



CUBESAT VISION

Ankara December 14th, 2023

HUGHES
An EchoStar Company

Mission Statement

Our Goal

Ubiquitous connectivity for people,
enterprises, and things everywhere

ECHOSTAR[®]

HUGHES[®]
An EchoStar Company

Multi-Orbit and Multi-Transport



- JUPITER
- OneWeb
- LTE and 5G

2022 Highlights

JUPITER™ 3



GEO

Hughes ESAs
for OneWeb



LEO

HughesNet
Fusion
Service Plans

HughesNet.

GEO/LEO/ Terrestrial

Launch of EML
LoRa® IoT
Service



S-BAND



hispasat



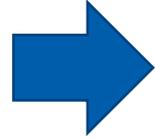
SES



De facto standard for satellite broadband implementations

Enterprise Markets Served

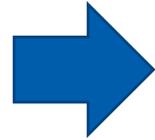
Digital Divide



- Rural broadband
- Education



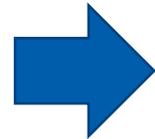
Enterprise



- Distributed branch
- Oil and Gas, etc



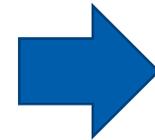
Cellular Backhaul



- Small cell economics
- 3G and 4G growth



On The Move



- Online anywhere
- Aero/Maritime



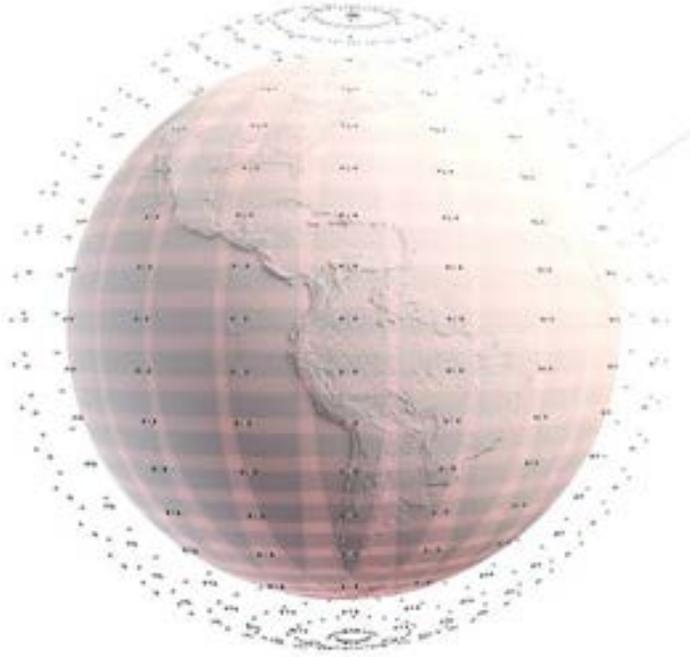
Government



- National networks
- ISR
- Border protection



OneWeb



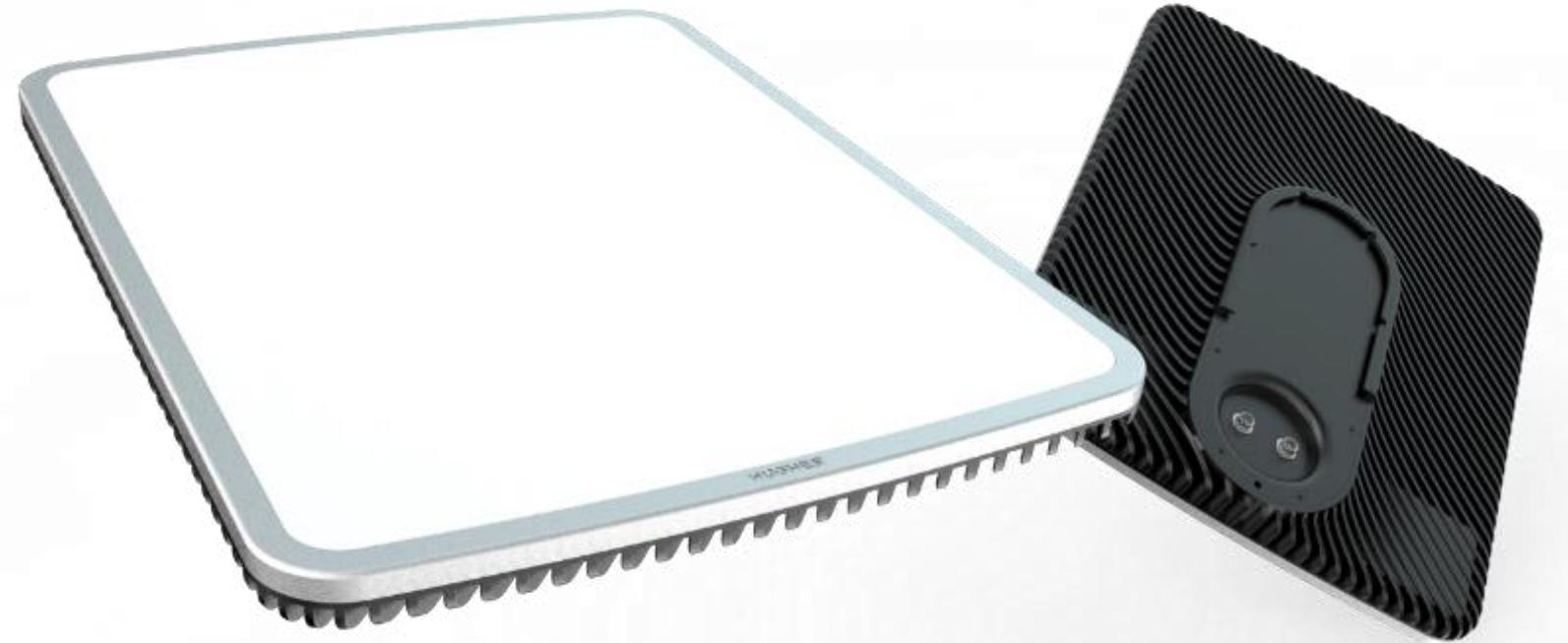
- Fleet with 648 satellites
- LEO, 1,200 Km altitude
- 30 times closer than GEO
- Latency 50 – 100 ms

-
- 44 gateways to be completed in 2023
 - Delivering 24/7 operational support for the OneWeb network
 - Advanced AI management capabilities



Electronically Steered Antenna (ESA) for OneWeb

- Designed for OneWeb
- Low profile with no moving parts
- 195/32 Mbps speeds
- Fixed or mobile
- 10,000 terminals to be delivered



Fusion With OneWeb for Aero.

- Hughes new LEO in-flight connectivity (IFC) solutions
- Global distribution partnership with OneWeb
- Industry-first, patent-pending, hybrid solution



Hughes Fusion In-Flight

GEO + LEO Hybrid

Hughes LEO antenna, OneWeb capacity and Hughes Fusion™

- Transforms any GEO satellite-powered IFC service into a dual-mode solution
- Low-latency Wi-Fi experience
- Works with ANY GEO Aero system

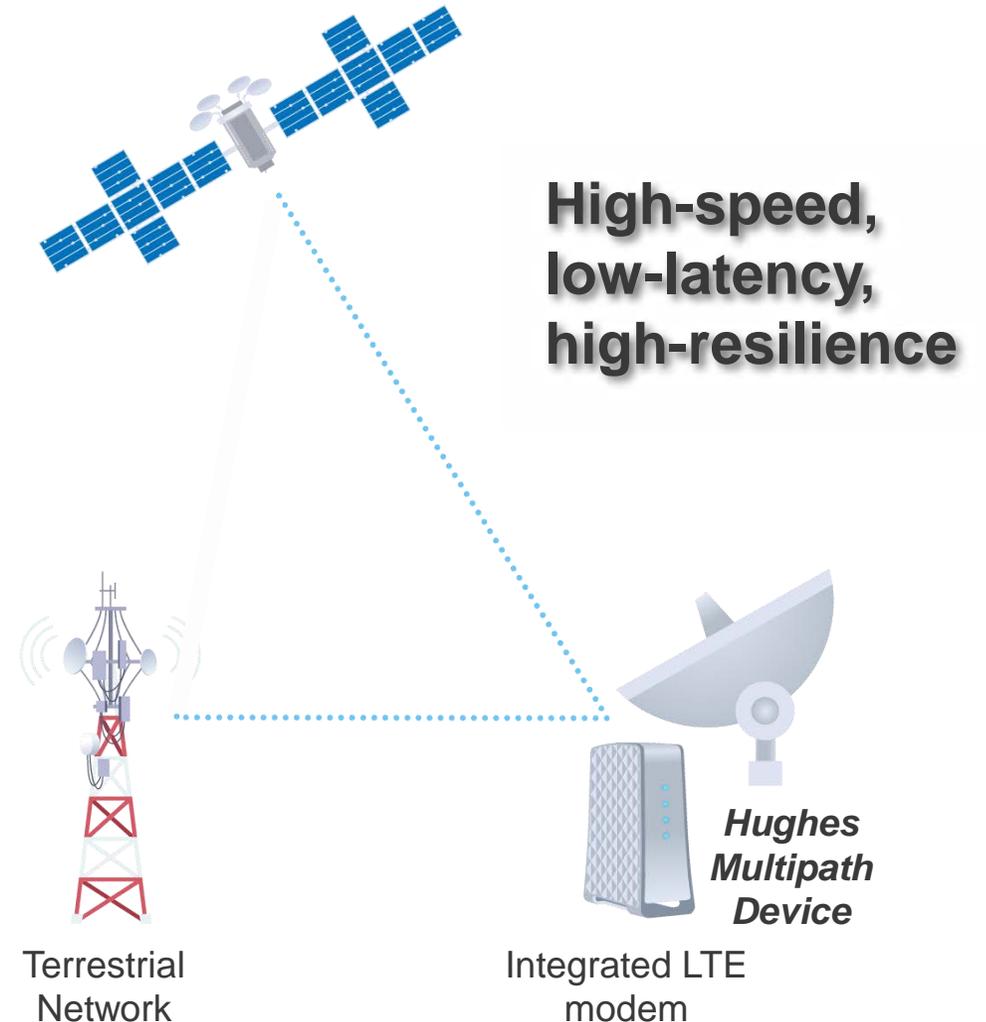
Hughes Fusion Technology

- Combining high-capacity satellite with low latency LTE
- Enabling high resiliency (dual path)

Increased Performance

Enhanced Connectivity

High Availability





Satellite IoT

LoRa® enabled satellite connectivity

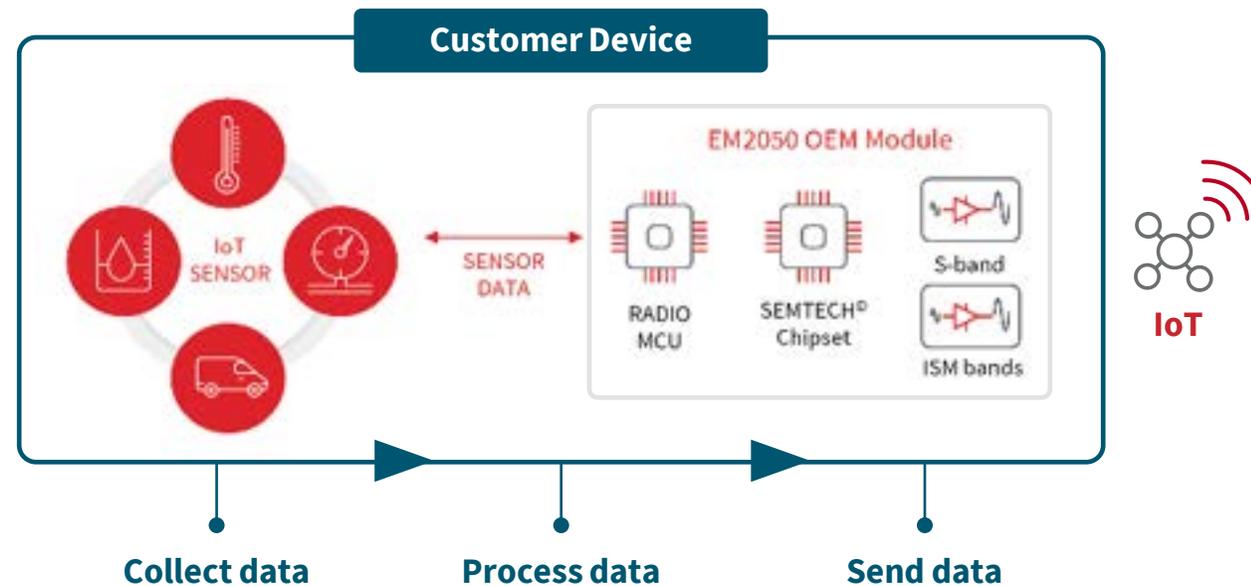
EchoStar Mobile EM2050 Dual Mode Module



Dim 47x32x4mm

EM2050

- Low power using LoRa®/LoRa®-FHSS modulation
- Real time bi-directional connectivity
- Based on latest Semtech radio chipset LR1120
- LoRa® satellite module on licensed S-Band (2GHz) @27 dBm
- LoRa® terrestrial module on ISM bands
 - EU868 @14 dBm
 - US915 @22 dBm
- Homologated for ETSI, UKCA, FCC and ISED Market



Strong Demand from Key Verticals

Deployment of low-density sensors is no longer an issue enabling fast Time-To-Market



- Irrigation control
- Moisture monitoring
- Livestock farming

Affordable and Real-Time planet earth monitoring



- Glaciers
- Parks & Forests
- Rivers

Real-Time bi-directional communication enables predictive maintenance for critical infrastructure



- Roads & Bridges
- Railways
- Power Lines & Grids
- Pipelines

Geo Stationary Satellite coverage enables a wide range of applications



- Asset Tracking
- Search and Rescue
- Land & Sea Mobility

Thank You!

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