

Effective Space Based Internet of Things Constellation Enabling Information Technology Solutions

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“TianQi” LEO micro-satellite Internet of Things (IoT) constellation, is a commercially running space based IoT system, which is composed of 38 LEO micro-satellites, and will be fully deployed by the end of 2023. Ground terminals are portable and cost effective, with power consumption as low as 100mw. The constellation could provide global users such as CTBTO with “air, ground and sea integration” satellite IoT data communication service. Each micro-satellite weight is about 20-50 kg with a power consumption of 50-100W. The micro-satellites would be launched into circular orbit of 500-900 km altitude, which would bring advantages such as short transmission delay, low path loss and low power consumption, low cost and miniaturization of user terminals. “TianQi” LEO micro-satellite IoT constellation would establish a global coverage 0.2kbps to 6kbps narrow bandwidth communication network, capable enough to provide varieties of solutions to CTBT application scenarios, such as operation and maintenance of remote International Monitoring System facilities, emergency communication and health and safety of on-site inspection team and inspectors, real time tracking and CoC solution to on-site inspection samples, etc.

Promotional text

This work provided a cost effective global coverage space based IoT constellation enabling information technology solution to challenging CTBT scenarios. “TianQi” LEO micro-satellite IoT constellation would be capable to support IMS system operation, OSI training and exercises.

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