



FTTA – Fiber to the antenna

The aim of the project is the establishment and development of a sensor product spectrum, which covers new requirements for modern radio reconnaissance sensors. The replacement of complex coaxial connection technology by fiber optical solutions and the focus on highly mobile integrated antenna receiver solutions are essential.



The characteristics of receiving antennas and direction finding antennas as well as their connection with the respective receivers determine the operating conditions, performance, mechanical properties and the costs of radio reconnaissance systems.

Traditionally, various antennas are used stationary, movable or mobile. The connection to the receiver is usually realized in coaxial technology. The size and weight of these solutions define a huge challenge for masts and vehicles that can only be met with elaborate and cost-intensive technology. Restrictions, especially with regard to mobility and deployment concepts, are compulsory.

New materials, components and technologies open up hitherto unknown possibilities for the design and realization of effective and efficient reception systems. Signal processing close to the sensor allows for early data reduction in the processing chain.

The aim of the project is to develop a spectrum of innovative products with the use of new technologies and adapted concepts, which meet the current requirements of the market.

The current and future expected demand is particularly characterized by the following requirements:

- optimized SWaP parameters (size, weight and power)
- robustness also in stationary applications (lightning strike, environmental conditions, weight)
- focus on tactical systems (manageability, mobility)
- small, integrated systems for mobile platforms (vehicles without special adaptations, balloons, flying platforms)
- multi-channel applications (direction finder, phased array)
- connectivity to standard IT systems
- reduction of costs.

Today, new technologies are available that are used in the field of communication technology and lead to new operating conditions:

- antennas made of meta-materials are proposed and offered
- the connection of antennas by means of fiber optical connection is possible in the frequency ranges HF and VUHF. New components allow for practical solutions, which are also suitable for radio monitoring solutions.

The product spectrum is interesting for system houses and end users, in order to minimize effort, costs and risks.

Technology	Meta-materials, fiber optical connection, electronics (RF to fiber), signal detection, radio monitoring.
Market	Security agencies, network agencies, regulatory authorities, system houses.
Remarks	Medium complexity.