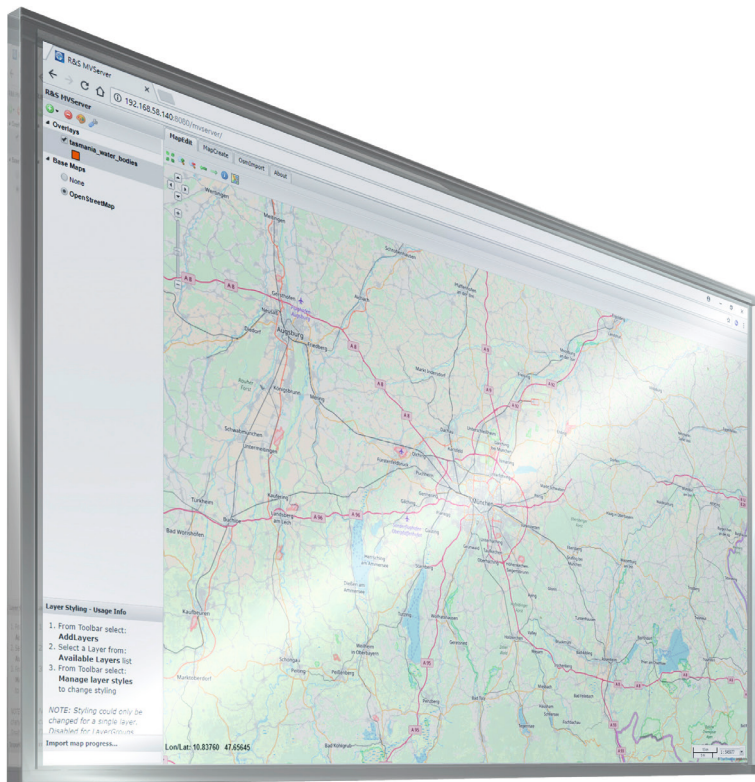


R&S®MVServer

Centralized management of geographic map material



At a glance

Systems that process and display georeferenced data require centralized storage, management and provision of map data. R&S®MVServer as a central map server makes this possible and also allows map data to be imported and georeferenced.

R&S®MVServer as a central map server offers the advantage that all map data is maintained in only one place and is available to all users (clients) of a georeferencing system. Thanks to standardized interfaces, this server is independent of the software used for displaying maps. Map data in the most widely used GIS formats can be imported and utilized in order to use a customer's previously existing map data. In addition, map data with good resolution as a starting point is available for import, in order to go into operation with the system without delay.

Key facts

- Central server for all map data of a system requiring GEO data
- Simple, web-based user interface
- OpenStreetMap (OSM) map data for the entire world included
- Customized map design

Benefits and key features

Optimized system configuration thanks to consolidation of map data

▷ [page 3](#)

Use of a wide range of map data

- Import of ESRI and MapInfo map data
- Import and georeferencing of raster maps

▷ [page 3](#)

Customized design of vector maps

▷ [page 3](#)

Provision of OpenStreetMap map data

- Up-to-date OSM map data included
- Quick rendering of OSM data during runtime

▷ [page 4](#)

Easy integration into systems requiring GEO data

- Interfaces in line with Open Geospatial Consortium (OGC) standards

▷ [page 4](#)

Optimized system configuration thanks to consolidation of map data

R&S®MVServer software can be used for the import and centralized management, maintenance and provision of map data in systems that use GEO data. In such Rohde&Schwarz systems, the map data on the user workstations can be displayed using the R&S®MapView software, for example.

Due to the centralized provision of map data, this data is always up to date for each user of such a system, so it is not necessary to maintain such data locally.

There are two basic R&S®MVServer types:

- As a pure software product
- As software combined with a hardware server

The pure R&S®MVServer software version can be used by customers who have their own server PC and are looking for software for centralized map management. The software is automatically installed on the server via a script and can then be used without any further configuration.

In the version combining the software with a server PC, this PC is integrated into the existing overall system. This version has the advantage that the server PC from Rohde&Schwarz is specially designed for the requirements of a map server. The map server is delivered with R&S®MVServer already installed. After adapting the network settings as required, the map server is immediately ready for use without any additional configuration effort.

Use of a wide range of map data

Import of map data

R&S®MVServer allows the import of map data from the industry-leading suppliers of geographic information systems (GIS). If a customer already has digital map data at its disposal, it can be imported via R&S®MVServer and used in the system. R&S®MVServer features an interface for importing map data, e.g. in ESRI format and in MapInfo format.

The map data is imported via an easy-to-use web interface (see Figure 1) that can be started with a browser at one of the system's workstations.

Import and georeferencing of raster maps

If specific, digital maps are unavailable, existing paper-based maps can be scanned and the images imported and georeferenced. These raster images are centrally stored by R&S®MVServer as tiles in accordance with WMS convention¹⁾. As shown in Figure 2, importing maps and georeferencing is very easy and intuitive via the server's web interface.

Customized design of vector maps

The R&S®MVServer software allows users to format and adapt the maps as required. Streets, developed areas and other map elements can be individually changed (color, size, representation) using the same web interface as for importing map data.

When importing map data, initially standard style sheets are used for each map layer. Later on, the style sheets for each map layer can be separately modified by users and adapted according to their own wishes. These are known as "styled layer descriptors" and can be applied to all newly imported map data to obtain a uniform look and feel in the entire system.

¹⁾ Web map service (WMS) is an interface for calling up extracts of geographic maps.

Figure 1: Web interface of R&S®MVServer.

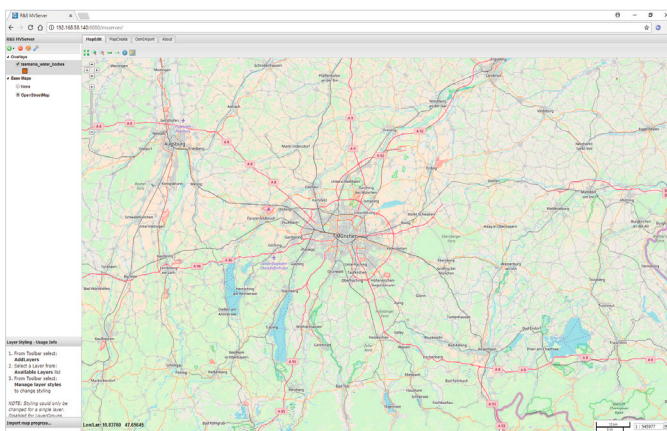
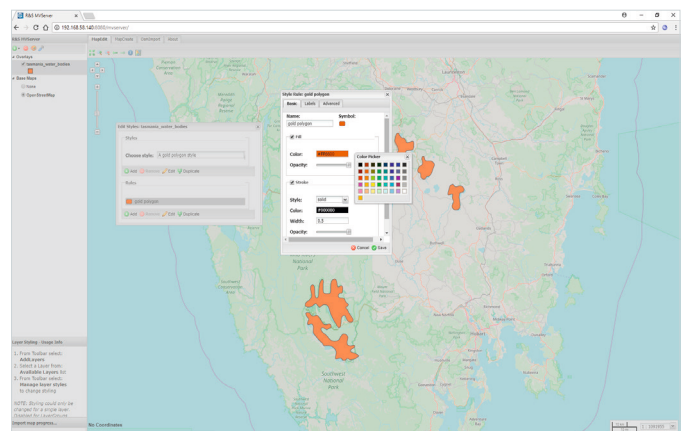


Figure 2: Editing a layer of imported map data.



Provision of OpenStreetMap map data

R&S®MVServer is delivered with the current OpenStreetMap vector map data of the entire world. The user can import any geographic extract of this data in to R&S®MVServer, which means that the user's system is equipped right from the start with an excellent map. The relevant extracts are either completely rendered and stored beforehand, or are rendered and output by R&S®MVServer when they are requested by a client software such as R&S®MapView.

Later on, users can easily download the current OpenStreetMap vector data from the Internet and copy it to the server. In this way, the maps can be updated once a year, for example.

Easy integration into systems requiring GEO data

R&S®MVServer provides map data that can be used for example by monitoring system operators within their applications. This enables intercept operators of a COMINT system to display the currently intercepted radiocommunications with the locations of the radio transmitters on a map background. For this purpose, they use the R&S®MapView software in a Rohde & Schwarz COMINT system at their workstations. The figure shows the embedding of the map server in the system environment.

Standardized interfaces allow customer-specific applications to be used for displaying maps on user workstations if R&S®MapView is not used for this purpose.

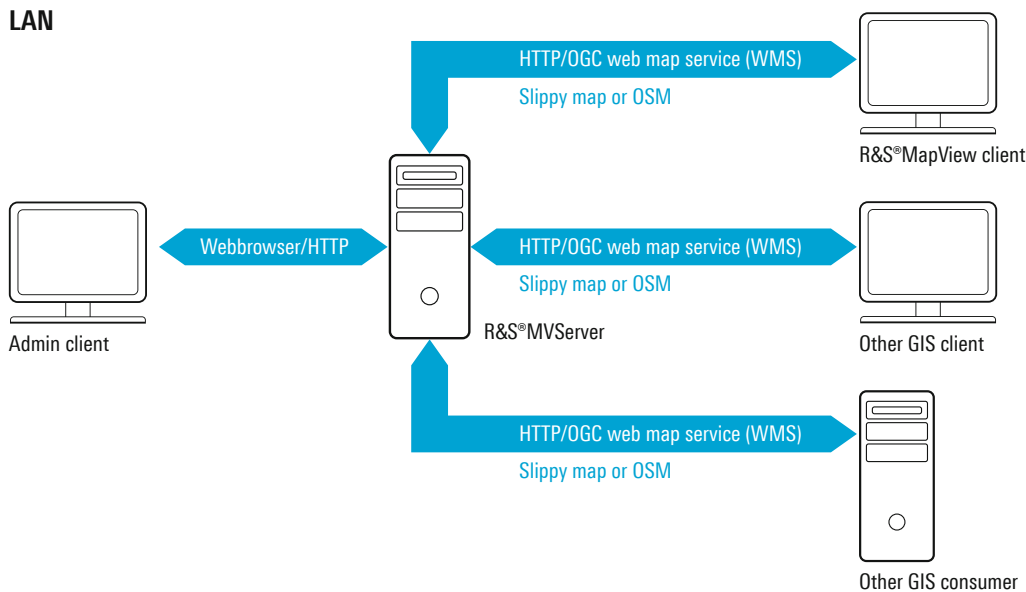
OpenStreetMap (OSM)

OpenStreetMap (OSM) is a user-editable world map that is available at the following Internet address:
<http://www.openstreetmap.org/>

OSM is a wiki project in which users can participate by uploading and editing geographical information such as GPS tracking data or the course of a road or river. This world map is growing daily.

OpenStreetMap data can be used freely under the terms of the Creative Commons Attribution-ShareAlike 2.0 license.

Interfaces to R&S®MVServer



Slippy map is a web interface for accessing rendered OpenStreetMap data.

Specifications in brief

R&S®MVServer supports the following map formats

- ESRI Shape
- ESRI Grid
- ESRI Mxd (GeoSet)
- ESRI ArcSDE
- MapInfo (shape&grid)
- PBF (OSM)
- GeoTIFF
- WorldImage: JPEG, PNG, TIFF with world file
- MapInfo Tab

Hardware requirements

- Operating system: Debian 8
- Processor: multicore
- RAM: 64 Gbyte
- Hard disk: min. 1 Tbyte SSD recommended

Ordering information

Designation	Type	Order No.
Software for up to 10 clients <ul style="list-style-type: none">▪ Centralized storage and management of map data▪ Import and georeferencing of raster maps▪ Processing of ESRI and MapInfo map data	R&S®MVServer	3029.8367.02
Extension of R&S®MVServer software for access by more than 10 clients	R&S®MVServer	3029.8367.03
Software including R&S®RMS-FX-S1 server PC for up to 10 clients <ul style="list-style-type: none">▪ Centralized storage and management of map data▪ Import and georeferencing of raster maps▪ Processing of ESRI and MapInfo map data	R&S®MVServer	3029.8367.04

Service that adds value

- ▮ Worldwide
- ▮ Local and personalized
- ▮ Customized and flexible
- ▮ Uncompromising quality
- ▮ Long-term dependability

Rohde & Schwarz

The Rohde & Schwarz electronics group offers innovative solutions in the following business fields: test and measurement, broadcast and media, secure communications, cybersecurity, monitoring and network testing. Founded more than 80 years ago, the independent company which is headquartered in Munich, Germany, has an extensive sales and service network with locations in more than 70 countries.

www.rohde-schwarz.com

Sustainable product design

- ▮ Environmental compatibility and eco-footprint
- ▮ Energy efficiency and low emissions
- ▮ Longevity and optimized total cost of ownership

Certified Quality Management
ISO 9001

Certified Environmental Management
ISO 14001

Rohde & Schwarz training

www.training.rohde-schwarz.com

Regional contact

- ▮ Europe, Africa, Middle East | +49 89 4129 12345
customersupport@rohde-schwarz.com
- ▮ North America | 1 888 TEST RSA (1 888 837 87 72)
customer.support@rsa.rohde-schwarz.com
- ▮ Latin America | +1 410 910 79 88
customersupport.la@rohde-schwarz.com
- ▮ Asia Pacific | +65 65 13 04 88
customersupport.asia@rohde-schwarz.com
- ▮ China | +86 800 810 82 28 | +86 400 650 58 96
customersupport.china@rohde-schwarz.com

R&S® is a registered trademark of Rohde & Schwarz GmbH & Co. KG

Trade names are trademarks of the owners

PD 5215.4800.12 | Version 02.00 | July 2018 (ja)

R&S®MVServer

Data without tolerance limits is not binding | Subject to change

© 2017 - 2018 Rohde & Schwarz GmbH & Co. KG | 81671 Munich, Germany



5215480012