



ANTENNA-RELATED SERVICES

Traditional. Innovative. SOLUTIONS.



WHY ANTENNA PLACEMENT IS SO IMPORTANT

To ensure reliable communication between rail vehicles and the infrastructure, the optimal positioning of the various antennas on the vehicle roof is very important. Roof-mounted structures limit the installation space and interfere with both transmission and reception. When planning the antenna placement, the mutual interference between the various antennas must be taken into account. Simulation is a suitable method for this. Mechanical integration and strength and an easy installation, are also essential.

In any case, the future migration of train radio systems to the new 5G/FRMCS radio technology will lead to significant changes in antenna configurations. We strongly recommend addressing this issue at an early stage.

[See the three exemplary FRMCS migration concepts shown alongside.](#)

We offer the following services to provide you with the best possible support:

- ▶ **Analysis/consulting, also in connection with the FRMCS migration**
- ▶ **Concept/simulation (radio coexistence/radiation pattern)**
- ▶ **Detailed design/calculation (structural analysis)**
- ▶ **Emission measurement using drones (radiation pattern)**
- ▶ **Support with the documentation required for subsystem certification**

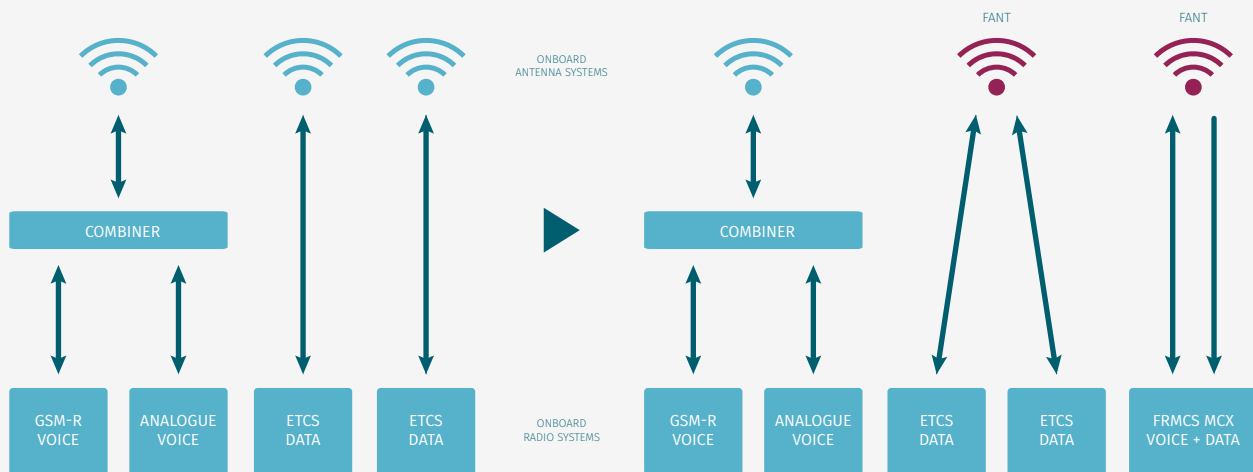
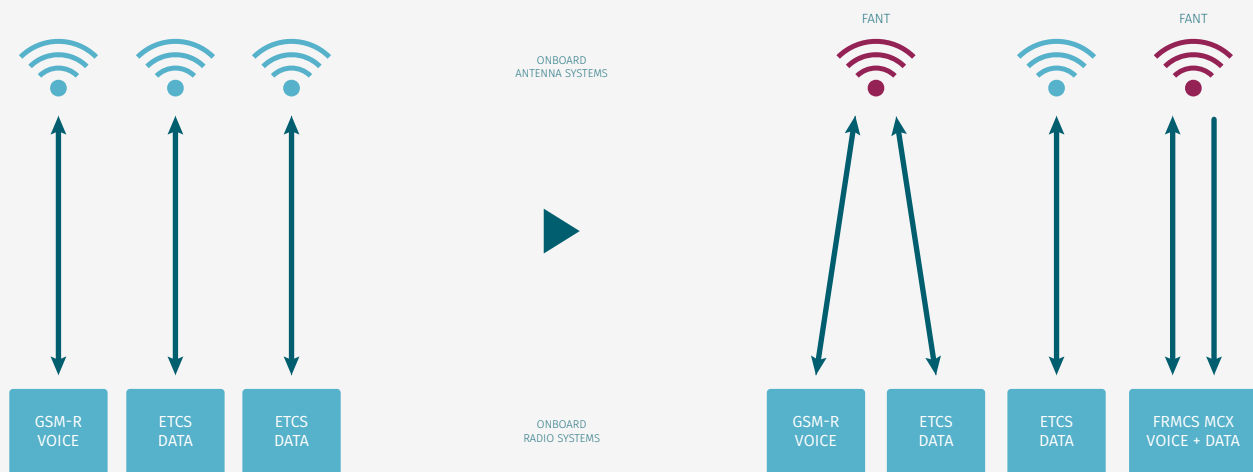
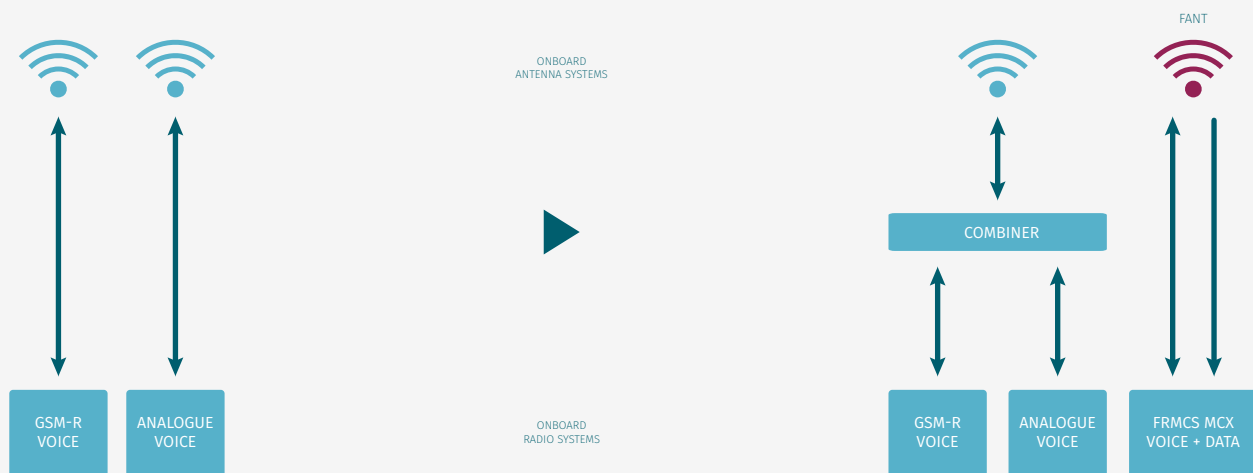
Get in touch if you need support with your projects. We have the necessary expertise and tools.

During an initial consultation, we will analyse your specific case together to determine the required services and draw up a quote for you.

We are happy to help!



sales@funkwerk.com



funkwerk

The word 'funkwerk' is rendered in large, white, three-dimensional block letters. To the right of the text is a red signal icon consisting of four concentric, curved lines of increasing size, resembling a radio wave or Wi-Fi symbol. The entire graphic is set against a light blue background with a subtle, wavy pattern.

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