HiSeasNet 2.0
2015 Review

Kevin Walsh
Scripps Institution of Oceanography
kwalsh@ucsd.edu

RVTEC 2015 - Miami
HiSeasNet 2015 Transitions and Highlights

- HiSeasNet Team Transition
- Network infrastructure Transition
  - New Q-Flex modems fully fielded on ships and shore
  - Bandwidth increased 4X at 2X price
  - All IP Architecture – no more serial interfaces
- Comparison to U.S. Navy Commercial SatCom
- Network Operations and Support Transition
  - Shared situational awareness
  - Matrix Team Support Structure
- HiSeasNet Future Directions
  - Move from development phase to mature operations
  - Requirements driven

RVTEC 2015 - Miami
Steve Foley – Heart and Soul of HiSeasNet
Gentleman Farmer

- Architect, Engineer, and User Support for HiSeasNet for 13+ years
- Shipboard Technical Support Veteran
- Once an HiSeasNet Veteran – Always a HiSeasNet Veteran
- *Semper fi*
Please Be Patient

*Patience is something you admire in the driver behind you, but not in one ahead.*

Bill McGlashen
HiSeasNet 2015
4X Performance Increase ++ IP

HiSeasNet Operational View - 2015

Earth Station

1-2 Gbps Earth Station router(s)

ViaSat PCMA cancellers

Internet2 and Commodity Internet

Various home institutions

Tunnels to home institutions

Satellite Communications Network
192.168.96.128/25

1-2 Gbps

Ku-band Beam 1 (SatMex 8)
768kbit/s

Ku-band Beam 2 (SatMex 8)
1Mbit/s

C-band POR (IS-23)
2Mbit/s

C-band AOR (IS-23)
2Mbit/s

Ku1 clients

Ku2 clients

AOR clients

POR clients

Up to 5Mbit/s ship possible
2015 HSN Architecture!

UC San Diego

RVTEC 2015 Miami
HiSeasNet Compared to Navy

Navy SATCOM Migration

Commercial Broadband Satellite Program

Inmarsat 128 kbps
CWSP 2 Mbps
FLV USC-69(V)2
Range of .5-4 Mbps
SSV USC-69(V)1
ULV USC-69(V)3

SOURCE: Communications Program Office, PMW-170
http://hiseasnet.ucsd.edu/customer/
HiSeasNet Support Team

HiSeasNet Support Line (858)822-3356 hiseasnet@ucsd.edu

RVTEC 2015 – Miami
HiSeasNet 2.0 – 4 X Bandwidth ++ IP

What’s Next?

- Delivered 4X increase in bandwidth – all IP
- No surprise – ships use it
- What if another 2X?
- Target objective – 15 Mbit?
Take Aways for HiSeasNet 2.0

- New Q-Flex modems fully fielded on ships and shore
  - Bandwidth increased 4X at 2X price
  - Scalable Bandwidth Expansions
  - Enables new capabilities for scientific users
- All IP Architecture – no more serial interfaces
  - Enables better remote support, monitoring and measurement
  - Leveraging UC San Diego and CENIC/I2 network infrastructure
- Matrix Staff Support – Mature operations posture
  - Leveraging skills and knowledge of staff across projects
  - Leveraging collaborative integrated systems management
  - Shared situational awareness and
  - Rapid response 7 days a week best effort
- HiSeasNet delivering mainstream maritime SatCom services tailored to Oceanographic research community
  - Future development to align with user requirements
Thank you for your attention.