one hand: upgrades at Mettenmeier are subjected to practical trials in our in-house GIS data capture department. Proven test procedures and quality-assurance measures minimise production stops in parallel operation. Upgrade-specific training prepares you explicitly for the new functions in the version.
- Fair corporate policy: our quotation focus especially on cost efficiency and high performance.

Plan your upgrade to Smallworld 4.2 TSB 16 with Mettenmeier and consult us today – it will be worthwhile!

Mettenmeier Utility Solutions

Mettenmeier is a software consultant, service and solution provider, with corporate headquarters in Paderborn, Germany, supporting clients in the gas, water and electric industries. We are dedicated to enabling the owners and operators of utility assets to plan and manage their networks more successfully.



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