



**HARRIS**  
**CAPROCK**<sup>®</sup>

**Managed Communications for the  
World's Most Critical Operations**

[harriscaprock.com](http://harriscaprock.com)

## ***Mission Critical Communications For Commercial & Government Markets Worldwide***



***Leader in design, development and operation of highly-reliable, secure communications systems and information networks for voice, data, imaging and video***

- \$5.5 Billion U.S. company based in Melbourne, Florida
- Publicly listed on NYSE (ticker: HRS)
- 15,000+ employees located in 50+ countries around the world



# The End-to-End Communications Solutions Arm of Harris Corporation



## RF Communications

Tactical and land mobile radios, systems and networking applications for global Defense, Security and Public Safety markets



## Government Communications Systems

Technology and systems integration for Defense, National Intelligence and Federal/Civil markets



## Information Technology Services

Systems design, professional services, and operations and maintenance for large scale government IT programs



## Harris CapRock Communications

End-to-end managed communications services to critical operations in remote and harsh locations for Energy, Maritime, and Government

***Trusted at the Intersection of Life & Data***

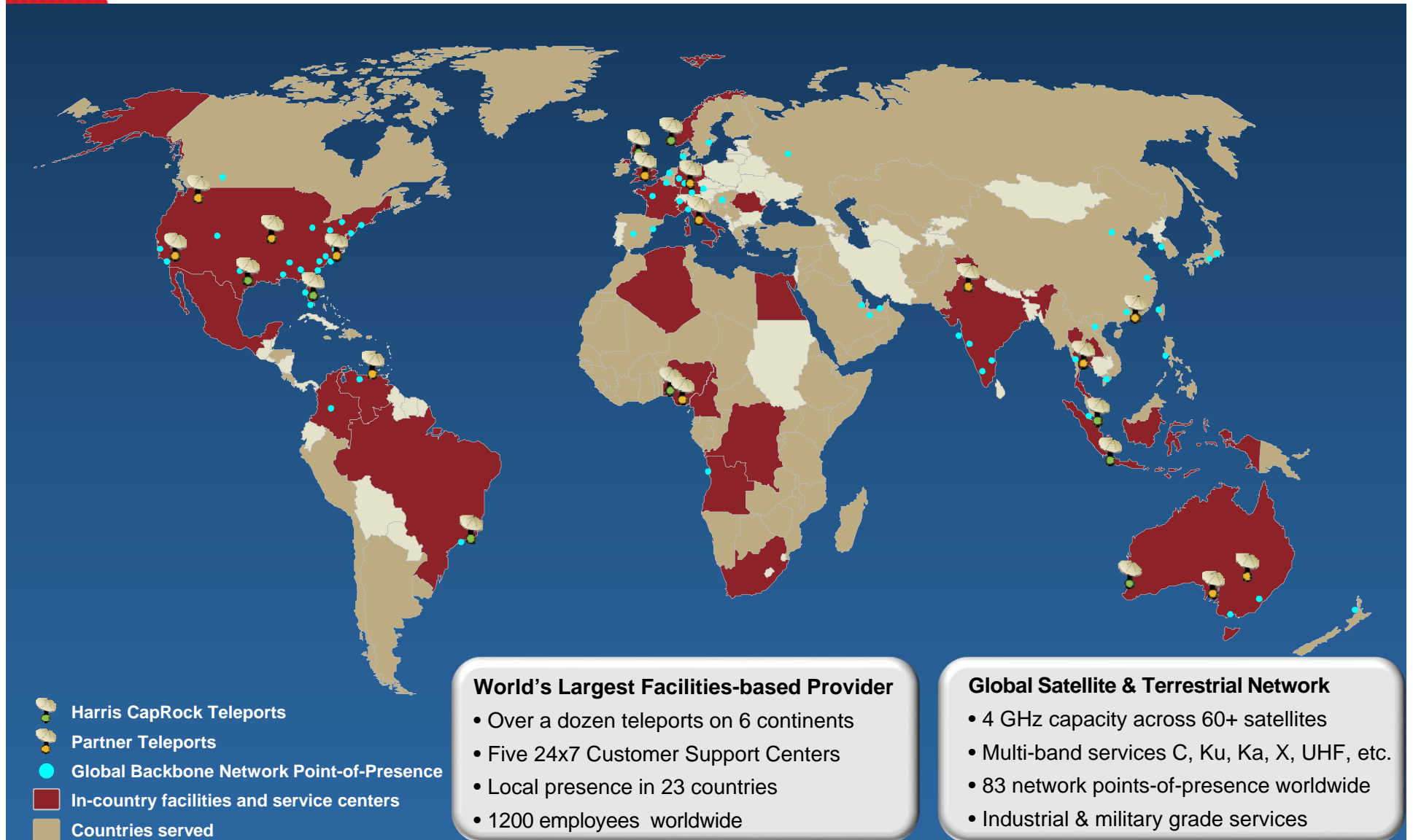
Our Customers Operate in Environments  
Where the Mission Simply Cannot Fail



***Harris CapRock Communications*** is the world's most trusted provider of fully managed, end-to-end communication solutions for operations in remote and harsh environments

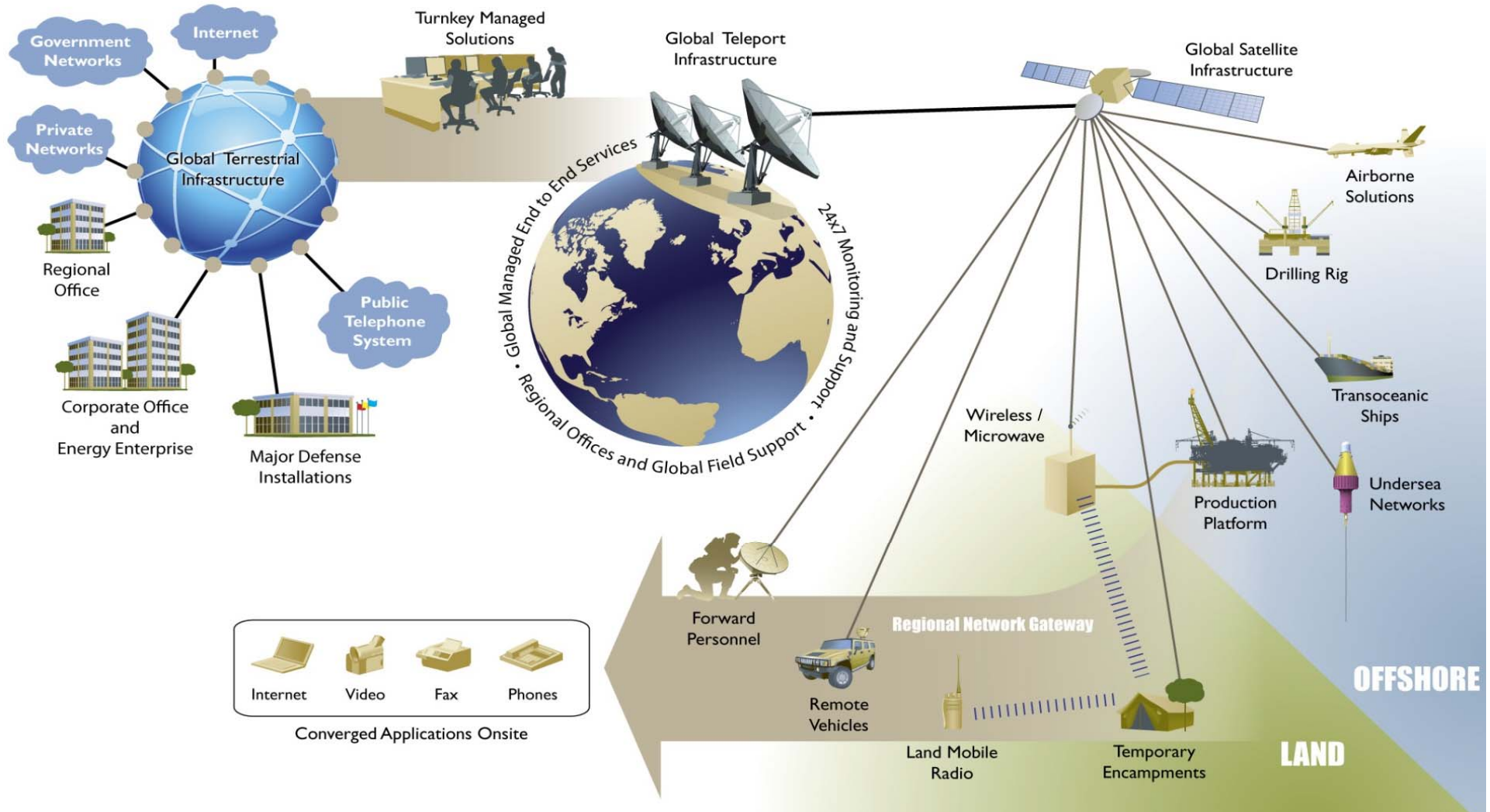
- **Mission-Critical Communications**
- **Converged Voice, Video and Data**
- **Highly Reliable and Secure Connectivity**
- **Global Coverage and Support**
- **Rapid and Mobile Deployments**

# Self-Owned & Operated Infrastructure Supports Customers Globally



# True End-to-End Communications

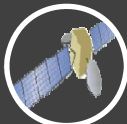
## Putting It All Together Into a Managed Network



- Highly Specialized End-to-End Solutions
- Self-owned & Operated Infrastructure




# Each Solution is Tailored to the Remote Site Application Environment


**Managed Communication Services**

- Satellite communications
- Subsea fiber management
- Terrestrial connectivity
- Microwave & wireless services
- Disaster recovery solutions




**Professional and Technical Services**

- Robust IT services
- Certified specialists
- Contract/dedicated labor
- Teleporting services
- On-site maintenance



**Specialized Communications Equipment**

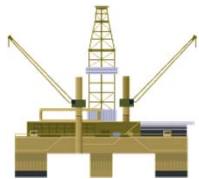
- Integrated products
- Ruggedized electronics
- Proprietary VSATs
- Dedicated R&D team



**Integrated Solutions**

- Communication networks
- Information technology solutions
- Turnkey project management
- Design through commissioning
- Remote assets, onshore/offshore

## Single Source for Solutions Designed for Unique Site Requirements



*Secure multi-tenant capabilities  
New build outfitting  
Satellite license facilitation*



*Crew morale solutions  
Asset tracking  
Automatic beam switching*



*COTM systems  
Follow me networking  
Rugged electronics packages*



*Man-packable systems  
Military-grade services  
LMR radio solutions*

# Why Harris CapRock is the Right Communications Partner



## Harris CapRock:

- ✓ **SUPPORTS** more than 4,000 VSAT sites at operations worldwide, making it the world's largest provider of fully managed VSAT services to extreme environments.
- ✓ **LEVERAGES** its status as the single largest commercial buyer of satellite capacity, with a portfolio of 4 Gigahertz across 60+ satellites.
- ✓ **CONNECTS** more government customers to the Global Information Grid than any other service provider.
- ✓ **MANAGES** end-to-end communications services on more than 300 vessels worldwide.
- ✓ **DELIVERS** reliable communications to every ocean region using the industry's largest and most comprehensive platform of satellite and terrestrial services.
- ✓ **PROVIDES** turnkey voice, video & data applications for vessels ranging from tankers to large cruise ships.
- ✓ **DESIGNS, DEPLOYS & MAINTAINS** subsea environmental & oil field monitoring solutions, with power and communications networks operating at over 3,000 meters of depth.
- ✓ **OWNS & OPERATES** extensive global infrastructure including teleports on six continents and 83 terrestrial points of presence (POP).
- ✓ **MANUFACTURES** more stabilized antenna systems than almost any other equipment provider.



- **Industry Leading Solutions for When Communications Are Not Optional**

- Complete end-to-end satellite, wireless, and terrestrial communications
- Custom designed networks and pre-packed off-the-shelf services
- Exclusive dedication to industrial and military-grade solutions

- **Facilities-Based Service Provider Invested in Customer Mission**

- World's largest self-owned and operated infrastructure for remote communications
- Resilient global network with built-in redundancy and diversity for peace of mind
- In-house design, engineering, manufacturing, and integration for quality control

- **Reputation for Performance, Stability and Delivering Results**

- 30+ years past performance in world's most difficult environments
- Unmatched *AssuredCare*™ customer service program
- Two time award winner for World Teleport Association's "Operator of the Year"



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## Vertical Market Solutions and Customer Case Studies

[harriscaprock.com](http://harriscaprock.com)

# Different Antenna Types for Different Application Environments



	Portable	Deployable	Stabilized	Fixed	C	Ku	X	Ka	UHF
Energy		↑ .96 – 2.4 Meter <i>"Auto Aquire"</i>	↑ 1.4 – 2.4 Meter SeaTel or SpaceTrack <i>"Radome"</i>	↑ 2.4 – 11.3 Meter Satellite Earth Station	X	X		X	
Government	.45 – 1.3 Meter <i>"Man-pack"</i>	↓			X	X	X	X	X
Maritime			↓	↓	X	X		X	





# Energy Case Study: Transocean

## *World's Largest Fleet of Deep Water Drilling Vessels*



- **Requirement**

- 150+ vessels operating worldwide
- Large scale semi-submersible drilling rigs and ships
- Complete voice, video and data applications

- **Challenges**

- Support global operations
- Frequent moves, adds and changes
- Tough marine and industrial environment
- Extreme temperatures and conditions
- Zero down-time tolerance

- **Harris CapRock Solution**

- Complete turn-key managed service solution
- All shipboard equipment included
- Stabilized satellite antenna systems
- On board IT system integration
- Installation and on-site maintenance
- C and Ku satellite bandwidth
- 24 x 7 proactive network management



Transocean Offshore Drillship

# Maritime Case Study

## *Deployed Oceanic Data Collection Service*



- **Requirement**

- Implement surface and undersea monitoring system
- Collect complex array of acoustic and seismic measurements
- Uplink data collected in real-time

- **Challenges**

- Survive and perform under all ocean conditions
- Solution must be self-sustaining for extended periods at sea

- **Harris CapRock Solution**

- Developed turnkey solution providing communications technology, engineering services and operations support, leveraging capabilities of multiple sub-contractors:
- Tyco – cable manufacture and deployment
- OceanWorks – subsea junction box
- ODI (Ocean Design) – subsea optical and power connectors
- Schaffer – power supply development
- OSI (Ocean Specialists) – submarine cable consultants
- Phoenix Intl – ROV and diver support



OCB buoy deployed off coast Cyprus



Anode, undersea cable and nodes

# Case Study: U.S. Marine Corps

## *Rapid Deployments with Portable SATCOM*



- **Requirement**

- Broadband communications for deployed units
- Support for forward operating bases
- Converged voice, video, and data
- High resolution aerial surveillance imagery

- **Challenges**

- Multiple theaters of operations from CONUS to SWA
- Rapid deployments with little advanced notice
- Traditional government procurement too slow
- Security requirements associated with mission

- **Harris CapRock Solution**

- Custom “bandwidth pool” specific to USMC
- Bandwidth can move across regions and bands
- Online portal enables procurement in 5 days or less
- Monitoring tracks usage, pool availability, response time, and overall bandwidth efficiency



U.S. Marine Corps on deployment



# Case Study: Unmanned Aircraft Systems

## *General Overview of Services Provided*



Harris CapRock's satellite communications solutions support Department of Defense unmanned aerial system missions across the globe. Harris CapRock provides more than 610 MHz of commercial Ku-band capacity to the DoD in support of UAS missions, enabling aerial photography, videography and air attacks without risking troop casualties.

- **Requirements**

- UASs require increasing throughput to support high-definition video transmission
- Most UAS platforms require two-way communications
- Today's COMSATCOM-enabled UASs rely primarily on commercial Ku-band

- **Challenges**

- Uplink sites and UASs must reside in the footprint(s) cast by the same satellite.
- Not all satellites have footprints that overlap, so uplink sites are limited in the quantity of satellites they can connect to
- Because UAVs have small antennas and large throughputs, only a small percentage of satellites are capable of fulfilling the requirement
- Although there is an over-supply of global capacity, there are bandwidth shortfalls in many locations, e.g., Ku-band in SWA



- **Harris CapRock Solutions**

- Provide more than 610 MHz of commercial Ku-band capacity to the DoD in support of UASs
- Awarded a contract to provide services to lower ground station look-angles for UASs
- Awarded a contract to identify Ku-band COMSATCOM gaps across the globe for UASs and recommend ground station locations for mitigating the gaps
- Honored with a U.S. flag flown at the home base for some of the Army's Warrior Alpha UAS; Given in recognition of Harris CapRock's perseverance, dedication and commitment to the customer

# Terrestrial Case Study: DATS

## Delivering DISN/GIG Terrestrial Circuits to DoD Customers



The U.S. Government's DISN Access Transport Services contract is a network built on Harris CapRock's global terrestrial infrastructure. Harris CapRock developed a purpose-built network that integrates Defense installations onto the DoD's backbone network, interconnecting DoD and intelligence facilities throughout the world in as few as three hours.

### Requirement

- Provide DISN/GIG interconnection circuits to all DoD customer site in eastern United States
- Bandwidth (3KHz to OC-192) to 400+ MILDEP sites
- 4 Regions, collectively valued at \$3B over 10 years

### Challenges

- Rapid turn-up and turn-down of circuit services
- On premise installation coordination
- Management of multiple terrestrial circuit providers
- Cohesive network management across thousands of circuits

### Harris CapRock Solution

- Develop a Managed Aggregation Solution
- Create a “private network” design for optimal performance
- Rapid provisioning with flexible reconfiguration
- Improve overall availability and reduced provision costs

