September 2024

NextGen SATCOM
Options & Use Cases

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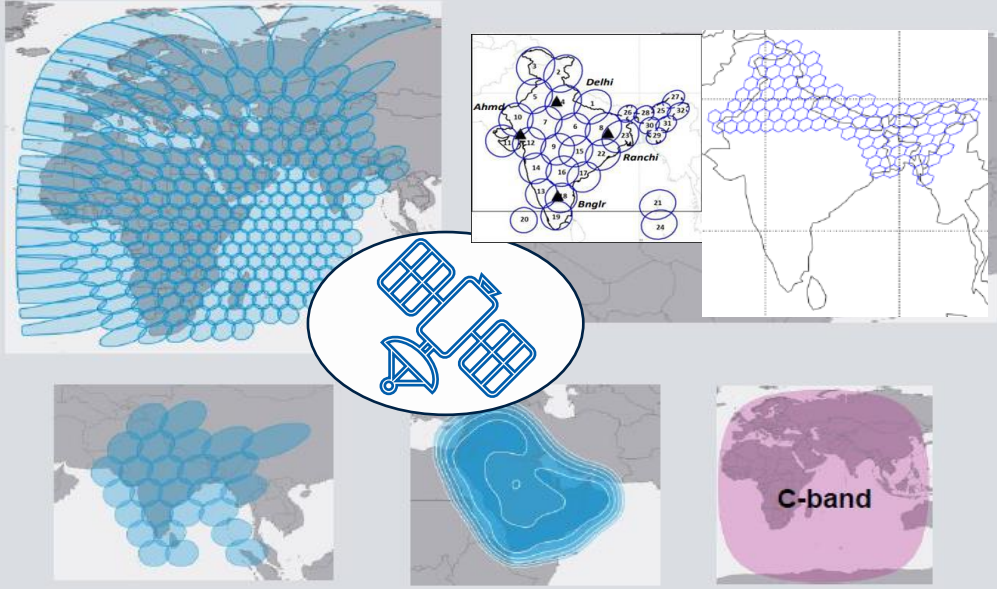
NextGen Satcom – Options

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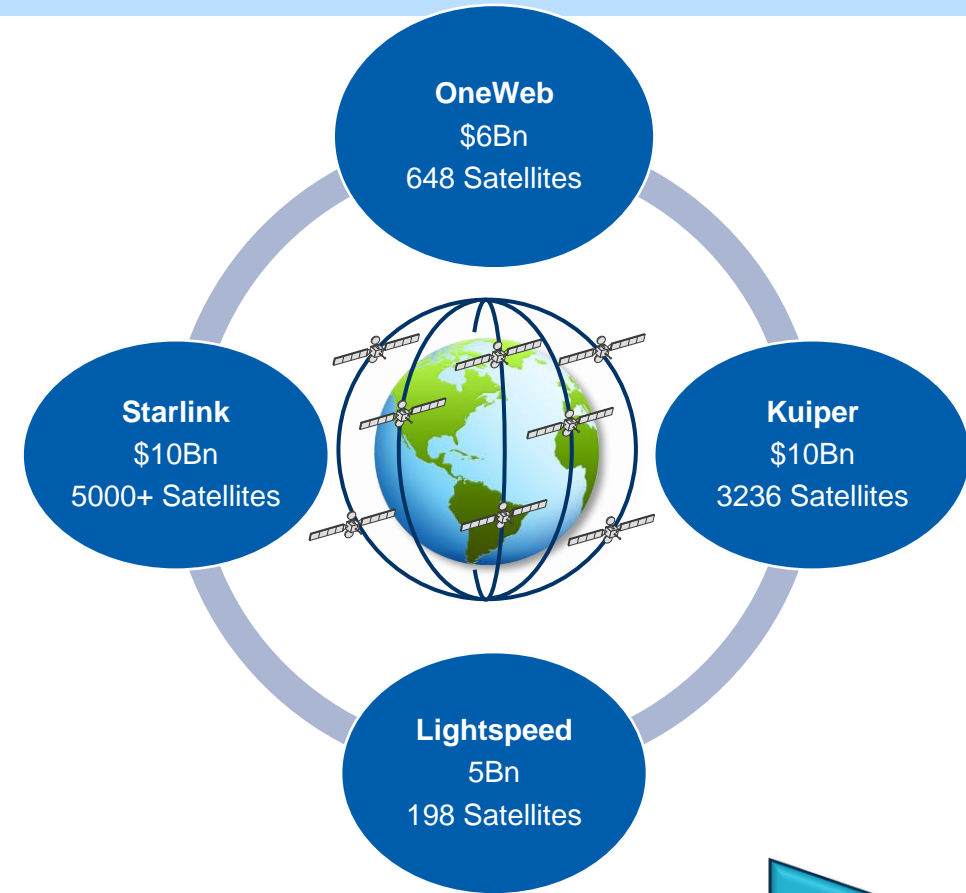# NextGen Satcom - GEO SD/VHTS & nGSO Constellations

GSO - HTS/VHTS/SDS Satellites

Example Coverage – Fully Adaptable on-orbit

C-band

- ❖ **Adjustable coverage and capacity on orbit following demand and mission requirements**
- ❖ **Power and bandwidth focused where demand is located**
- ❖ **Ku Widebeam and Ku HTS can simultaneously served**

nGSO - Constellations

OneWeb
$6Bn
648 Satellites

Starlink
$10Bn
5000+ Satellites

Kuiper
$10Bn
3236 Satellites

Lightspeed
5Bn
198 Satellites

Gbps → 1 Tbps+

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NextGen IoT : Satellite IoT Solutions

Offers Mobility & IoT solutions covering a full range of requirements

L-Band

Legacy IP Terminal
Ideal for SCADA and machine-to-machine (M2M) applications, including:

- Environmental Monitoring
- Pipeline Monitoring
- SmartGrid

S-Band

NextGen Global S-Band Network

- Digital 28 satellites for global S-Band LEO constellation
- 4200 PDT S-band terminal available today for EU service

Ku-Band

Pipeline monitoring : High-Reliability, ubiquitous connection is the ideal technology to monitor:

- Pressure
- Temperature
- Vibration
- Noise
- Tampering

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NextGen Satcom - Capabilities

Connectivity & Beyond

Global Coverage

Latency

Low Latency

High Speed Service

SLA
SERVICE LEVEL AGREEMENT

B2B Focused LEO service

Fiber Like Experience on Ground or in Air

Orbital Landscaping

GEO
Altitude : 35,786 Km

MEO
Altitude : 2,000 Km - 35,786 Km

LEO
Altitude : 160 Km – 2,000 Km
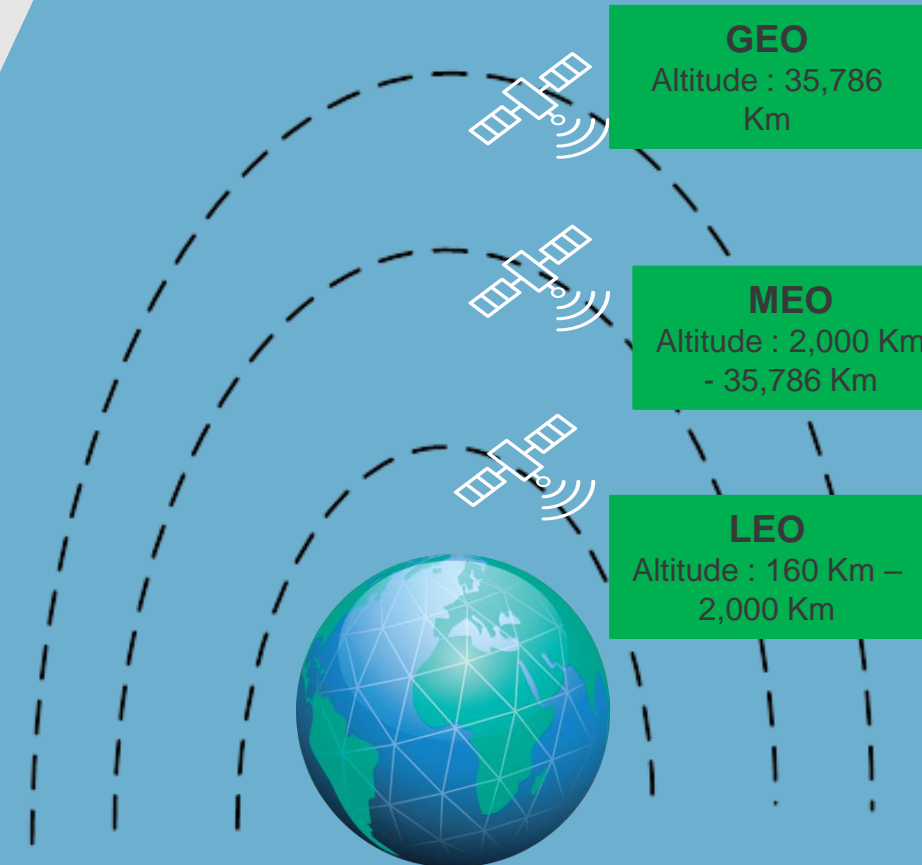
NextGen User Terminals – Completing ecosystem

Diverse form factor, higher performance, higher throughputs

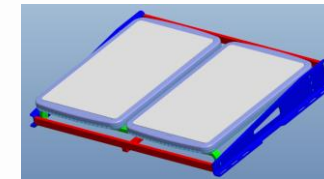| SEGMENT	LEGACY	NEXT GEN
LAND FIXED		
LAND MOBILE		
MARITIME		
AERO		

NextGen - NTN Powered by Standardization

Then...

Motorola Series 9500
First call 1998
Iridium LEO Network
16 Ounces (450 grams)
$900 MSRP
($1750 - today's valuation)

...and now

3GPP-Enabled Smartphone
iOS, Android, etc
Terrestrial & NTN
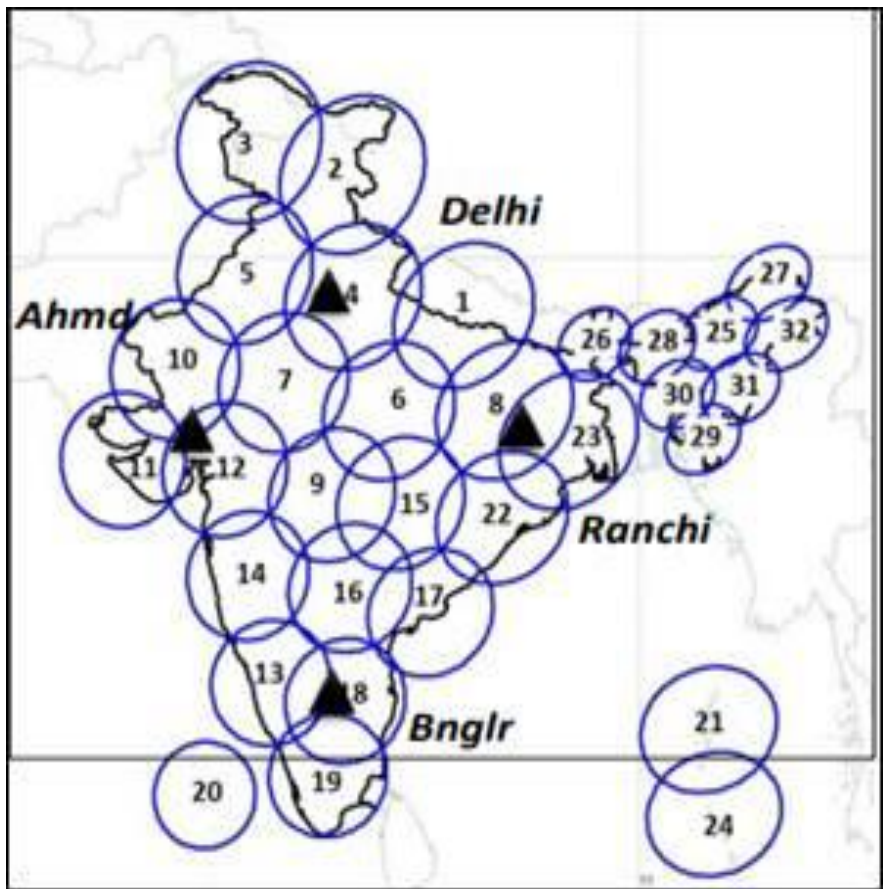
Satellite handsets have operated for decades. What has changed?

- Space now accessible by consumer-grade mass market devices
- Seamless accessibility between terrestrial wireless and satellite

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NextGen Satcom – Use Cases

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India HTS – Big stride for an-inclusive *Digital India*

High Performance Multi-Mbps Service - Powering new solutions across diverse segments

Rural Broadband

○ Lack of ● Plenty of

Segment	Ultra Rural Village (~50 users)	Rural Village (~100 users)	Large Community (250+)
Details	• Unserved village – 10 ~ 50 users • Solar Powered • Simplest & low cost of deployment. • Using WiFi enabled handheld devices	• Mid size villages - (50 ~ 100 users • Solar as Backup • Typically, on Gram Panchayat rooftop • Using WiFi enabled handheld devices • PSTN expansion an option	• Larger area covering (500+ people using mobile / broadband) • Bigger mast with Captive LTE/5G • Broadband access using WiFi enabled handheld devices • PSTN expansion an option
Coverage	~100 m	~ 1 Km	~ 7 Km

Landscape	QOS	ARPU	Area Density	Equipment Cost	Paying Capacity

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In-Flight Connectivity

- ✈ **Home like broadband in Air**

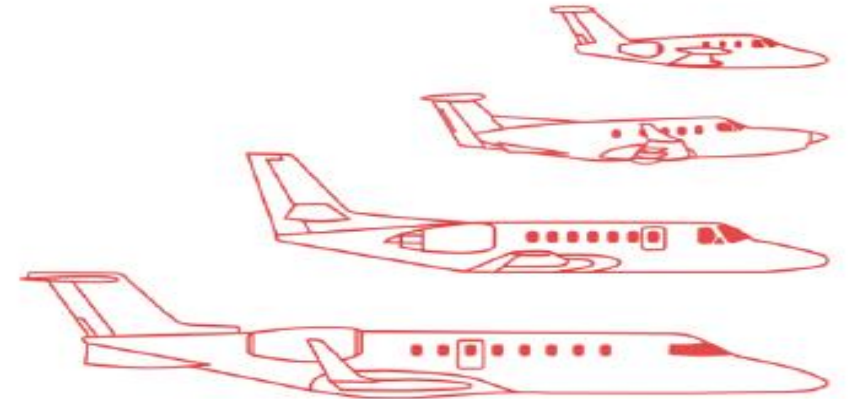- ☁ **Global Coverage – Gate to Gate connectivity**

- 📡 **100s of Mbps capacity per aircraft**

- 🪐 **Multi-Orbit options, lower drag factor**

- 🛰 **Satellites can follow the aircraft**

Entertainment, crew, cockpit, sensor data, maintenance, flight tracking, telemedicine, Work while flying ….. and many more

Direct Satellite-to-Device

5G NTN	Chipsets Integration of Satcom	3GPP R17 (Inclusion of Satcom)	Satcom – MNO Alliances	MSS Specific Constellations	Spectrum Sharing

Satellite IoT

Direct to Device
- SOS/Location/Find-Me
- Text and Rich Messaging
- Voice
- Internet Applications

Wideband Data

Defense & Government

Universal Coverage

IoT and M2M

Agritech | Connected vehicles | Industrial IoT | Fisheries | Smart-grid monitoring | Mining

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POWERING A
CONNECTED FUTURE