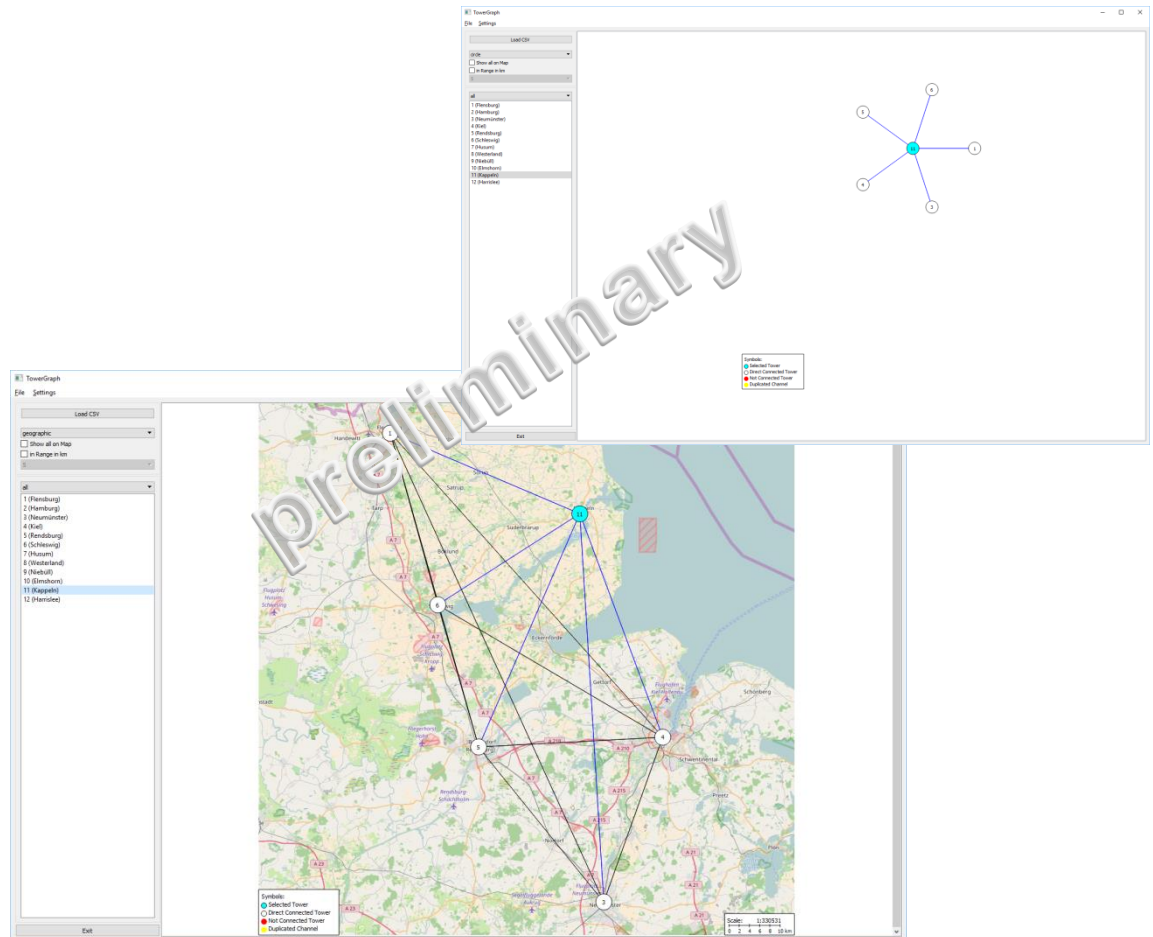


Multi Analyzer Software

TETRA and DMR network analysis



Just a little bit more than analyzing...

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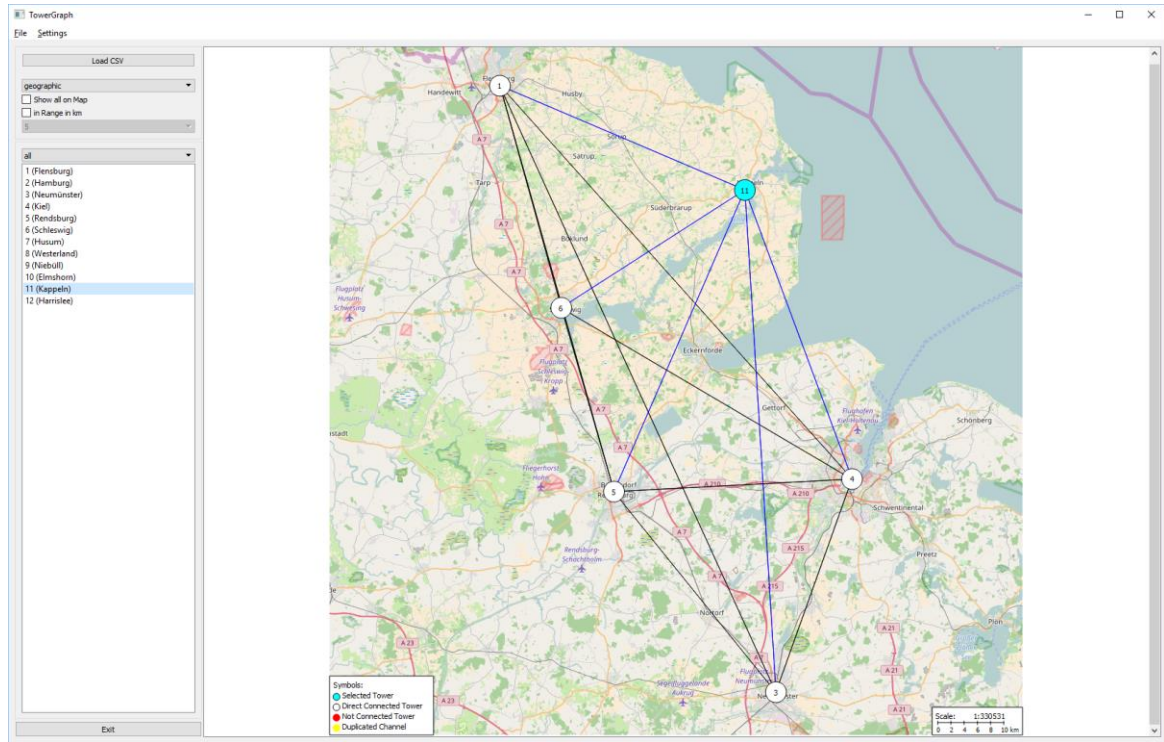


figure 3: The regarded basis station (blue circle) and their direct connections (blue lines) to the connected neighbour stations (white circle) can be seen here. The connections of the neighbour stations among themselves are illustrated as black lines.

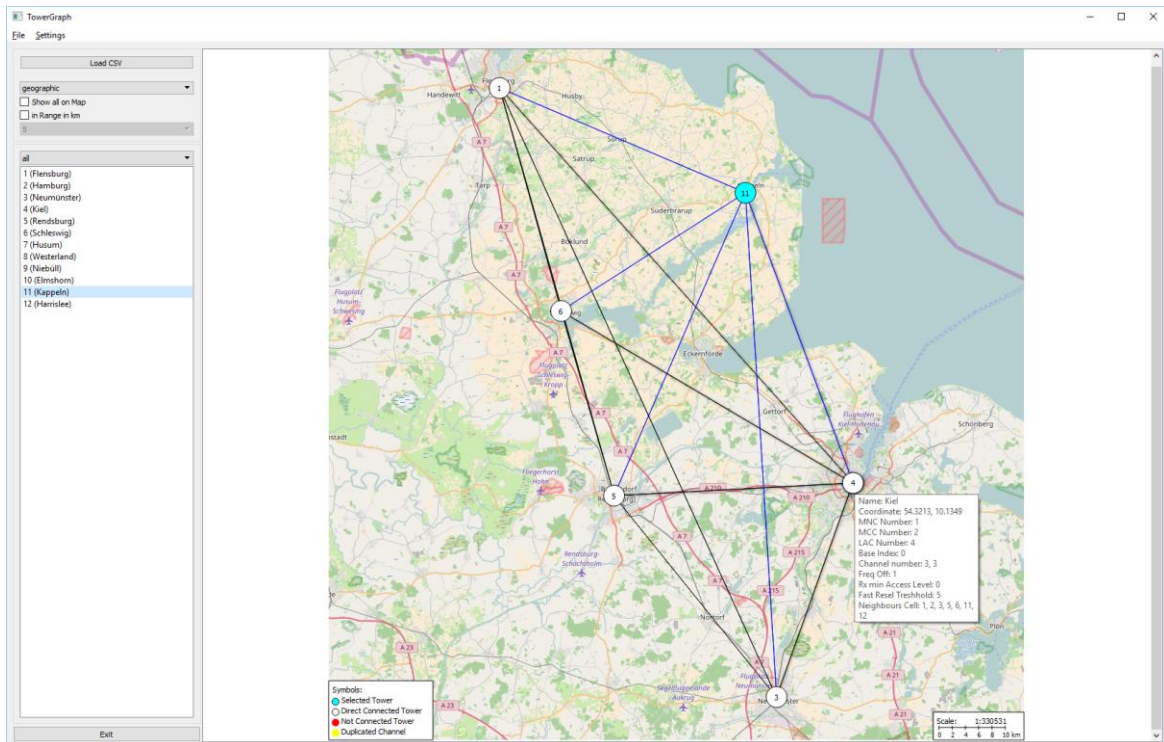


figure 4: When rolled over with the mouse the connections of the basis stations are highlighted and the available information appears.

The symbols and the scale are indicated below on the map as well.

MAS Specifications

Name	Description	
PC Requirements		
PC-Hardware (min)	Intel® Core™ i3, 4 GB Memory, 20 GB sufficient free space on the hard-drive	
OS	Windows 7, Windows 8, Windows 10 (32 or 64 bit Version)	
USB-ports	2.0 (used for chip set device connections)	
Ethernet	10/100/1000 Mbit/s (used for measurement device connection)	
Supported Recording Devices (subject to modifications)		
rfe 7504	Surveillance Monitor (USB receiver) for analysis of 4 frequency bands or 4 single frequencies simultaneously (also mixed possible)	
TCCA TMW	Receiving per UDP data formatted according to TCCA TTR 005-01, V 1.0.0 June 2014	
RTL2832	USB connected RTL283x chip set devices	
R&S EM100, R&S PR100	Rohde&Schwarz® EM100 or PR100 device (Ethernet connected) with remote control option according to ANSI/VITA 49.0 VITA Radio Transport (VRT) Standard.	
R&S ESMD	Rhode&Schwarz® ESMD device (Ethernet connected) with remote control option according to ANSI/VITA 49.0 VITA Radio Transport (VRT) Standard. Support for DDC / no DDC option.	
AirSpy	USB connected AirSpy drive	
Supported Protocols (further updates are planned)		
TETRA	ETSI TS 100 392-2 V3.7.1 (2016-01)	Air Interface (AI)
	ETSI EN 300 392-7 V3.3.1 (2012-07)	Security
	ETSI TS 100 392-15 V1.5.1 (2011-02)	TETRA frequency bands, duplex spacing and channel numbering
	ETSI EN 300 395-2 V1.3.1 (2005-01)	TETRA codec
	ETSI TS 100 392-18-1 V1.4.1 (2008-07)	Location Information Protocol (LIP)
	ETSI EN 300 392-12-22 V1.3.1 (2005-04)	Dynamic Group Number Assignment (DGNA)
DMR	ETSI TS 102 361-1	Air interface protocol
	ETSI TS 102 361-2	Voice and General services and facilities
	ETSI TS 102 361-3	Data protocol
	ETSI TS 102 361-4	Trunking protocol
Main Software Components		
Record TETRA and DMR I/II/III	<ul style="list-style-type: none"> control records: start/stop, saving file change gain monitor MER rate monitor frequency adjustments 	
MSC TETRA and DMR I/II/III	<ul style="list-style-type: none"> present protocol in message sequence charts bit precise analysis of elements highlighted protocol violation 	
QoS TETRA and DMR II/III	<p><u>View protocol data using graphs, lists and statistics:</u></p> <ul style="list-style-type: none"> downlink load MCCH, SCCH1, SCCH2, SCCH3 as a time chart downlink load MCCH, SCCH1, SCCH2, SCCH3 as a pie chart user defined traffic group types list of top traffic sources including identification of subscriber TCH load as a time chart TCH load as a call list cell change as a time chart (accept, reject, leave cell, command update) 	

Validity of the data sheet, subject to any changes to the software.

Development:

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