

Connecting All Things with LEO Constellation

Beijing GUODIAN HI-TECH science and technology Ltd

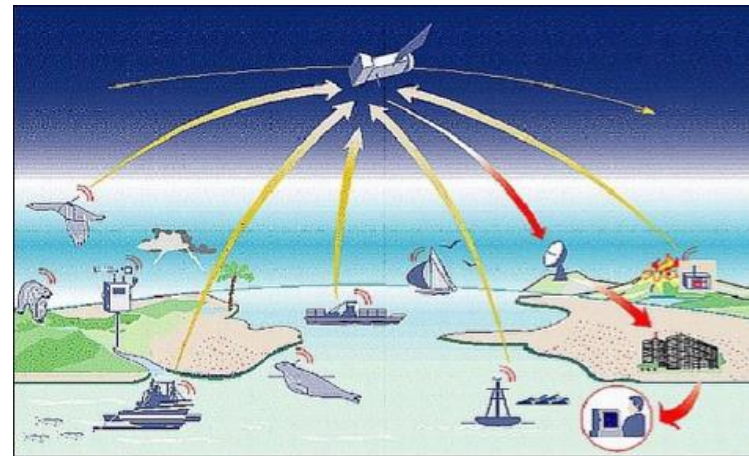
1 IoT Asymmetries

- All things interconnected everywhere
- 2020, IoT terminals reach 26 billion (Gartner)
- 2025, IoT market size reach 11.1 trillion (McKinsey)



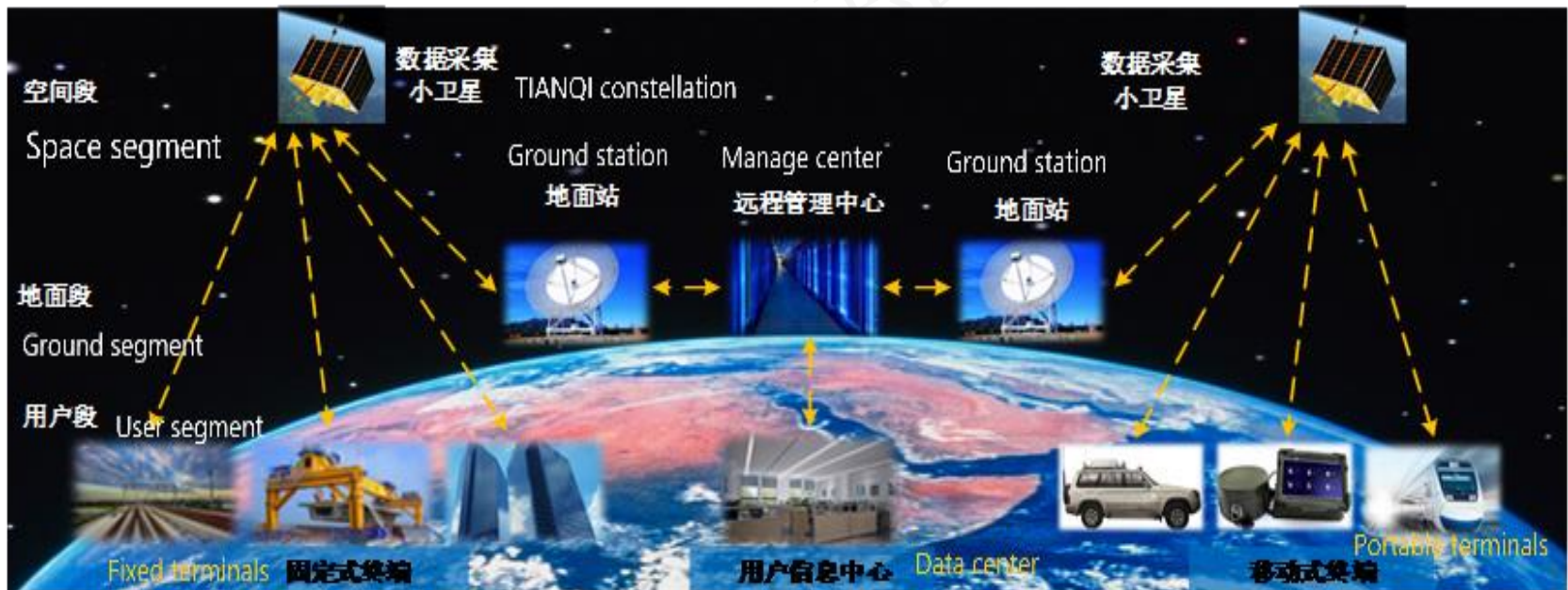
Current situation without access

- Sea, more than 60% of the Earth's surface
- Most flight area
- Remote area
- Emergency



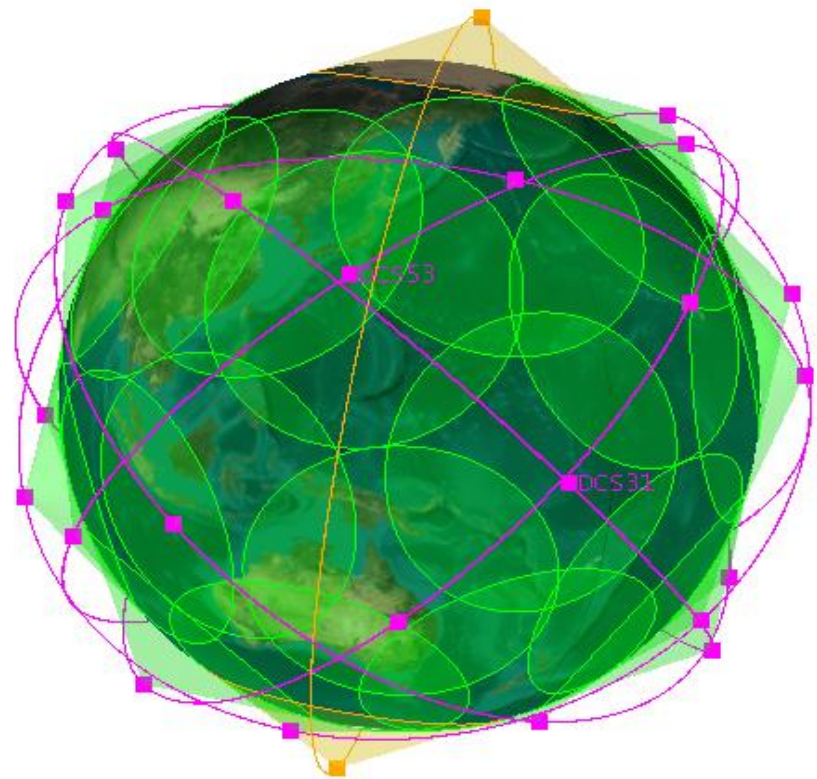
2 TIANQI IoT constellation system

- Low-cost Global Connectivity
- for Internet of Things
- with LEO constellation



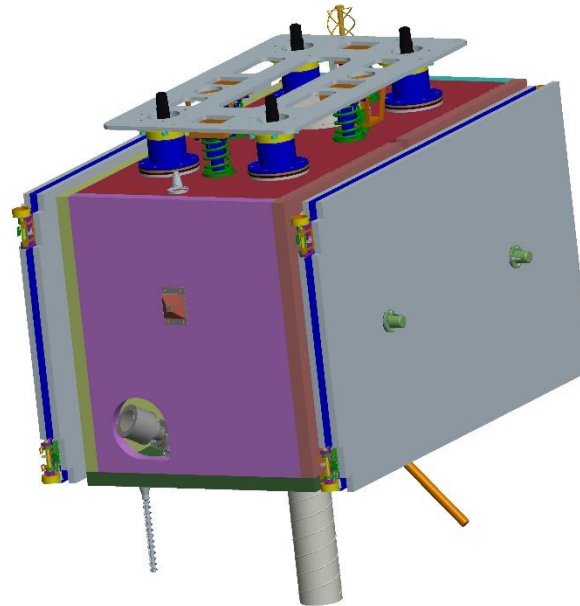
2 TIANQI IoT constellation system

- Walker + SSO, 38 satellite
- 2018 AUG. 6/38
- 2020, complete deployment



2 TIANQI IoT constellation system

- 50kg
- 5 years
- AIS, ADS-B
- DCS



2 TIANQI IoT constellation system

- UHF
- VHF
- X
- China, Zhongwei



3 Application

Shipping/Traffic



Shipping (based on AIS and DCS)



Flight tracking (based on ADS-B)

3 Application



Intelligent Ocean, Buoyage



Bridge monitoring



Dam monitoring

3 Application

Environmental monitoring and Asset management



River level, flow, loads monitoring



Corps supervision



Environment and atmosphere monitoring



Mining production supervision



Remote assets management

3 Application



Weather information collection



Pollution supervision



Glacier monitoring



Animals tracking



3 Application



Forest fire supervision



Earthquake forecasting



Debris flow supervision

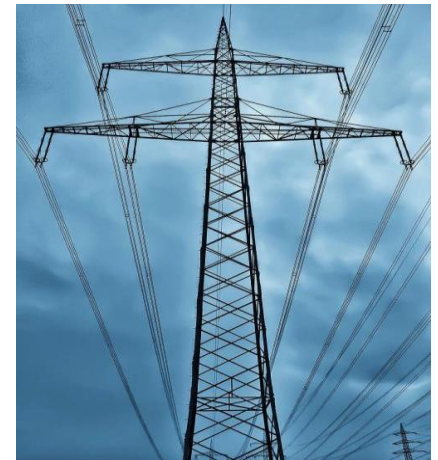


Cold Chain Logistics, Dangerous goods transportation

3 Application



Oil and gas pipe line monitoring



Power line monitoring

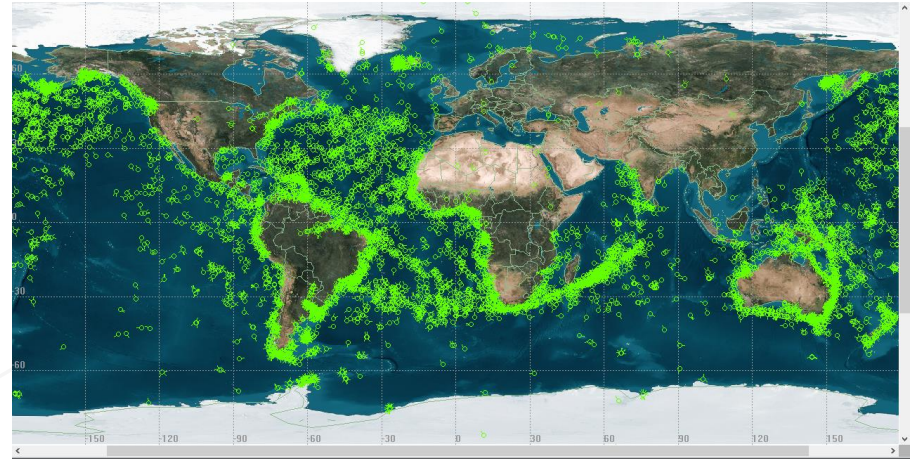
3 Application



Commercial applications

4 About GUODIAN

- IoT constellation data service provider

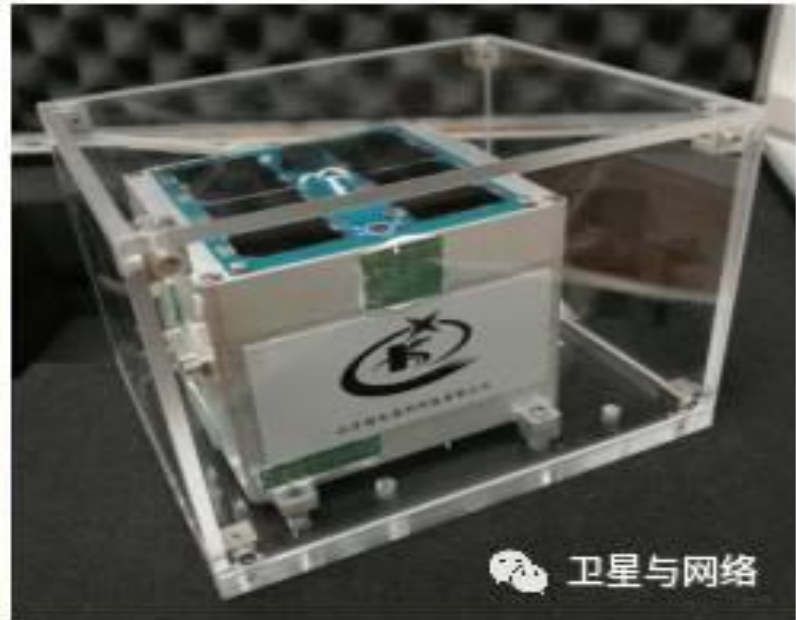
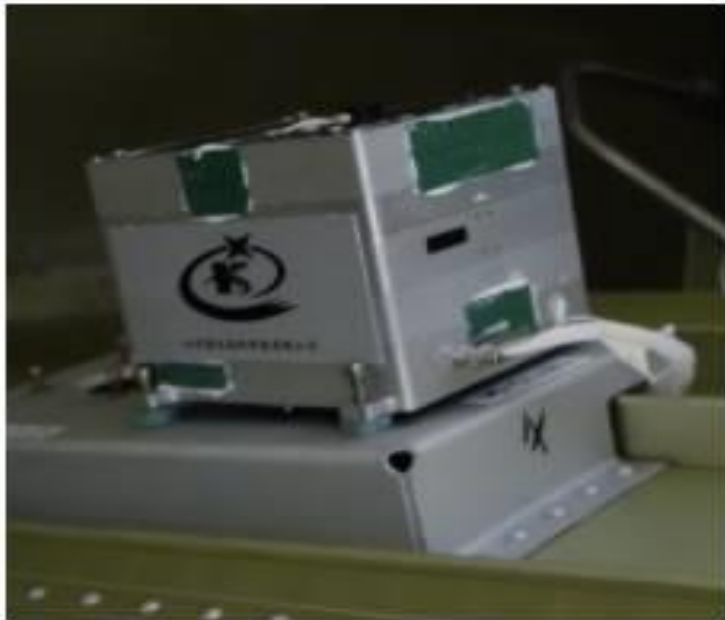


- 1 satellite on orbit, TT-3, AIS, ADS-B



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- 2017 Dec, communication module on-orbit test



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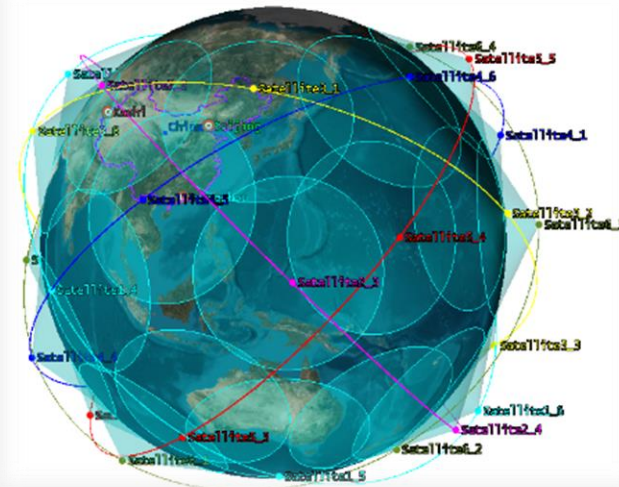
- Forerunner satellite is ready to launch



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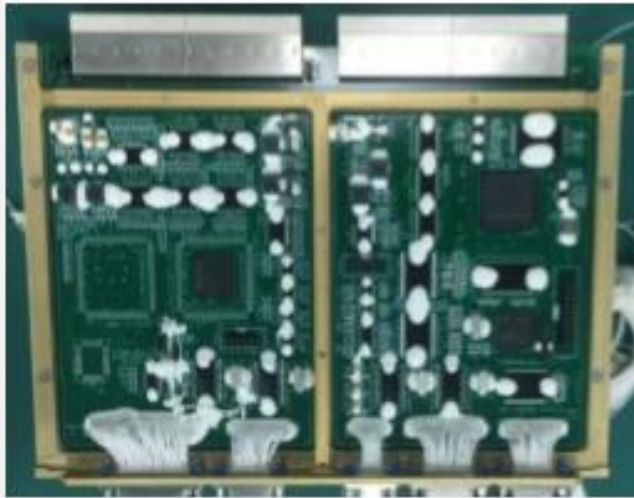
Constellation technology

- Constellation design
- Satellite design
- Globally licensed UHF spectrum



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On-Board Computer



- “Brain” , Data management
- Satellite operation
- Comprehensive information Processing

AOCC



- Attitude determination
- Attitude control
- Orbit control

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Communication Module and Terminal



- **Communication system design**
- **Prototype development**

4 About GUODIAN

- <http://www.guodiangaoke.com/>
- CEO Lv Qiang , PhD Communication system



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4 About GUODIAN

● SN ENGR, Tang Yao, [\(0086\)13439820181](mailto:tangyao@guodiangaoke.com)

● Terminals development

● Market development

● Ground utility development