

## **Multi-beam Antennas for New Applications**

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In the last decade, there has been a great deal of activity in the development of multi-beam antenna systems. Use of multi-beam antenna systems in mobile communication systems multiplies the radio frequency resource, which allows serving a large number of subscribers simultaneously. At the same time, multi-beam antenna systems allow optimal use of the information capacity of the communication system, depending on the current traffic in the working area of each beam. As a result, a low cost of transmitting a unit of information and optimal (corresponding to current traffic) use of the communication system resource in the service area is achieved. The use of multi-beam antennas in panoramic radiometers can improve the sensitivity and resolution of the system. The trends in the development of multi-beam antenna systems for new applications including multi-beam antennas with hybrid beam forming and ultra-wide band multi-beam antennas are analyzed.