

EXTERNAL INTERFERENCE HUNTING

With an increasing number of important communication systems based on cellular networks, the need for quick and precise troubleshooting in these networks also increases. In many cases external interferers are responsible for caused trouble. This infographic shows the process of identifying and eliminating one of these interference sources. In our case, an ambulance wants to contact the hospital and send important examination results for optimized patient treatment, but the link does not work reliably.

1 Identification (alarm notification)

In case of a broken connection, the network operation center of the operator of the (public safety) network receives an alarm message from the network and issues a trouble ticket to its operation team. The team now checks for internal network problems caused by intermodulation, corroded or broken parts or external interference.

2 Verification (operator)

After internal interference could be excluded, a network operator technician does **first measures to search for external interference**. He measures with a R&S®FPH handheld spectrum analyzer and directional antenna by walking around a base station pointing the antenna in different directions. Once suspicion for external interference is proven, next step is to call the regulatory authority, which is now responsible to precisely locate and eliminate the interference.

3 Location and mitigation (regulatory body)

The regulatory authority sends a **mobile monitoring station** to that site, where radio interference was reported. The operators **verify the unwanted emission in the spectrum** before they home in on the emitter with the vehicle. On the last meters, operators use the portable receiver with handheld antenna for finally **locating the interference source**.

2 VERIFICATION		3 LOCATION AND MITIGATION		
Products				
R&S®TSMx network scanner with R&S®ROMES4 drive test software	R&S®FPH spectrum analyzer with R&S®HE400 antenna	R&S®PR200 monitoring receiver with R&S®HE400 antenna	R&S®PR200 monitoring receiver with R&S®ADD107 DF antenna	R&S®EB500 monitoring receiver with R&S®ADD597 antenna
		R&S®MobileLocator	R&S®ARGUS with R&S®MobileLocator	
Use case				
Mobile network drive test system with interference identification	Universal spectrum analyzer with directional antenna	Portable monitoring/direction finding receiver with directional antenna	Automated interference hunting and mitigation solution (optimized for urban areas – statistical multipath cancellation)	Solutions for advanced interference hunting and emitter location

