Secure Satcom: Enhancing Military Communications

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Gilat Proprietary and Confidential

DEFENSE AND GOVERNMENT SOLUTIONS

3 decades world leader in satellite communications

CBH

Cellular Backhaul

2G 3G 4G 5G

MOBILITY

Aero / IFC
Maritime
Land

BROADBAND

Enterprise
Consumer

DEFENSE

Fixed Networks
On-the-Pause (SOTP)
On-the-Move (SOTM)

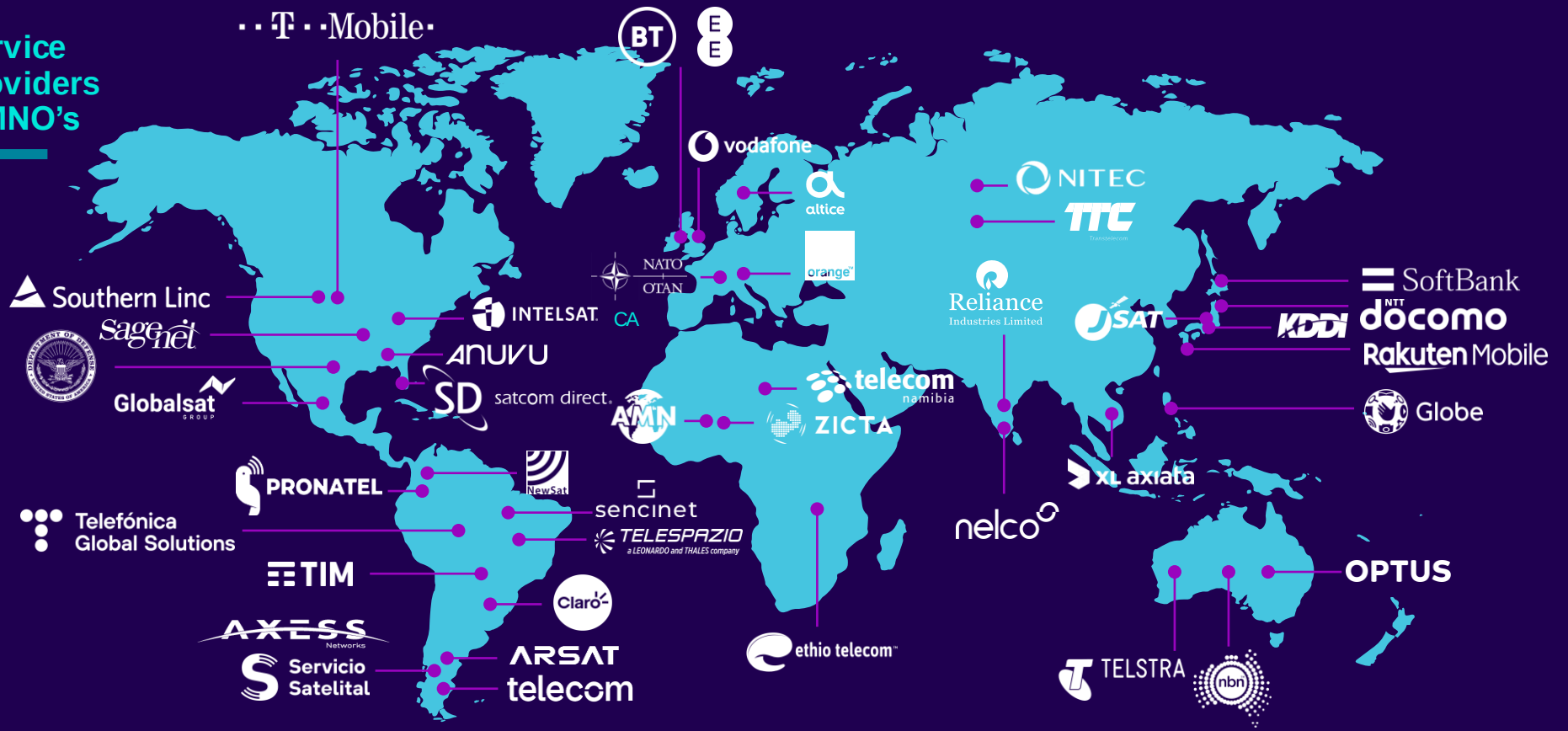
~1,200 Employees **1987** Founded **20** Sales Offices **7** R&D Centers **3** NOC Centers **GILT** NASDAQ/TASE

Natural Partner Bringing Real Value

Satellite operators

SES · INTELSAT · JSAT · hispasat · eutelsat · inmarsat · isro · THAICOM · AVANTI · OneWeb

Service Providers & MNO's



100+
Countries

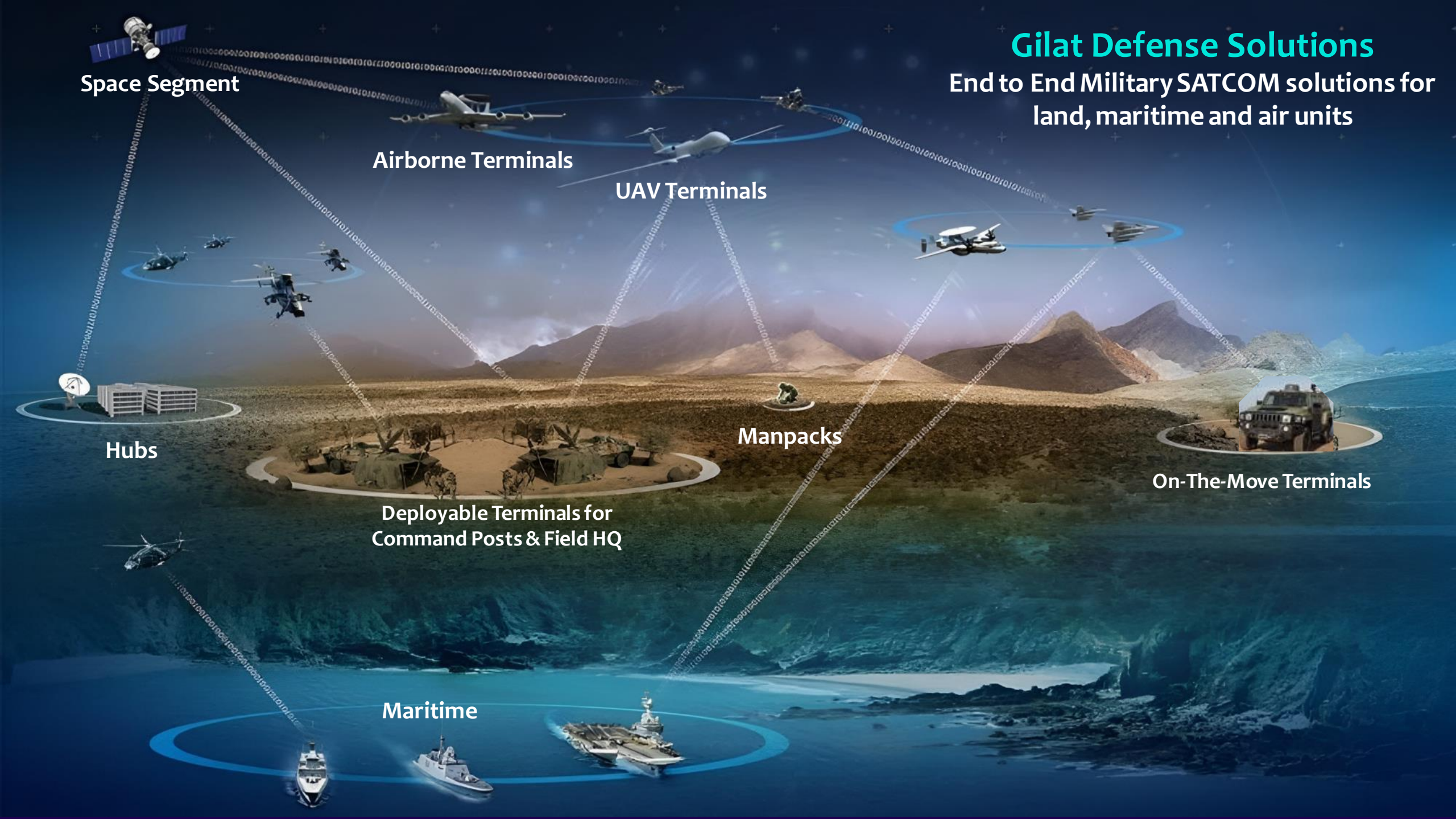
300+
Customers

100s of
Networks

> 1.7 Million
VSATs Sold

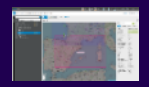
System Integrators

BOEING · GENERAL DYNAMICS · LOCKHEED MARTIN · Honeywell · AIRBUS DEFENCE & SPACE · L3 communications · Bell · SAFRAN


Gilat Defense Solutions
End to End Military SATCOM solutions for land, maritime and air units
Space Segment
Airborne Terminals
UAV Terminals
Hubs
Manpacks
On-The-Move Terminals
Deployable Terminals for Command Posts & Field HQ
Maritime

Ground Segment Solutions – Full Product Portfolio
End to End solution

VSAT Platform

TotalNMS

SkyEdge IV & SkyEdge II-c

Aquarius Family

Taurus Family

Capricorn Family

Gemini Family

Point to Point SCPC/MCPC Modem

GLT System

MLT-1000

GLT-1000

Aquarius SCPC

Wavestream Solid State Power Amplifiers

Matchbox

Microstream

Powerstream

Endurance

Aerostream

Antennas & Terminals

Aero and UAV

ESR 2030/2040

BR72

BRP60

Land-Mobility

ESA-M

ESA-L

Transportable

DKET 3400

DKET 3421

Satellite Transportable Terminal (STT)

Portables

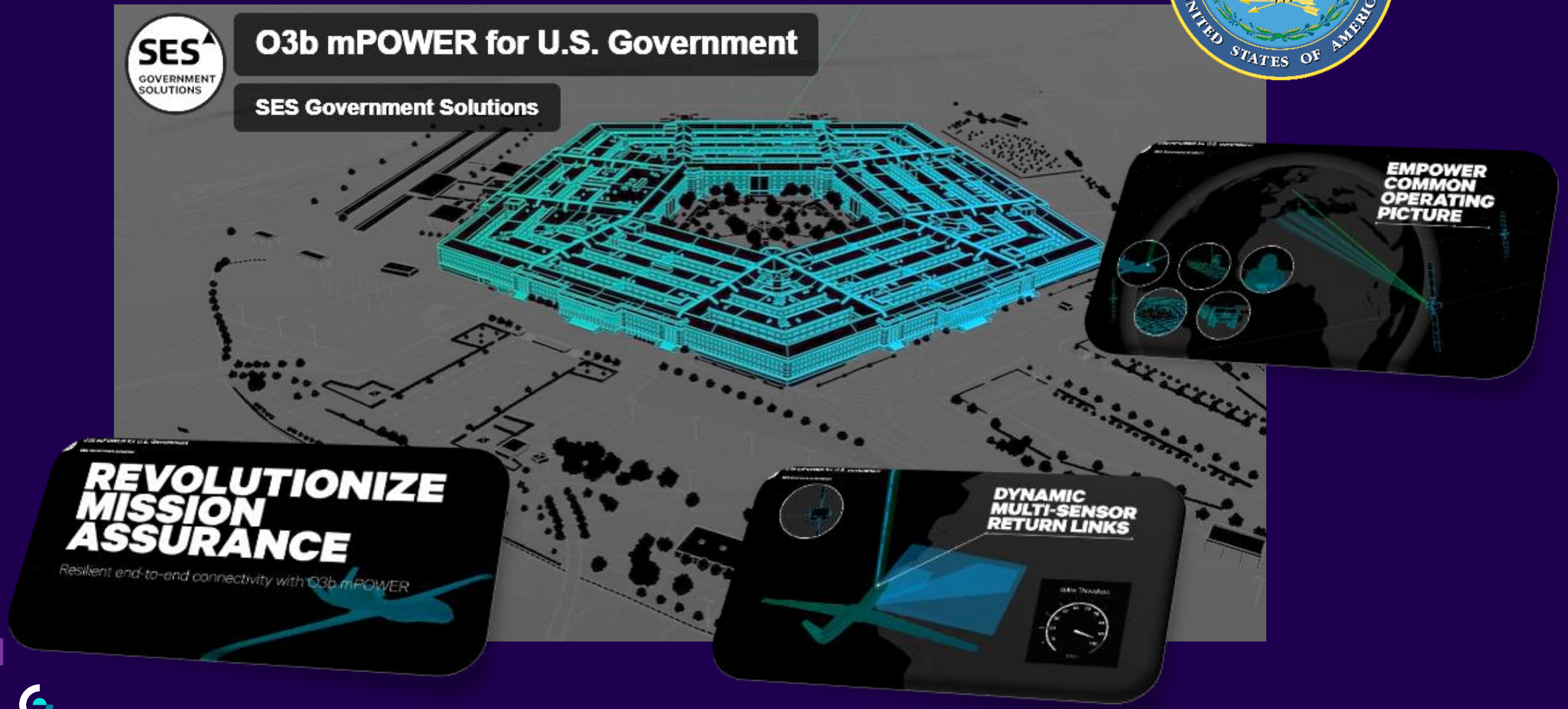
C-Series

Q-Series

ESA-Series

Multi Orbit Series

SKYEDGE IV Deployment plan by SES for the



Tactical Military Modem

A set of assembled, tested and qualified rack-mount , tactical and airborne modems (prototypes + pre-serial production)

- Secure communications:
  - Encryption: TRANSEC, AES-256 Layer 2
  - Link Resilience: Anti Jamming and Spectrum Monitoring
  - Secrecy: VLSNR
  - Anti tampering: HSM (HW Security Module) and Manual Zeroing functionality
  - Additional advanced security capabilities
- Specification:
  - SCPC, MCPC, Mesh
  - Advance LPI/LPD
  - SDR ASCM with VLSNR
  - Data rates: 32 kbps - 200 Mbps
  - NMS with NBI support and diversity
  - Mobility support
  - OpenAMIP and OpenBMIP support
- Supported by SkyEdge IV Elastix TotalNMS

Rack Mount Modem

Tactical Modem

Airborne Modem

Card

DataPath Offering Overview

- Center of excellence for SOTP and terminals – *thousands of systems in the field*
- MIL Grade certifications
- Supplier for US DoD, US Army, multiple NATO MODs
- FMF

Terminals
(CCT Line)

Custom Systems Integration
(DKETs, STTs, etc.)

Field Services & Support

Monitoring & Control Software

	Portable SatCom Terminals	Sat. Ground: Transportable Hubs & Gateways	Field, Operations & Maintenance Services	MaxView Monitor. & Control Software
Select Customers	MoD & Government (e.g., Japan, Europe)	US Army, USAF, General Atomics, SES	USSOCOM, USNORTHCOM	KSAT, NOAA (US), US Army

Mobile Hubs for Field Command Posts (HQ)

"ON-THE-PAUSE" SOLUTIONS FOR MOBILE HEADQUARTERS

- Fully integrated VSAT & Antenna solutions
- Customized Integration – Vehicle-mounted or Transportable
- Rapid & Quick Deployment – *"Click & Surf" – Fully automated*
- Easy Algorithm-Based Satellite Acquisition
- MIL-SPEC Design

UAV Antennas & Terminals

Gilat Defense Product Portfolio

BRP60

- SATCOM Terminal for Large UAVs
- 60cm Parabolic
- Ku/Ka band
- MLT1000A modem
- Weight < 23 kg
- EIRP: ~53 dBW
- G/T: 14/15.5 dB/K

BR72Ka

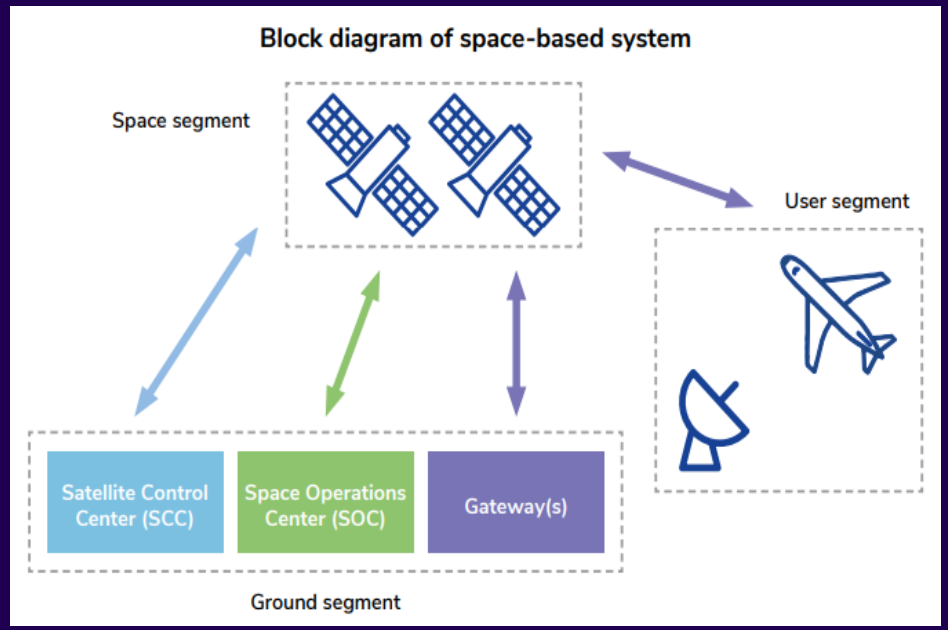
- Ka-band Panel type terminal for Small/Tactical UAVs
- 30cm Swept Volume; less than 5Kg (including modem)
- Advanced Design based on Composite Materials
- Successfully passed intensive testing by customer
- Fielded and in Operational use
- EIRP: 38 dBW
- G/T: 6 dB/K

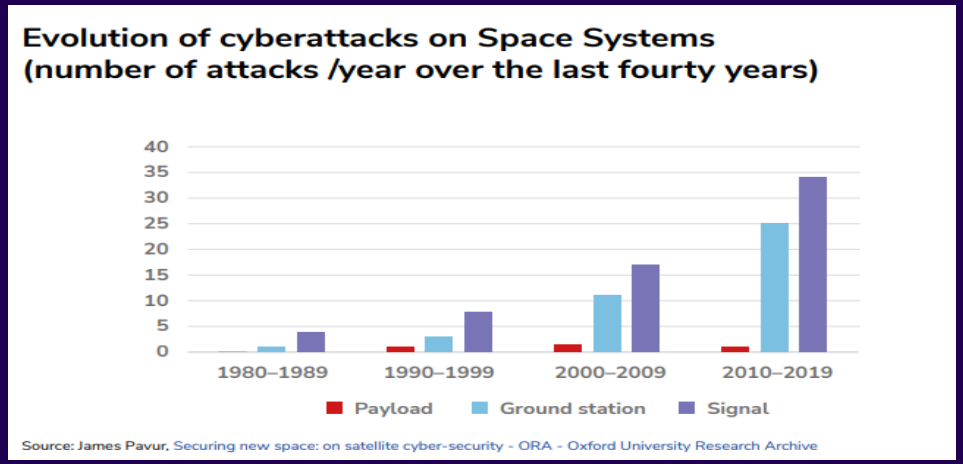
Secure Satcom

Broadl Blocks of a Satcom network

- Space Segment : Can be Jammed/Hacked/Physically Jammed
  - NGSO Systems (degraded services if some satellites are out)
  - Multi Orbit Satcom System with compatible Ground Infra
- Ground Segment
  - SCC (TT&C. M&C) – need to be secure (Physical Security)
  - Deploy in redundant modes
  - Incorporate Encryption & various security measures
- User Segment
  - The Level of security changes as per need
  - Considering it has to be flexible – interoperable : security become more complex

In addition to the three previously mentioned segments, ensuring the protection of the **interconnections between these segments** is also essential. Consequently, to guarantee the confidentiality, integrity and availability of any transmitted information secure SATCOM has to incorporate encryption and any other security measures to protect data from unauthorized access and interception.





Enhancing Battlefield Resilience - Cyber Security

Designed to support **I**nfrastructure **A**sset **Pre**-Assessment Program (IA-Pre), which is based on the following functionalities of NIST Special Publication 800-53 Rev 5 Framework:

- Identify
  - Inventory management, Secure development, regular penetration testing and Nessus scans
- Protect
  - Layered protection approach
  - Complete air interface encryption (TRANSEC / FIPS 140-3 Level 3)
  - Digitally signed SW for safe OTA upgrades
  - Separation of management & control from data flow
  - Hub Zero Trust
  - CIS Benchmark
- Detect
  - Syslog interface to customer's SoC/SIEM
  - Audit Trail
  - Intrusion Detection Alarms
- Respond
  - Root cause analysis and escalation procedures
  - Security monitoring tools NOC
- Recover
  - Complete backup and redundancy
  - Security Committee perform lesson learned sessions
  - Space ISAC membership

Enhancing Battlefield Resilience - Transec

- Transmission security features to protect the transmission medium, such as the satellite link, from unauthorized access or disruption.
- Transec encrypts system signaling and control massages over the air interface.
- Gilat Modem utilizes FIPS-140-2 standard for Transec
- Transec FIPS 140-2 is a module that can be added to the modem.

Enhancing Battlefield Resilience - Comsec

- Protection of the content of communication, such as voice, data, or video, from unauthorized access or interception
- COMSEC measures include encryption, decryption, key management, and access control to ensure the confidentiality, integrity, and availability of the information being transmitted.
- Gilat Modem uses industry-standard encryption algorithms (AES-256) to secure the content of communication
- The modem also uses X.509 certificates for authentication.

Thank You

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Gilat