

HiSeasNet
Any Ocean Any Data Any Time

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HiSeasNet status update 2018:

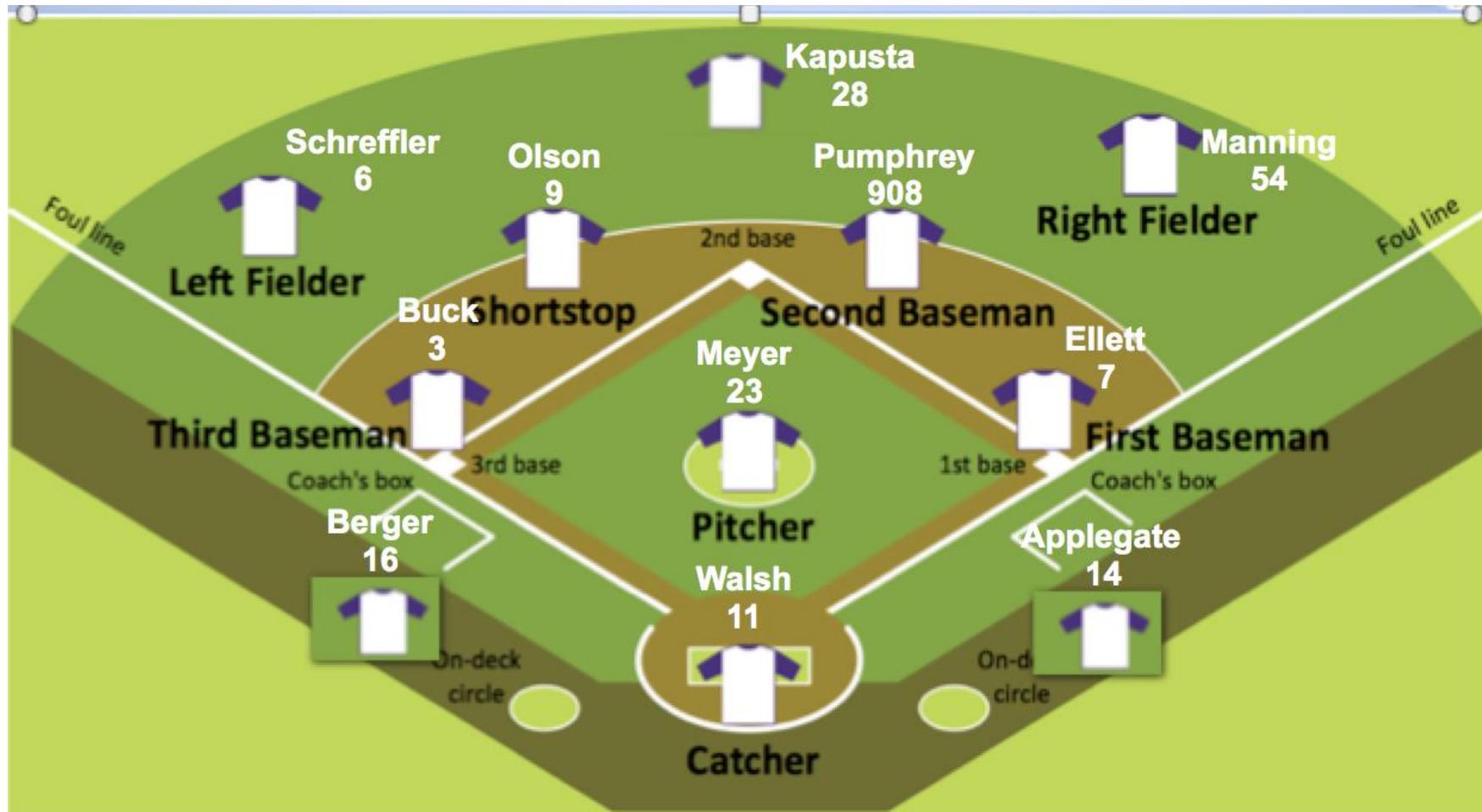
- The HiSeasNet Project in brief
- Support team
- Ships Served
- Collaborative Customer Support customer access the system health
- Systems of Systems Operation with standard work flow practices
- Incremental progress and bandwidth expansions
- What's next: Life cycle replacements and engineering for uninterrupted Internet access

HiSeasNet – 5 earth radii View



- UC San Diego - SIO SOMTS based project to bring full-time, scalable bandwidth Internet connections to ships at sea in the University-National Oceanographic Laboratory System (UNOLS) community.
- Currently twelve ships:
 - Two with C and Ku systems, Six with C, 3 with Ku only
- Lease dedicated space segment on global C-band, and Ku footprints that cover the majority of the Atlantic, Pacific and Indian Oceans
- Use five satellites: IS-23 (Atlantic), IS-34 (Atlantic), IS-18 (Pacific), Intelsat Galaxy 18, IS-17 (Indian)
- Operate and maintain the earth station on the roof of San Diego Supercomputer Center at UC San Diego
 - Two 7.2 meter dishes for C-band and one 3.8 meter Ku-band
 - Network Access Point for commercial ISPs, CENIC, Pacific Wave, and Internet2

HiSeasNet Support Team



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

Incremental Progress 2018



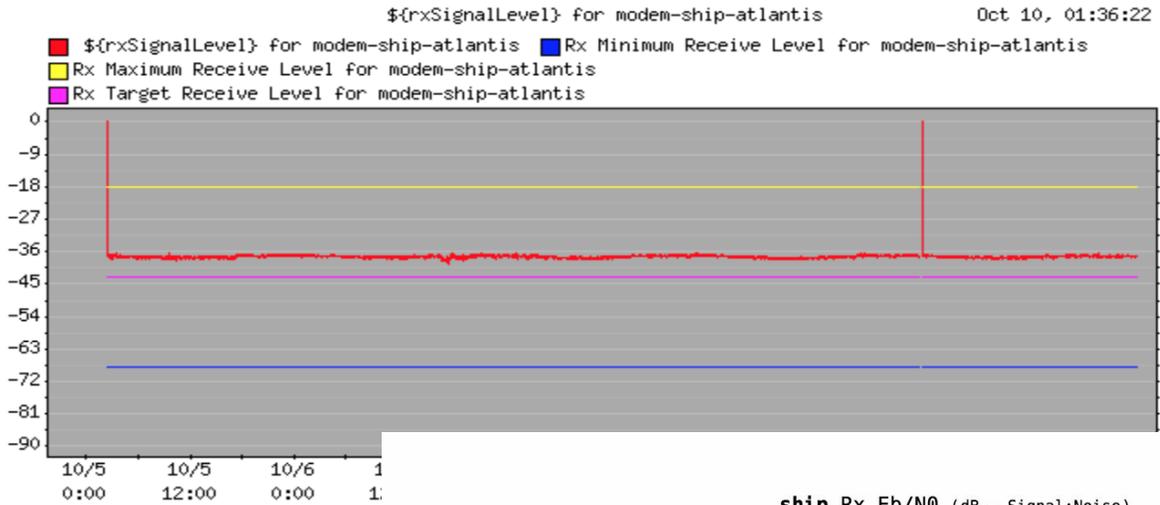
- Commissioned SeaTel 9711 IMA C/Ku for R/V *Thomas G. Thompson*
- Upshot: All ocean class ships capable of 25 Mbit bi-directionally*
- Improved time to solution for bandwidth expansions:
 - R/V *Thomas G. Thompson* for Brothers Volcano
 - R/V *Roger Revelle* for cabled array in Eastern Pacific
 - R/V *Sally Ride* for cabled array in Eastern Pacific
 - R/V *Sikuliaq* in Beaufort Sea
 - R/V *Atlantis* seamount dives in Eastern Pacific
- Implemented teleport service for Galaxy 18 in North Pacific
- Implemented teleport service for IS-17 in Indian Ocean
- Improved matrix support for HiSeasNet staff resources

* Based upon funding for space segment

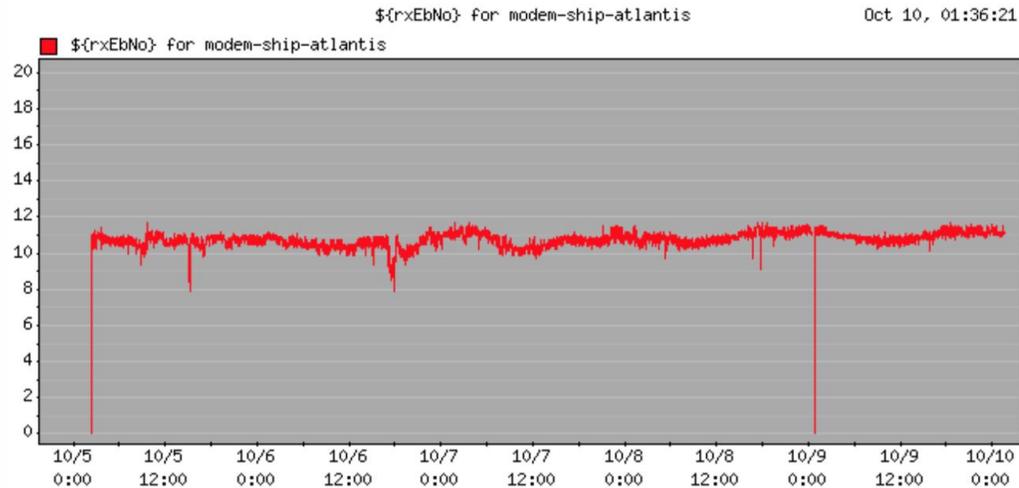
HiSeasNet Customer Informational Graphs



ship Rx Signal Level (dBm)

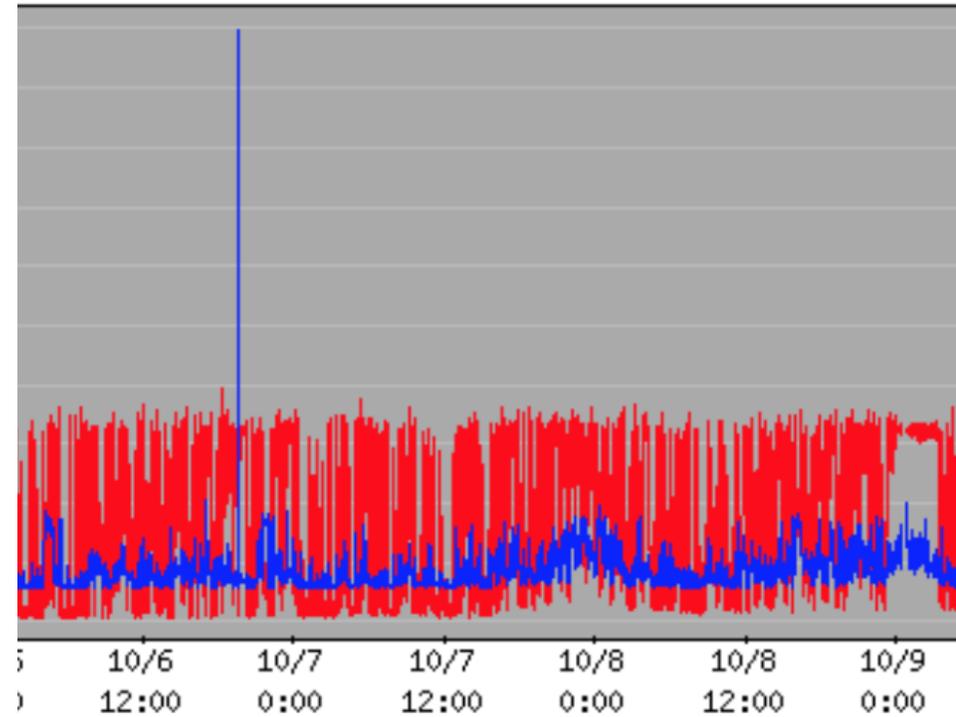


ship Rx Eb/N0 (dB - Signal:Noise)



ship Bytes/second (bit/second ÷ 8)

bytes per second for modem-ship-atlantis
for modem-ship-atlantis [4] - "eth0"
for modem-ship-atlantis [4] - "eth0"



Slack – Collaboration and Situational Awareness



Kevin Walsh 09:36
OK - I see bits flowing
does it seem back to normal for you?

Ethan Roth 09:37
yeah starting to see traffic
so far
was great having that bandwidth boost the last cruise

09:38 HSN link was solid just about the whole time



Kevin Walsh 09:40
AoK - the amount you had last cruise is a step in the right direction for the CIR we are asking for.
Hope the post-cruise reports are favorable and good science was had by all.
Will catch up with you all later.

Ethan Roth 09:41
ok we're done right?

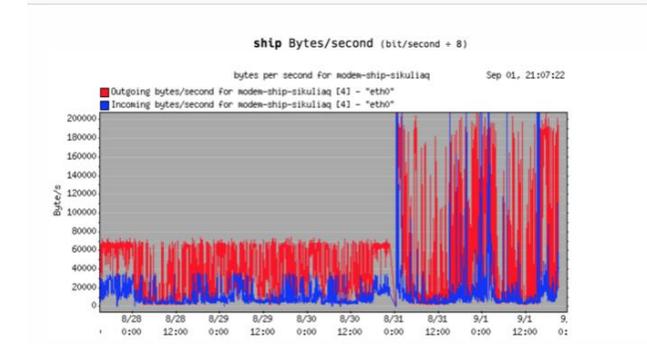
Kevin Walsh 09:41
yes - we are done for now.

Ethan Roth 09:41
see you at inmartech

Kevin Walsh 09:41
AoK - take care.

Ethan Roth 09:41
signing off

Kevin Walsh 14:08
e you guys have left the pier - I see a difference -
sted image at 2018-09-01, 2:08 PM ▾



Sunday, September 30th

Kevin Walsh 08:01
e you here -
sted image at 2018-09-30, 8:01 AM ▾

Position Received:
5 minutes ago (2018-09-30 14:55 (UTC))

Vessel's Local Time:
2018-09-30 06:55 (UTC -8)

Area:
ALASKA - Bering Sea

Latitude / Longitude:
64.449° / -165.509°

Status: **Stopped**

Speed/Course:

Google Map data ©2018 Google

Industry Standard Work Flow Practices



HiSeasNet / HSN-1113

Engineering support for new antenna system on R/V Atlantis 2019 yard period

13 of 116
[Return to sea](#)

- Edit
- Comment
- Assign
- More ▾
- Start Progress
- Close Issue

- Share
- Export

Details

Type: Task Status: **OPEN** ([View Workflow](#))
Priority: Major Resolution: Unresolved
Component/s: [R/V Atlantis](#)
Labels: [atlantis](#)

People

Assignee: Walsh, Kevin P.
Reporter: Walsh, Kevin P.
Votes: 0
Watchers: 2 [Stop watching this issue](#)

Description

Atlantis is going into the yard and wants to do the Revelle style mast modification and upgrade their antenna system to 9711 IMA in 2019. There will be a range of sub-tasks to support this effort.

Dates

Created: 13/Jul/18 12:17 PM
Updated: 1 week ago

Attachments

Drop files to attach, or [browse](#).

Development

[Create branch](#)

Agile

[View on Board](#)

What's Under Consideration 3 to 5 Years?



- Life Cycle Replacements
- More bandwidth for C and Ku
- Pacific Ku service for Earth Station
- Dual radome treatment for R/V *Neil Armstrong*
- Dual radome treatment for R/V *Sikuliaq*
- Life cycle C/Ku upgrade for R/V *Roger Revelle*
- Life cycle C/Ku upgrade for R/V *Atlantis* with “Revelle-style” radome placement
- Next generation antennas for Ku ships
- Prototype testing of LEO satellites
- Engineered and staged consolidation of primary and secondary satellite systems
- Upshot: Increased performance and uninterrupted Internet access for all ships is possible

Thanks to our resource sponsors



Thanks for your attention!



“Captain – The crew were given the choice of better food or better Internet.

All but the cook chose better Internet.”

-Chief Mate Quicksort, RV Petasail