

Satellite Communication For IoT Networks

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Abstracts

The satellite IoT industry is undergoing a transformation with the emergence of NewSpace and the rising demand for global IoT connectivity. Exploration of innovative satellite solutions, adoption of robust and dynamic business models, and a growing shift in investments and research from public to private organizations are fast emerging as the key trends in the satellite IoT ecosystem.

Demand of IoT end-device connectivity is driving the need for innovative communication techniques. In addition to the terrestrial infrastructure, satellite communication appears set to play a key role in supporting IoT applications in diverse areas, including mining locations, deep sea, and remote sites where cellular connectivity is unavailable.

This report includes an overview of the emerging trends in satellite communication for IoT applications, highlighting the interest around the exploration of new orbits, development of nanosatellites, and impact of blockchain, AI and 5G for a connected satellite environment.

Competitive Analysis

This section includes a study of the leading satellite companies and other emerging firms operating in the IoT space. These include entities like Inmarsat, Iridium Communications, Intelsat, Globalstar, and Orbcomm.

We also provide an overview of the startups offering LEO nanosatellites. Most of these companies are focusing on building LEO constellations in the coming years and are partnering with IoT companies and operators for delivering enhanced connectivity solutions for a streamlined IoT ecosystem. The ultimate goal here is to deliver real-time satellite communication for the IoT ecosystem.

The startups covered in the report include:

Myriota

Aistech

SAS

Open Cosmos

Astrocast

Fleet Space Technologies

Hiber

Analytical Space

Kepler Communications

Commsat Technology Development Co Ltd

KLEO

Kinesis

NanoAvionics

Accion Systems

Phase Four

Syrlinks

Vector

LinkSpace

Helio Wire

Kymeta

Phasor

Key Insights:

Demand for small LEO satellites is increasing with the need to deliver accelerated space services.

Hybrid satellite-terrestrial configurations are going mainstream as support for advanced applications such as autonomous vehicles and autonomous vessels.

Machine learning techniques are being investigated for interference mitigation, fault prediction, dynamic beam scheduling, and inter-satellite switching in a multi-satellite communication system.

Adopting quantum computing and blockchain in IoT space applications can help in addressing security challenges.

Low-cost, compact, and electronically steered antennas are being developed for tracking LEO satellites. The efforts in this direction include phased array and metamaterial-based antennas.

Key questions addressed in the report:

How LEO satellites are addressing the requirements of the IoT market?

What are the major IoT applications using satellite communication?

What are the partnership details and future roadmaps of the NewSpace companies?

How are emerging technologies like 5G, AI, blockchain and quantum computing impacting the satellite IoT ecosystem?

What are the opportunities for non-space companies (automotive, cloud

providers, and telecom companies) in the satellite IoT space?

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