

MRX – Mesh Router

Short operating instruction for MeshGraph

Application

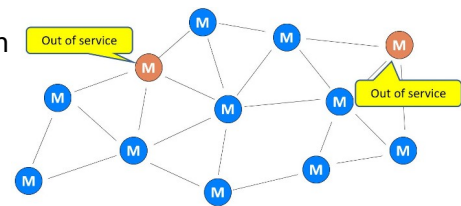
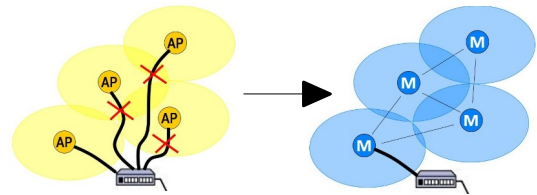
The MRX Mesh-Router family is dedicated to span wireless infrastructure with the help of Wi-Fi mesh technology. Typical wireless infrastructure relies on cable and fibre connectivity in the backbone. In opposite to this, the mesh is a wireless backbone. It is self-finding, self-configuring, and self-healing. Therefore the mesh is most suitable in areas, where existing infra-structure is not available for network connections. This is the case for ad hoc networks, disaster-areas, events, off-shore etc.

To setup the mesh only a mutual mesh-ID and a common mesh-key needs to be configured on the mesh devices. When a (new) mesh device enters the range of the other Mesh-Routers, an automatic setup and negotiation procedure is started to include the new member to the mesh. As soon as the new member is accepted, it participates the mesh-routing and it can be used as entry point and relay point: *self-finding*.

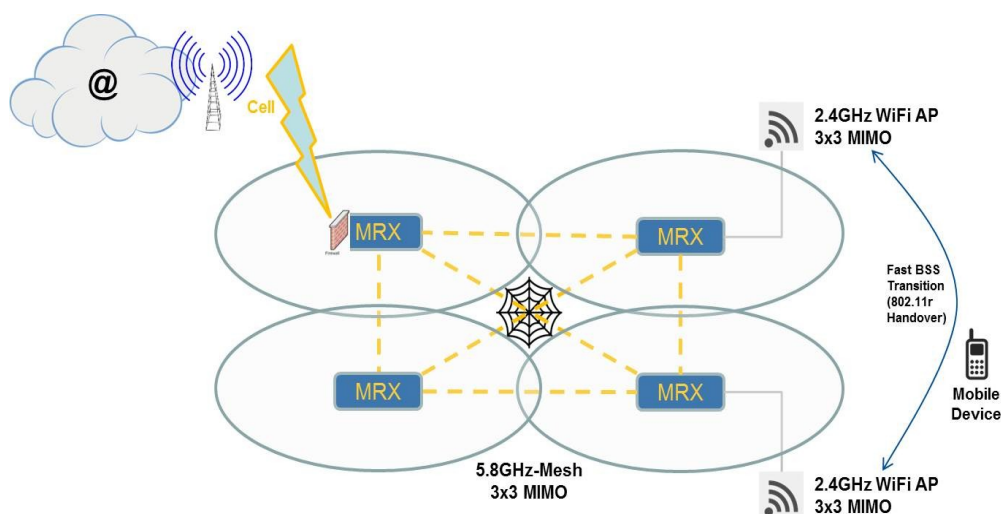
When a Mesh-Router leaves the range of the mesh, the new situation is automatically considered by the mesh-routing and routes throughout the mesh are modified: *self-healing*.

Mesh-Routers can move within the mesh and, if this happens due to the fluctuation, new routes within the mesh are sought and found. The mesh-routing discovers the new routes: *self-configuring*.

There is no limit in the number of mesh-members. With each additional member of the mesh, the covered area is enlarged and the redundancy within the mesh is increased.



Overview of AZG.mesh



The diagram shows different applications of MRX together in a mesh.

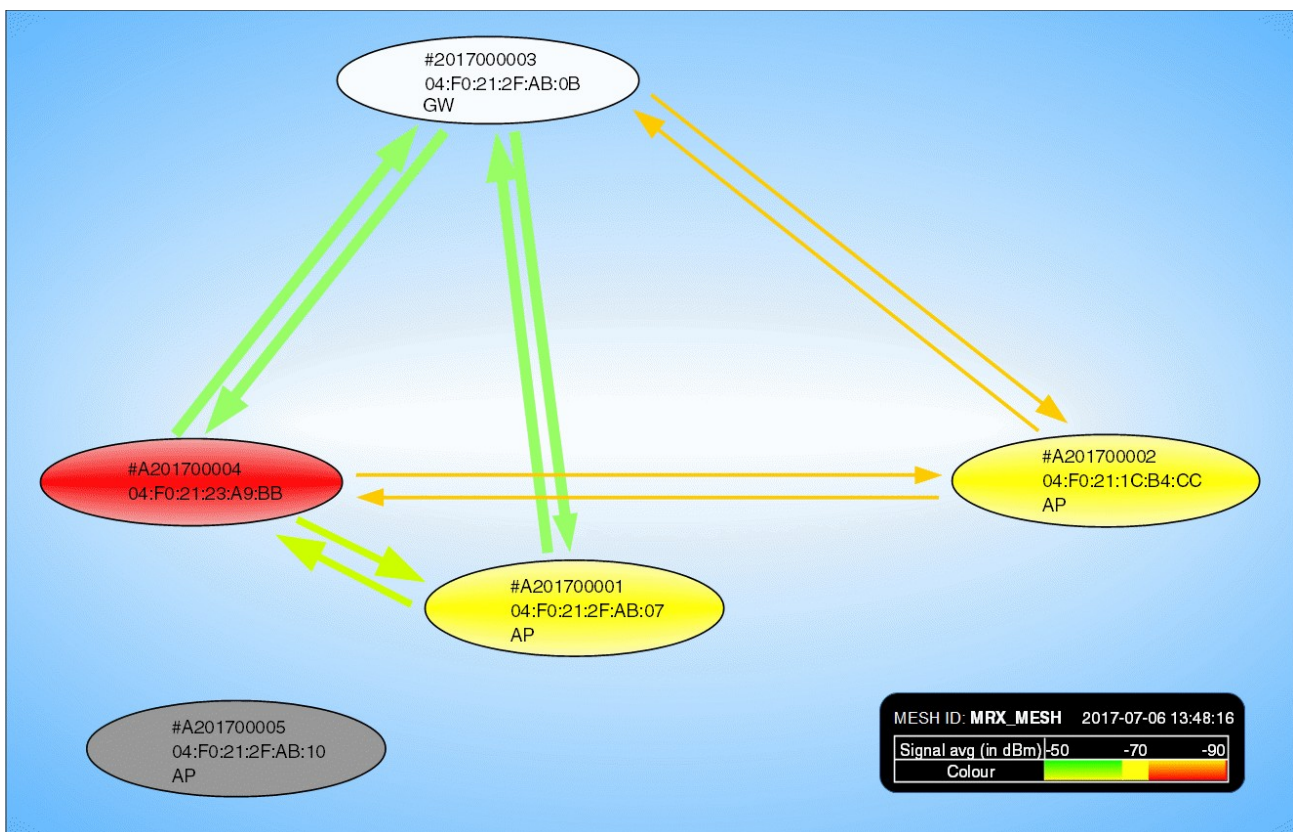
Mesh-Graph

The Mesh-Graph is a visual tool to present the Mesh, all discovered MRX Mesh-Routers and the (active) links between them. The Mesh-Graph can be installed on every Mesh-router, but a special license file (upx-file) is required to enable it.

On Mesh-Routers where the Mesh-Graph is enabled, you can see the Mesh-Graph by the following scheme:

1. Connect your Laptop/PC to one of the available Mesh Routers (LAN cable or Wi-Fi AP),
2. Open your web-browser,
3. Enter the IPv4-address of the device where the Mesh-Graph is installed in the address field to get to the login screen,
4. Login to the device, but consider that the login and password might be different to your local device! Ask your admin for the correct login.
5. Open the sub-menu MESH-Graph.

Overview



In the picture above an example for Mesh-Graph is presented. 5 Mesh-Routers have been detected and the links between are shown.

Explanation of node symbols

 Each discovered station is shown as oval, where the device's name and Mesh MAC-address is printed inside.

 If a node does have an actual warning or error, the oval is filled with yellow or red.

 Node3

 If a before discovered node has lost its connection to the mesh, than the node is placed apart and filled with gray. This is a disconnected node.

AP / GW: Nodes, which are operating as Wi-Fi Access Point or as (internet) Gateway have an additional text inside the oval.

Nodes, which are shown with a gray filling are switched off, outside the range of any other Mesh-Router, or permanently removed. One can delete those nodes by pressing the "Clear Disconnected Devices" button.

Quick Access to Nodes

When you move the cursor above a node, you can click on it and a new browser window is opened to login to this node.

Explanation of connecting lines

The links between the nodes consist of two lines. The two lines stand for the TX and RX direction of each link. The lines have different thickness and colour.

The thickness of the lines are related to the throughput, which is measured between the nodes.

The colour of the lines are related to the attenuation, which is measured between the nodes.

Short operating instruction for MeshGraph

Tooltips

When you move the cursor above a node, a link, or the background, you can use right-click to get tool-tips with more details.

Tooltip Background: - Mesh ID

- Channel number of mesh
- Encryption type

Tooltip Node:

- Alarm status
- Type
- Device Name
- IP Address
- Serial Number
- MAC Address (Mesh Wi-Fi)

Tooltip Link:

- Name of both peers, which build the link
- RX Bytes counter
- RX Packets counter
- actual RX Bitrate
- actual signal strength
- Average signal strength