Plan-S Fuels Satellite-based IoT Communication

As satellite-based IoT communication networks gain strategic importance globally, Turkey's Plan-S is pressing ahead with ambitious investments both in orbit and on the ground [1]. The new-generation space technology company – founded in 2021 – has rapidly expanded its satellite fleet and infrastructure to meet surging demand for connectivity in areas underserved by terrestrial networks. Plan-S is widely regarded as Turkey's fastest-growing space firm [2], and its continued progress exemplifies a broader global push to connect the Internet of Things (IoT) via satellite.

Plan-S operates a network of small satellites in low Earth orbit that provide IoT connectivity, earth observation and remote sensing services. Through its Connecta IoT Network constellation, the company delivers low-power, cost-effective and reliable data links in regions where ground telecom infrastructure is lacking [1]. This satellite-based IoT communication system already supports critical applications that require ubiquitous coverage. In sectors from energy to agriculture, such constellations enable monitoring of remote assets – from pipeline sensors to environmental stations – that would otherwise remain offline [3]. Industry analysts likewise project robust growth for this field: the satellite IoT market is expected to grow about 26% annually and exceed $4.7 billion by 2030 [4], underlining the high stakes and opportunities involved.

Plan-S Builds Global Satellite IoT Network

After just a few years of operations, Plan-S has built up an impressive space presence. The company now has 17 satellites in orbit, with 12 of them providing commercial IoT communication services via the Connecta constellation [2]. This expansion was recently bolstered by the successful launch of four new satellites on SpaceX's Falcon 9 (Transporter-14) mission in mid-2025 [5]. *(Read more: Turkish tech company's presence in space grows)* These additions significantly boosted the network's capacity and service quality. With the current generation of satellites, Plan-S can collect data 40% more frequently than before and achieve aggregate throughputs on the order of gigabits per second [6] – a notable feat for low-power IoT devices.

Connecta IoT Network is already delivering field-proven connectivity, supporting diverse uses ranging from smart utility meters to agricultural and environmental sensors [3]. "Each new satellite launch brings us a step closer to seamless global coverage," said Plan-S CEO Özdemir Gümüşay. He noted that their constellation's growth allows more frequent data collection and broader industry reach. "Every additional satellite we put up increases our operational speed and expands the range of sectors we can serve, bringing us nearer to our vision of uninterrupted global connectivity," Gümüşay explained [7] [8]. Ultimately, Plan-S aims to deploy a constellation of hundreds of satellites by 2030 to blanket the planet in IoT coverage [9] – an objective that highlights the scale of its strategic ambitions.

Strengthening the Ground Infrastructure

Equally vital to Plan-S's strategy is an expanding network of ground stations that communicate with its satellites. The company has established four satellite ground stations so far – two in Ankara (Turkey), one in Erzurum (eastern Turkey), and one in Sweden – and all have been developed with in-house engineering [10]. By increasing the number of contact points around the world, Plan-S can download data and issue commands to its IoT satellites far more frequently, maximizing operational efficiency. The strategic location of the Swedish station near the Arctic circle, for example, enables much more frequent communication with satellites in polar orbits. This fully Plan-S-built station operates on S- and UHF bands with minimal interference and is engineered to withstand extreme climatic conditions [11], ensuring reliable performance in harsh environments.

Plan-S's engineering team designed the ground stations domestically, integrating custom hardware and software to optimize operations [12] [13]. All stations are centrally managed through a proprietary control system, allowing the constellation to be operated as a cohesive global network. "With our own software infrastructure, our satellites can autonomously hand off between these stations," Gümüşay noted in an interview [14]. "This gives us both high operational speed and flexibility," he said, emphasizing that automation minimizes the need for human intervention. Indeed, the firm's central control software schedules contacts and can respond to emergencies in real time, guaranteeing continuous service continuity even with minimal personnel involvement [15]. This level of autonomy and responsiveness is crucial for IoT services, which often require timely data delivery from widely scattered sensors.

Plan-S plans to further broaden its ground footprint in the coming years. The company is working on next-generation ground stations that will operate on additional frequency bands and offer higher capacity. According to Gümüşay, regulatory approvals are being secured in various regions to pave the way for new station deployments. As those stations come online, Plan-S expects to extend its global coverage and bring its satellite-based IoT communication services to the next level. "We are developing different bands and higher-capacity new stations," Gümüşay said, adding that details of these investments will be shared publicly in due course. Each expansion of the ground network will further reduce latency and increase the volume of data the constellation can handle, tightening the integration between space and Earth in Plan-S's system.

A Strategic and Industrial Asset

Beyond its commercial goals, Plan-S's work carries strategic significance for Turkey and exemplifies a wider industry trend. **Satellite-based IoT communication** networks are increasingly seen as critical infrastructure for the digital economy and even national security. Reliable space-based connectivity ensures that vital systems – from power grids and oil pipelines to defense installations – remain connected and monitored even in remote locations or during disasters. As one U.S. Space Command official observed, satellites are "absolutely essential to not just DoD efforts, but a modern way of life," underpinning everything from financial transactions to weather tracking [16]. This underscores why many governments and companies are racing to develop resilient satellite communication constellations. Plan-S's approach, in particular, aligns with the global NewSpace movement: private ventures leveraging small-satellite constellations to provide ubiquitous services once dominated by large incumbents.

Plan-S executives also frame their project as a driver of technological self-sufficiency. "This entire infrastructure was developed by Turkish engineers. With a high-tech network stretching from Turkey to the world, we are not only enabling communications but also expanding our technological

independence," said GökmenCengiz, the company's Deputy General Manager for Technology and Engineering [17]. Indeed, by designing its own satellites, ground stations, and software, Plan-S reduces reliance on foreign providers and builds domestic expertise in space systems. Such capabilities have dual benefits: they meet civilian IoT needs while contributing to the country's strategic know-how in satellite communications. Plan-S is building an internationally competitive infrastructure that can service global clients, but it is also strengthening Turkey's position in the space and communications arena.

The coming years will be pivotal as Plan-S and peers execute on their lofty plans. More launches and ground stations are on the horizon, and each will bring the world closer to truly ubiquitous IoT connectivity. Plan-S's relentless investments show no sign of slowing – either in the sky or on the ground – reflecting a belief that satellite-based IoT communication will be indispensable to the connected future. By marrying a home-grown satellite constellation with a worldwide ground network, Plan-S is helping to shape a more connected and digitally resilient future, bridging gaps in coverage and laying the groundwork for new services. It is a vivid example of how strategic industrial initiatives in space technology are revolutionizing global connectivity.

Further Reading

- **Plan-S Launches Four Satellites for its Connecta IoT Network** – SpaceWatch.Global (Jan 22, 2025)
- **Satellite IoT Market Growth & Outlook: 5 Key Drivers** – IoT Analytics (June 17, 2025)
- **Expanding Connectivity Reach with Satellite IoT** – IoT For All (July 25, 2025)

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