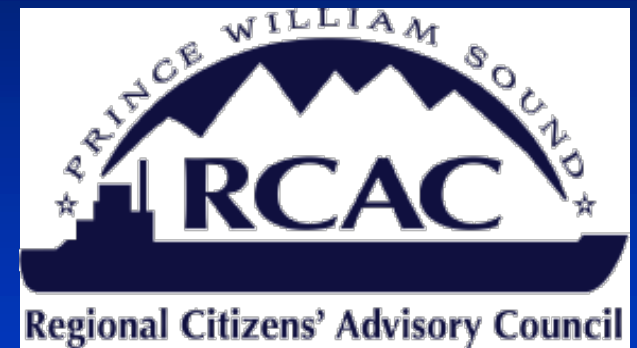




Complementary Objectives

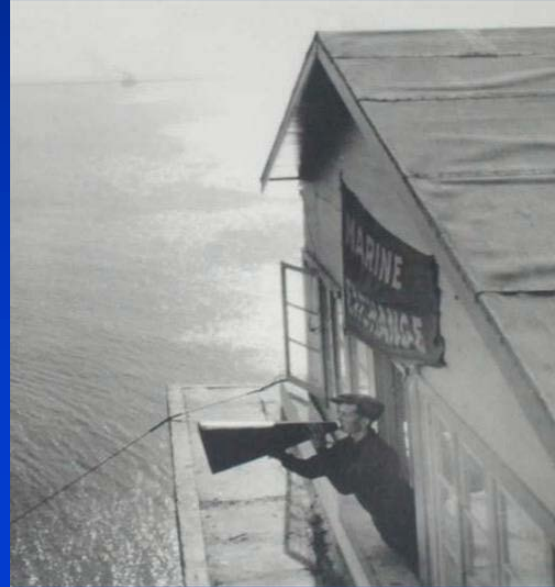
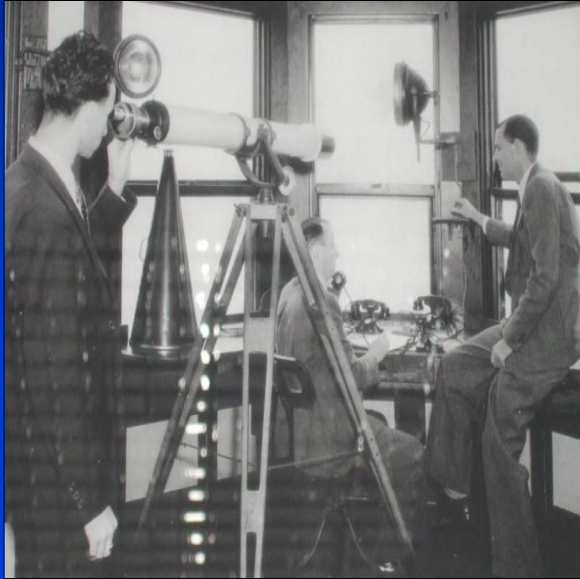


Marine Exchange of Alaska

Captain Steve White, U.S. Coast Guard (Retired)
Executive Director

Ahoy!

Marine Exchange History





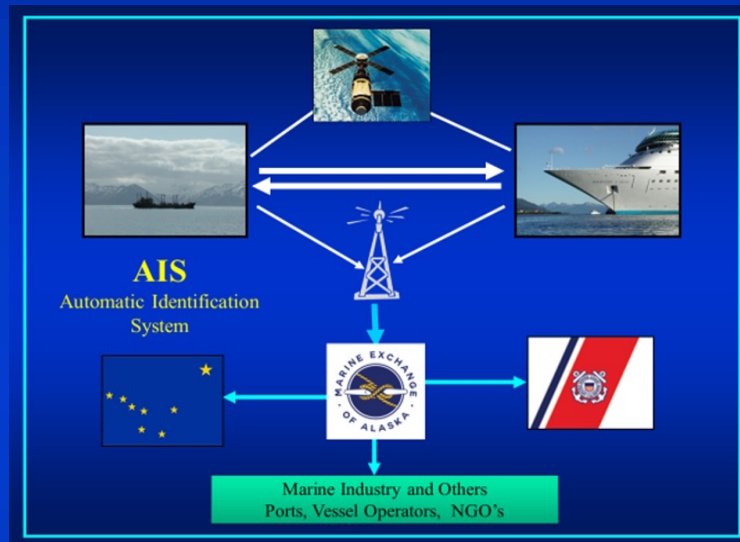
TODAY

Marine Exchange of Alaska 24 Hour Operations Center

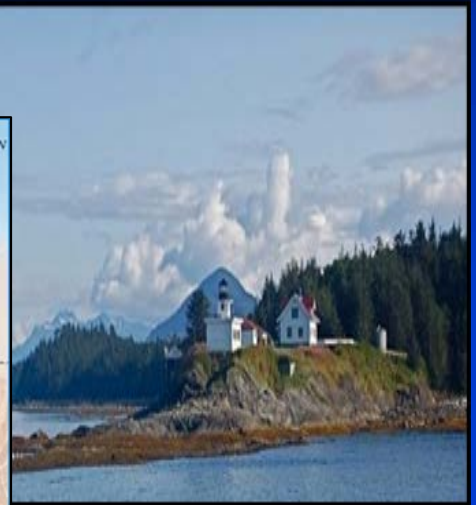


Marine Exchange of Alaska (MXAK)

Utilizes most current technology and maritime expertise



The Technology: Marine Safety Sites



Transmitting MSI (Marine Safety Information) over AIS Shore Stations

Transitioning from MDA to MDM





IALA Recommendation: R0126 (A-126)

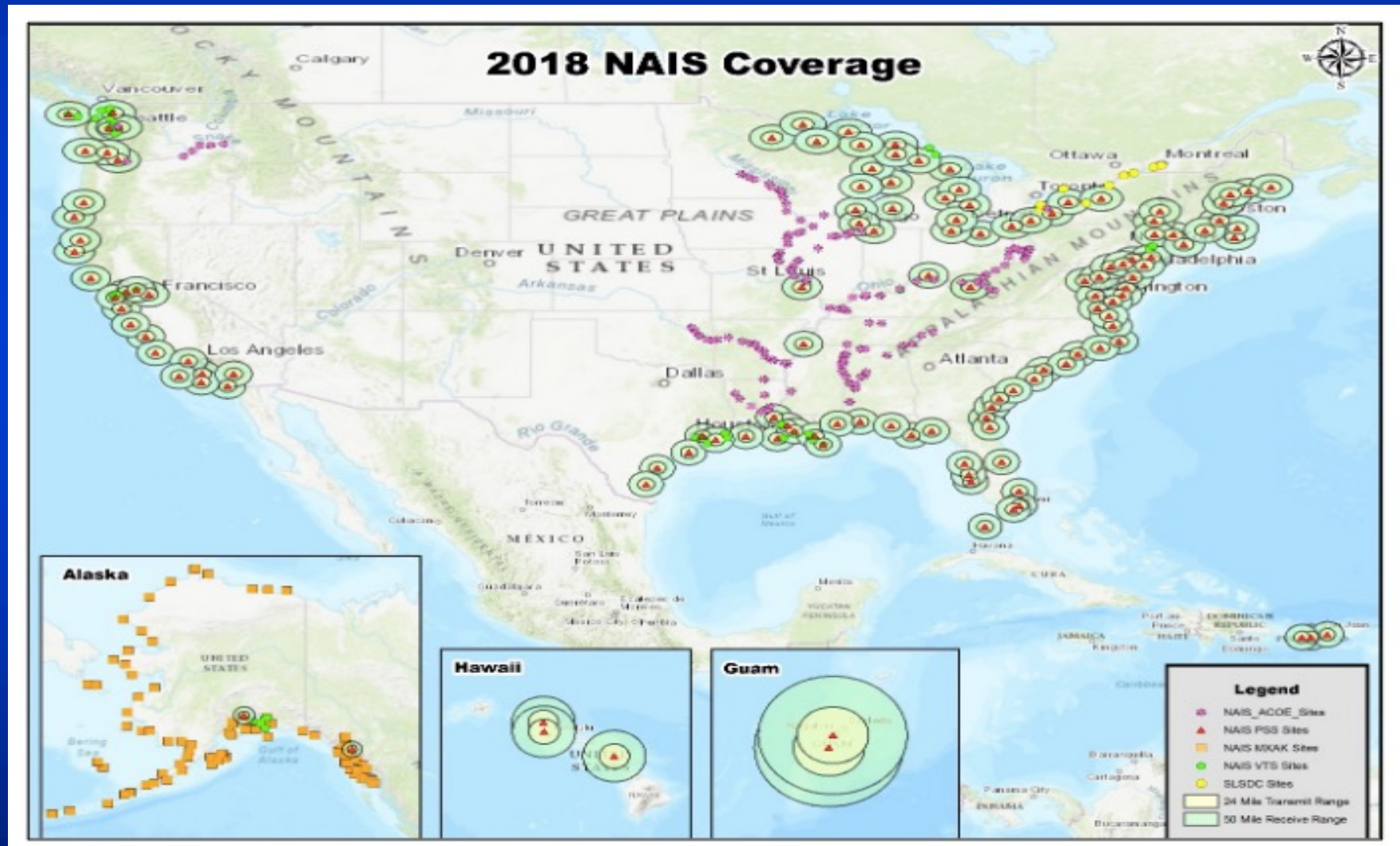
THE USE OF AIS IN MARINE AIDS TO NAVIGATION SERVICES

The primary purpose of an AIS AtoN Station is to promote and enhance safety and efficiency of navigation by one or more of the following:

- providing a positive and all-weather means of identification;
- complementing existing services (e.g., racons) from AtoN;
- transmitting accurate positions of floating AtoN;
- indicating if a floating AtoN is off position;
- promulgation of Application Specific Messages including:
 - marking or delineating tracks, routes, areas, and limits (for example, areas to be avoided and Traffic Separation Schemes (TSS));
 - marking offshore structures (for example, wind turbines, wave and tidal energy devices, oil and gas platforms); and
 - providing weather, tidal, and sea state data;
 - provide additional AtoN capability through the use of Virtual AIS AtoN, where installation of physical AtoN is technically or operationally difficult;

AIS Network in the U.S.

Coast Guard, Army Corps of Engineers, Marine Exchange of Alaska and Saint Lawrence Seaway Corp.





Acquisition Directorate Research & Development Center

Alaska AIS Transmit Prototype Test, Evaluation, and Transition Summary Report

For The Near Shore Arctic Navigational Safety
Information System (ANSIS)

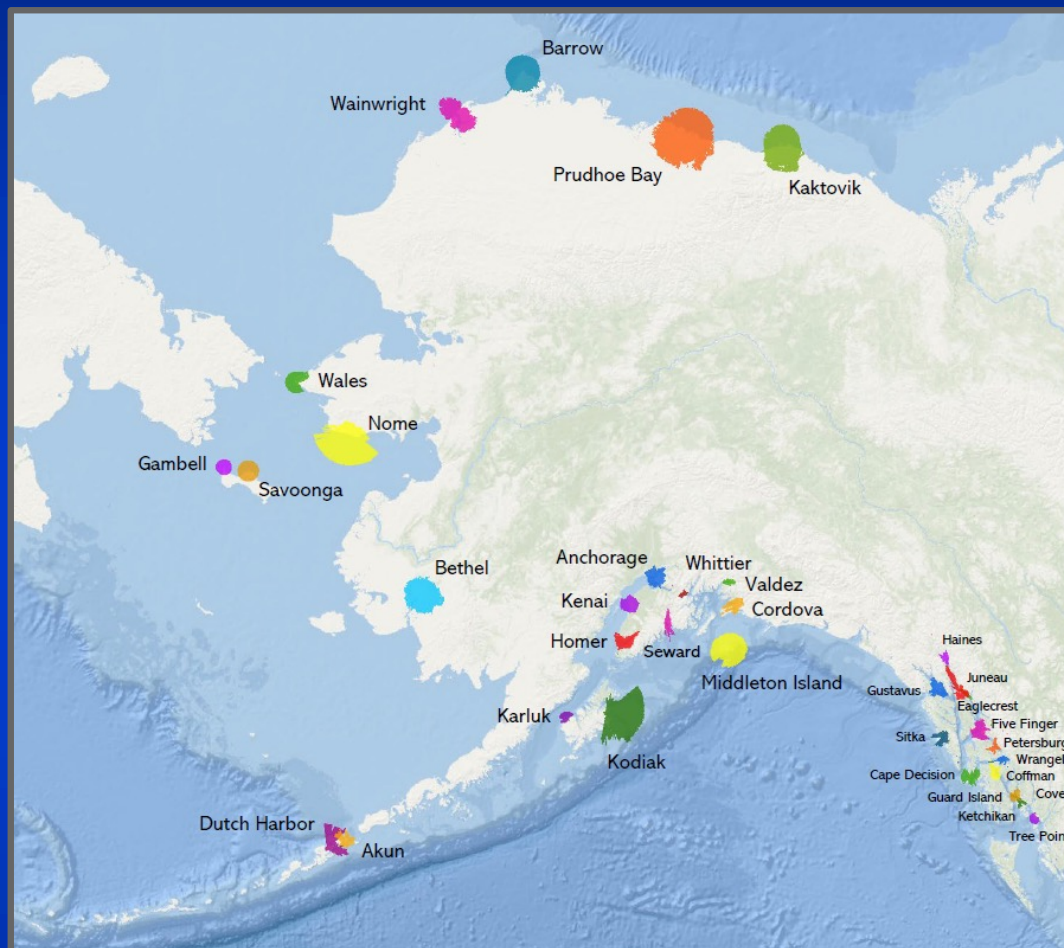
Distribution Statement A: Approved for public release; distribution is unlimited.

October 2018



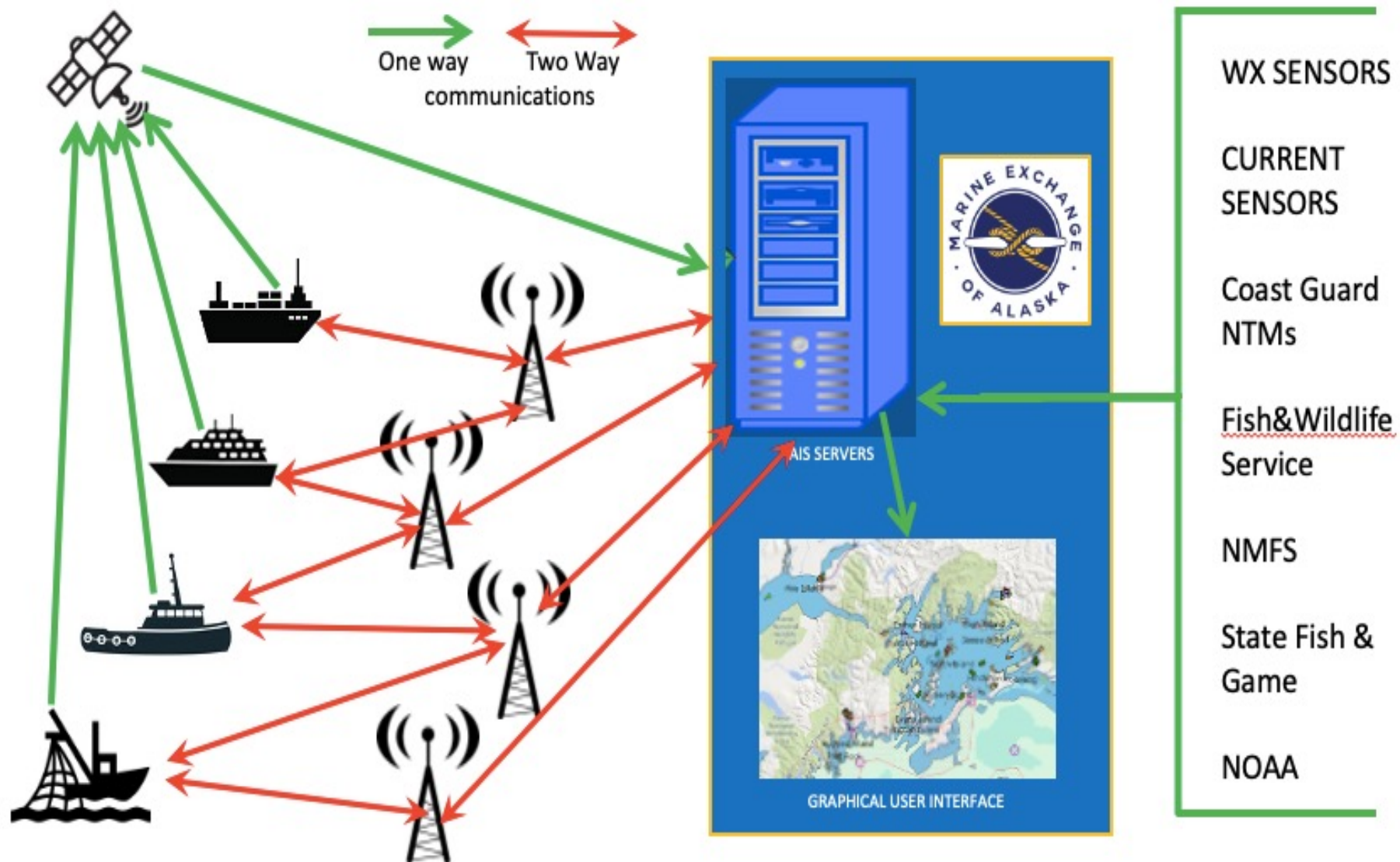
Homeland Security

- Since 2013, RDC partnered with the Marine Exchange of Alaska in a Cooperative Research and Development Agreement (CRADA)
- The Alaska AIS transmit service prototype was designed to broadcast meteorological, hydrographic, and safety information via AIS. This partnership included D17 and CG-NAV.



Regional AIS transceiver coverage based on geographical line-of-sight.

Coverages produced using a 12.5 watt AIS transmitter being received by vessel-based AIS receiver with unity gain antenna mounted 10 feet above the water.



Title	Physical link	Msg	DAC	FI	Sub	Version	# slots (max)	State	Link to associated ASM	Registrant	Permitted as from	Not to be used after	Created	Updated
Environmental Message	AIS	8	367	33		3	5	testing		USCG RDC			12/01/2015 - 21:58	29/01/2021 - 23:19

Report Types

Value	Description	Table
0	Site Location	5
1	Station ID	6
2	Wind	8
3	Tide/river stage (water level)	9
4	Vertical Current Profile (2D)	10
5	Vertical Current Profile (3D)	11
6	Horizontal Current Profile	12
7	Sea state	13
8	Salinity	15
9	Weather	16
10	Air gap / Air draft	17
11	Wind v2	18
12	(reserved for future use)	N/A
13	(reserved for future use)	N/A
14	(reserved for future use)	N/A
15	(reserved for future use)	N/A

Table 2: Environmental Message – Number of Slots

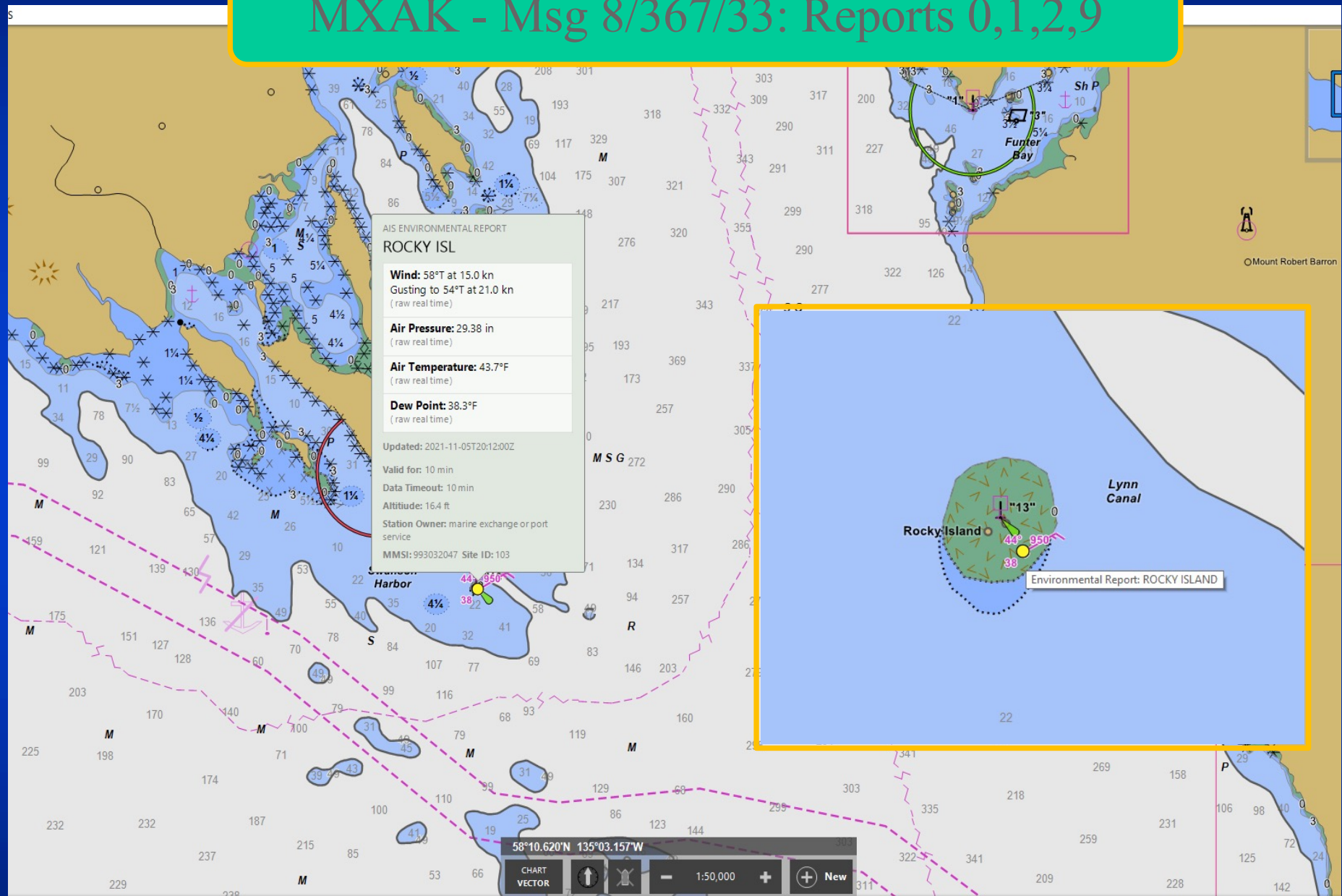
Number of sensor reports transmitted in one message	1	2	3	4	5	6	7	8
Number of bits used for a broadcast message	168	280	392	504	616	728	840	952
Number of slots used for a broadcast message	1	2	3	3	4	4	5	5



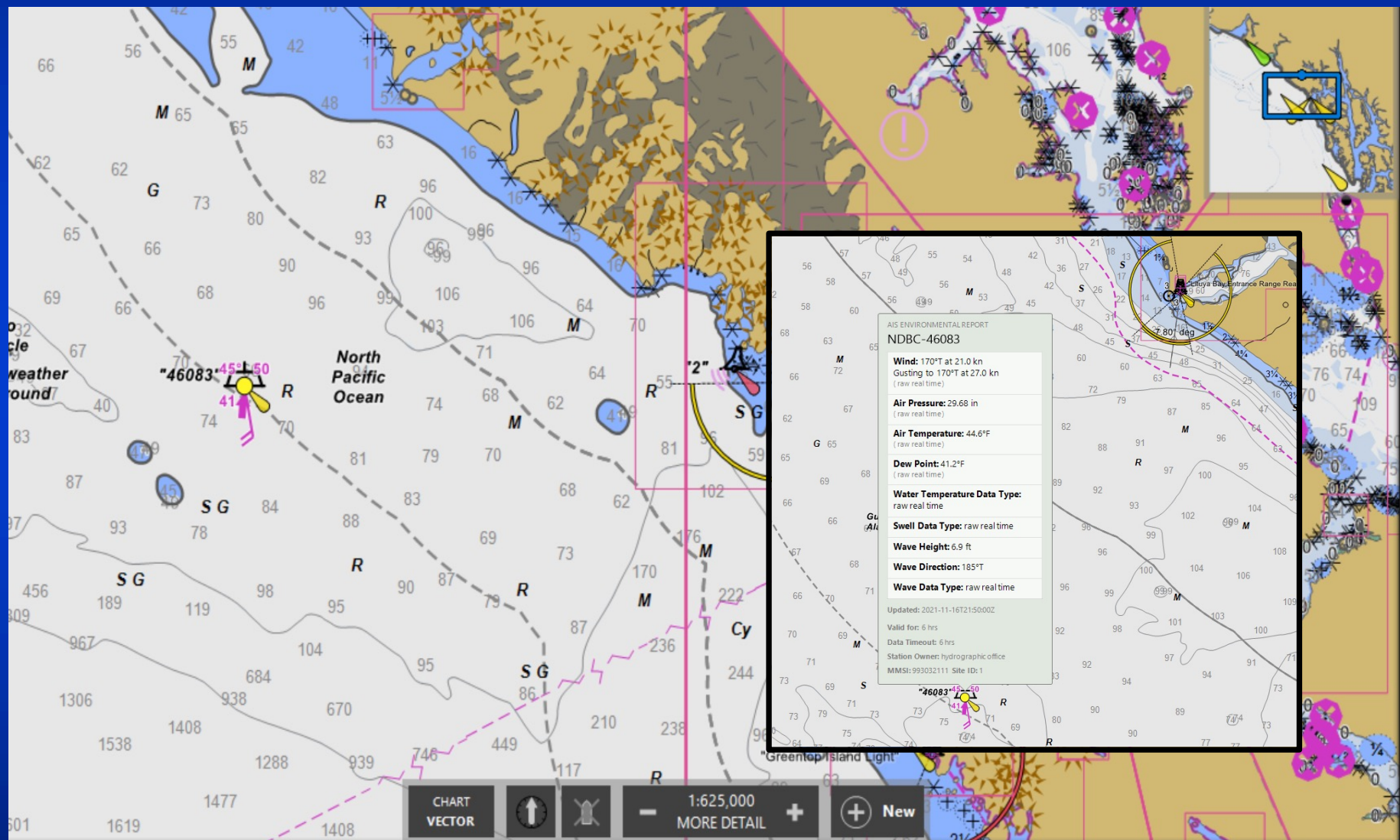
Partnering
with USCG
to co-locate
Wx Stations
with Aids to
Navigation
sites



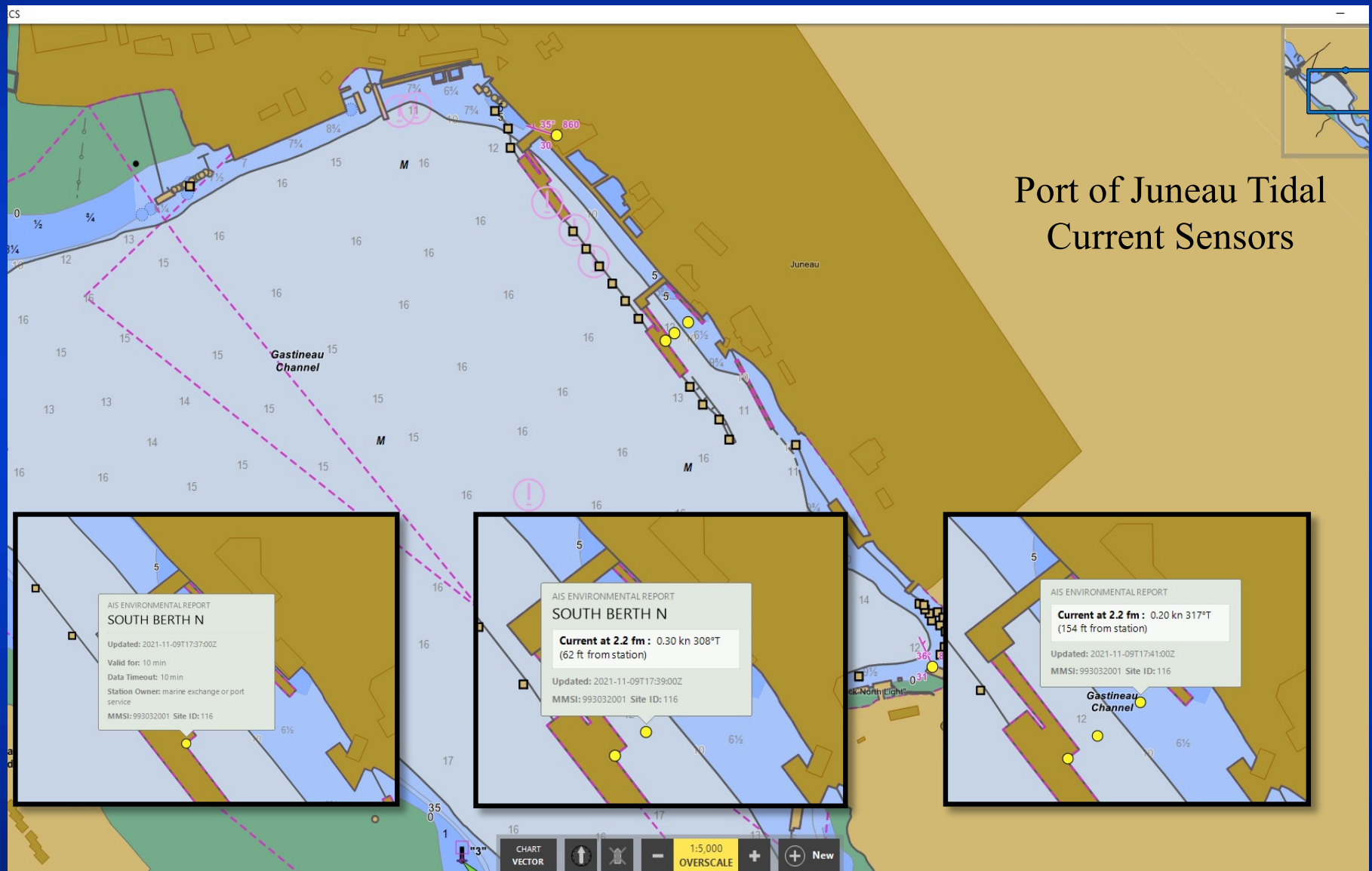
MXAK - Msg 8/367/33: Reports 0,1,2,9



MXAK - Msg 8/367/33 Reports:0,1,2,7,9 for NDBC Buoy



MXAK - Msg 8/367/33: Reports 0,1,6



Feedback from Mariners



"I would like to express my appreciation to the Marine Exchange of Alaska for their statewide weather stations. The Whittier AMHS weather station is most helpful to us as it gives a clear depiction of the weather at our dock in Whittier. We are in Whittier five to seven days a week and frequently encounter significant challenging weather at our berth. Thanks to your company for maintaining this highly critical weather station for all mariner's benefit."

-Gar M.

Henning Master M/V Aurora



Southeast Alaska Pilots' Association

1621 Tongass Avenue, Suite 300 Ketchikan, Alaska 99901 907-225-9696 pilots@seapa.com

"Attached is a view of wx data - in the way I commonly view it as a pilot (SEAIq- application). This allows for good feedback to bridge teams regarding actual conditions in a piloting area. Particularly useful in a port for decision making on approach for berthing."

- Capt.

Barry Olver SEAPA



"As a marine entity we depend on weather forecasts and current readings. It helps us develop mitigation strategies for larger vessels coming into the harbor as well as where to put smaller vessels asking for a safe spot to more. Those decisions are based on the weather, and your observation stations help us get that info."

-Michael Sarnowski-

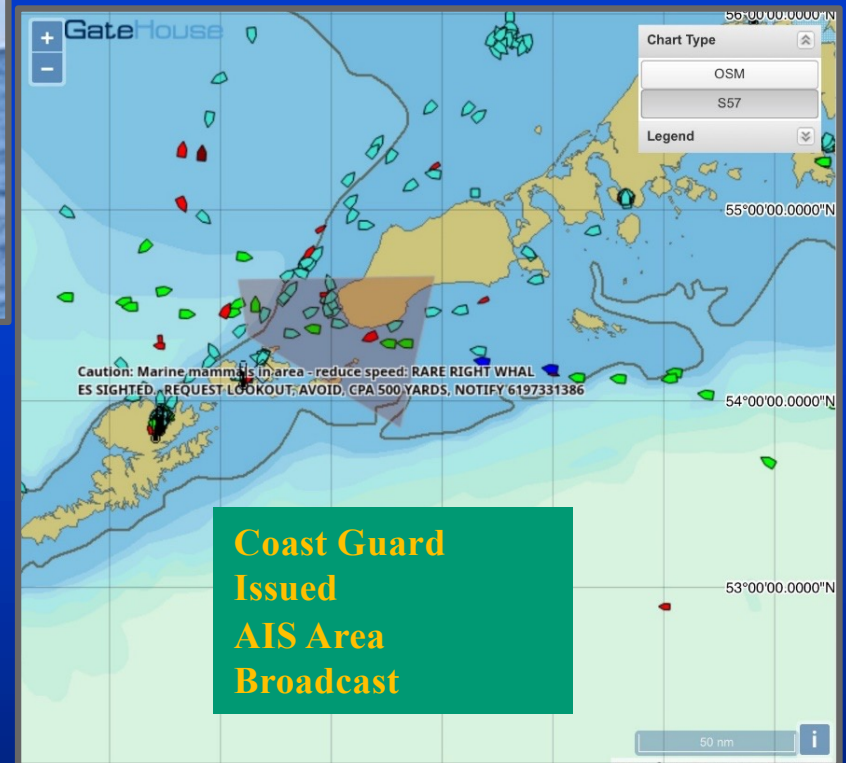
Kodiak, AK Harbormaster

Reporting Whale Sightings

Title	Physical link	Msg	DAC	FI	Sub	Version	# slots (max)	State	Link to associated ASM	Registrant	Permitted as from	Not to be used after	Created	Updated
Geographic Notice	AIS	8	367	22		2	5	testing	Area Notice	USCG RDC			12/01/2015 - 21:52	29/01/2021 - 23:19
Linked Text	AIS	8	367	29		1	5	testing		USCG RDC			12/01/2015 - 21:55	29/01/2021 - 23:19



Rare Right Whales sighted near Unimak Pass. Two Right Whales within a pod of 20 whales including Humpback and Fin whales. The pod could have included half of the estimated 30 Right Whales that remain of the Eastern North Pacific population



Reporting VHF Site Outages

USCG: Msg 14 Safety Related Messaging

OFFICE OF INSPECTOR GENERAL

**Coast Guard Should
Prioritize Upgrades to
Rescue 21 Alaska and
Expand Its Public
Notifications during
Outages**

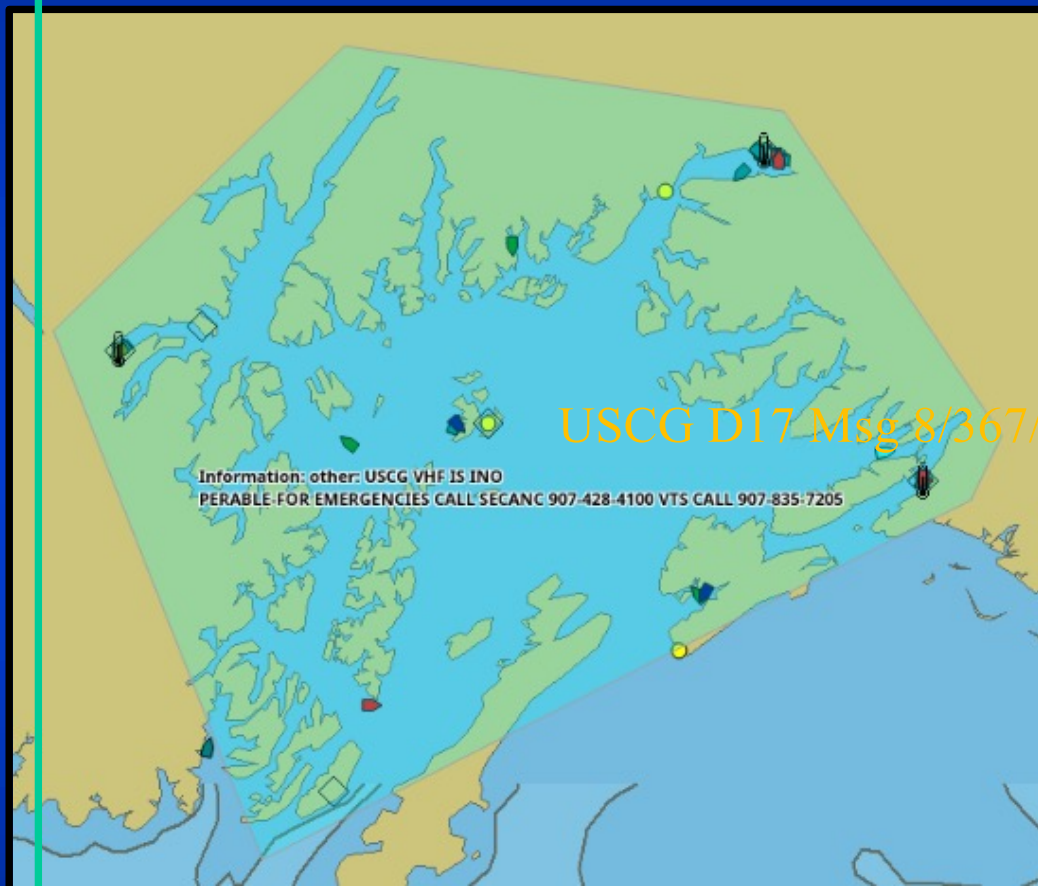


Homeland
Security

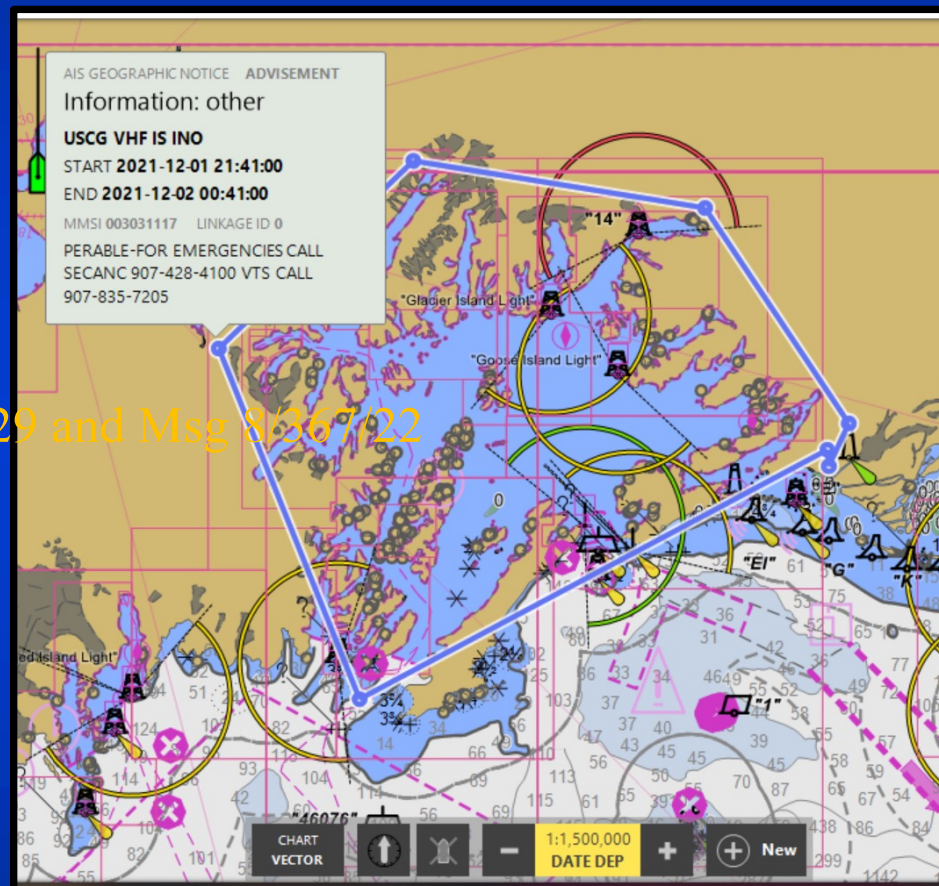
September 21, 2021
OIG-21-65

Inbox					
Close		Time Span: 1 Hour	<input checked="" type="checkbox"/> Refresh every 60 sec Set		
Show Messages: Safety + Binary		Addressed + Broadcast		<input checked="" type="checkbox"/> Text <input type="checkbox"/> AtoN	
Time	Msg Type	Src MMSI	Dest MMSI	Msg	Retr
10/28/2020 09:46	Sfty Brdc	414763375]>HR]9]5^W=:*Z\$11+/.K;T];>,	
10/28/2020 09:45	Sfty Brdc	100000020		BECAUSE OF BAD VISIBILITY,SAFE SPEED IS REQUIRED.	
10/28/2020 09:45	Sfty Brdc	100000020		BECAUSE OF BAD VISIBILITY,SAFE SPEED IS REQUIRED.	
10/28/2020 09:45	Sfty Brdc	100000020		BECAUSE OF BAD VISIBILITY,SAFE SPEED IS REQUIRED.	
10/28/2020 09:45	Sfty Brdc	100000020		BECAUSE OF BAD VISIBILITY,SAFE SPEED IS REQUIRED.	
10/28/2020 09:44	Sfty Brdc	1029494495		#+?7Q?*6/=1V;[+=]C);/OG<	
10/28/2020 09:44	Sfty Brdc	003031114		SUBSISTENCE WHALING WITHIN 50NM OF WAINWRIGHT REQUEST MARINERS CALL AEWG 907-852-2392	
10/28/2020 09:44	Sfty Brdc	003031114		SUBSISTENCE WHALING WITHIN 50NM OF WAINWRIGHT REQUEST MARINERS CALL AEWG 907-852-2392	
10/28/2020 09:44	Sfty Brdc	003031114		ATON DISCREPANCY - POINT WORONZOF RFL (LLNR 26435) EXTINGUISHED	
10/28/2020 09:44	Sfty Brdc	003031114		ATON DISCREPANCY - POINT WORONZOF RFL (LLNR 26435) EXTINGUISHED	
10/28/2020 09:44	Sfty Brdc	004310606	431013036	YOU ARE GOING TO AGROUND. PLEASE CHECK IMMEDIATELY.	0
10/28/2020 09:41	Sfty Brdc	1056039868	243496068	+2"D/S5U#W3]2P	1
10/28/2020 09:41	Sfty Brdc	004310311	431625000	WARNING. YOUR VESSEL IS APPROACHING TO THE SHORE,WATCH OUT!	0
10/28/2020 09:39	Sfty Brdc	003031114		ATON DISCREPANCY - POINT NIKISKI SECTOR LT (LLNR 26330) EXTINGUISHED	
10/28/2020 09:39	Sfty Brdc	003031114		ATON DISCREPANCY - POINT NIKISKI SECTOR LT (LLNR 26330) EXTINGUISHED	
10/28/2020 09:00	Sfty Brdc	003031114		CG ALTHORP PEAK VHF SITE AT 58-06N 136-25W INOP-RELAY DISTRESS CALLS TO 9074632980	
10/28/2020 09:00	Sfty Brdc	003031114		CG ALTHORP PEAK VHF SITE AT 58-06N 136-25W INOP-RELAY DISTRESS CALLS TO 9074632980	
10/28/2020 09:00	Sfty Brdc	003031114		CG ALTHORP PEAK VHF SITE AT 58-06N 136-25W INOP-RELAY DISTRESS CALLS TO 9074632980	
10/28/2020 09:00	Sfty Brdc	003031114		CG ALTHORP PEAK VHF SITE AT 58-06N 136-25W INOP-RELAY DISTRESS CALLS TO 9074632980	
10/28/2020 08:52	Sfty Brdc	003031114		CG DUFFIELD PENN VHF SITE AT 57-31N 135-28W INOP-RELAY DISTRESS CALLS TO 9074632980	
10/28/2020 08:52	Sfty Brdc	003031114		CG DUFFIELD PENN VHF SITE AT 57-31N 135-28W INOP-RELAY DISTRESS CALLS TO 9074632980	
10/28/2020 08:52	Sfty Brdc	003031114		CG DUFFIELD PENN VHF SITE AT 57-31N 135-28W INOP-RELAY DISTRESS CALLS TO 9074632980	

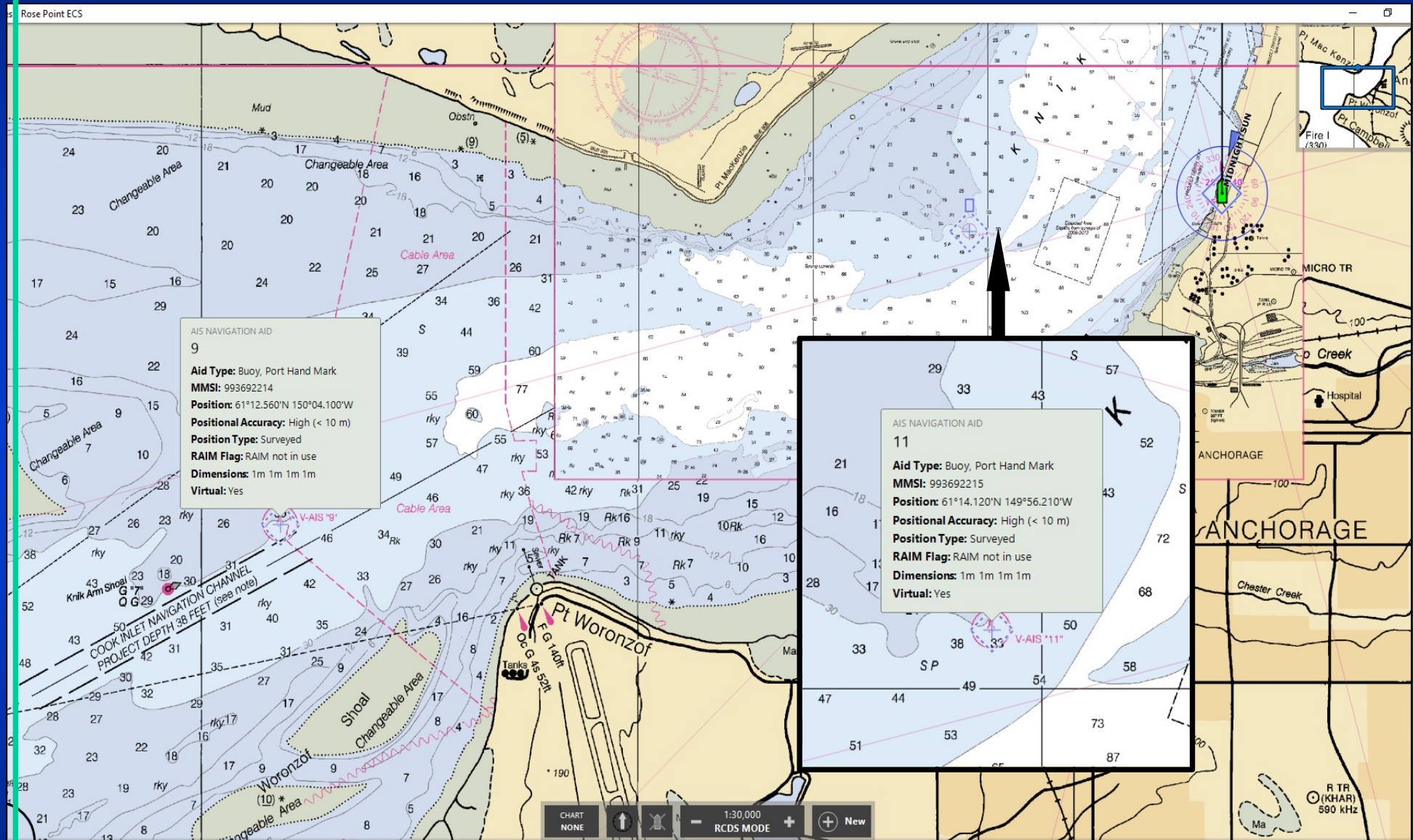
USCG D17 Msg 8/367/29 and Msg 8/367/22



USCG D17 Msg 8/367/29 and Msg 8/367/22



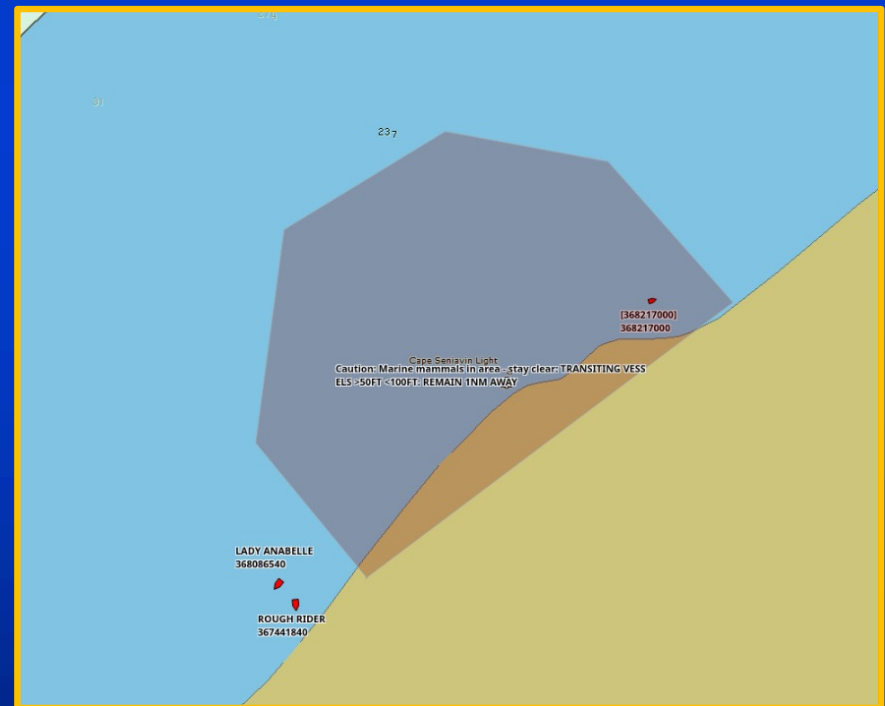
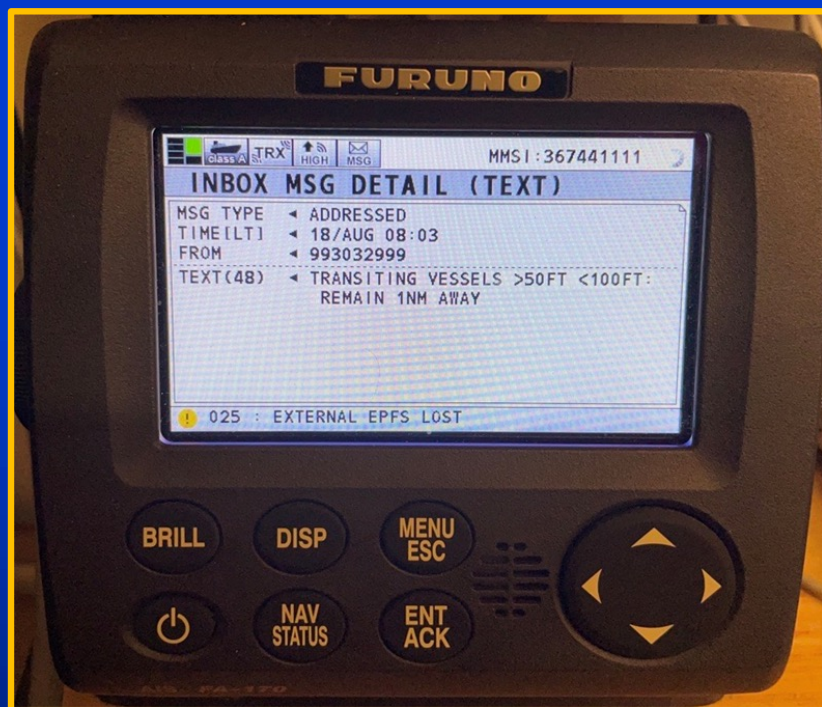
USCG D17 Broadcast of V-AIS: Cook Inlet Virtual Aids 9 & 11





Pacific Walrus Haulout Advisory

Safety Messaging & Application Specific Messaging



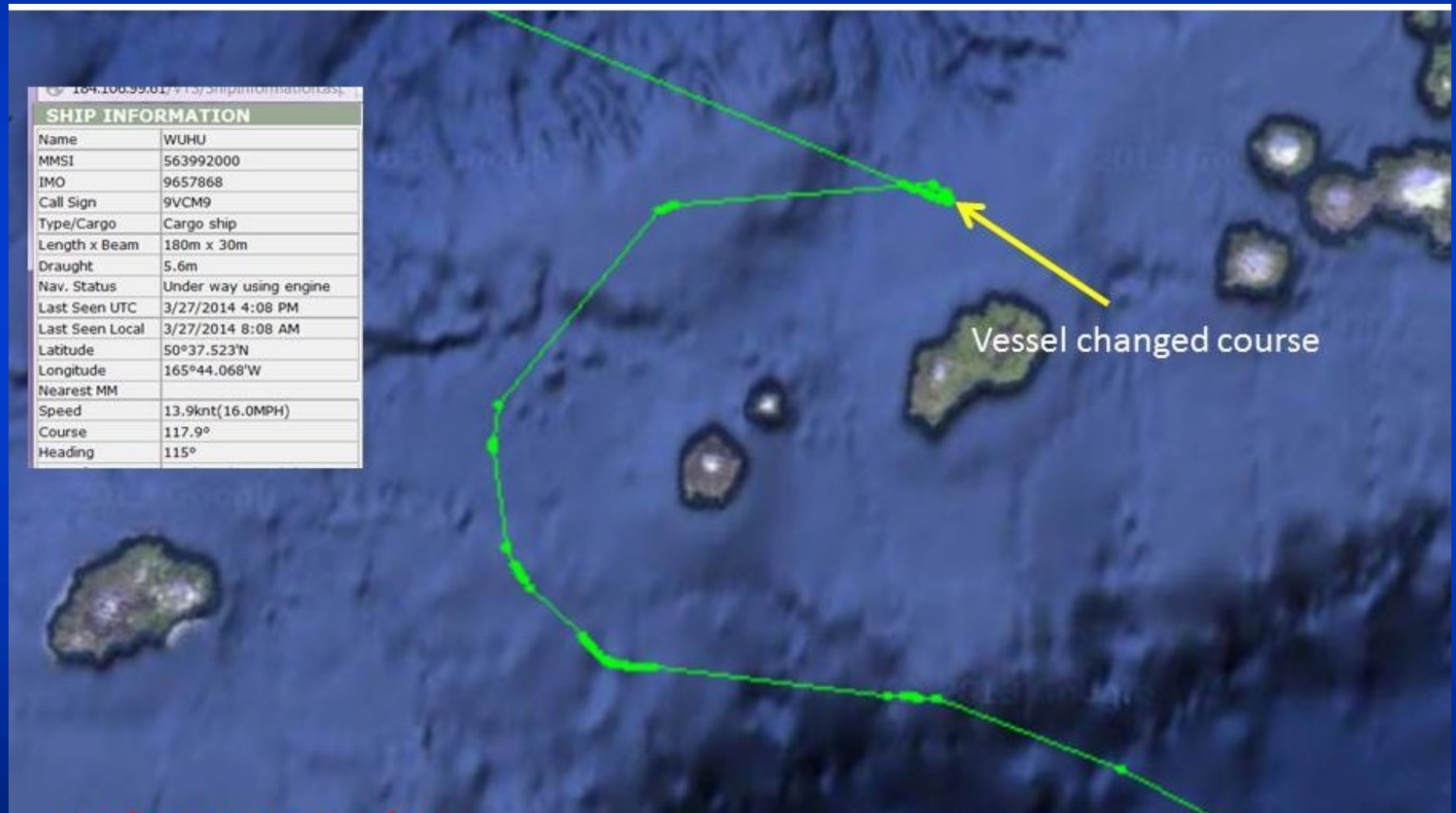


E-navigation

- E-navigation is intended to meet present and future user needs of shipping through harmonization of marine navigation systems and supporting shore services. It is expected to provide digital information and infrastructure for the benefit of maritime safety, security and protection of the marine environment, reducing the administrative burden and increasing the efficiency of maritime trade and transport.

Vessel Heading for High Risk Pass

Vessel Notified and Corrective Action Taken



-----Original Message-----

From: SANTA EMILIA [mailto:santa_emilia_120601@mot.amosconnect.com]
Sent: Monday, October 12, 2015 4:56 AM
To: Network APC Monitoring Center
Cc: wakdeviation@ak-mprn.org; mitsubishi@mot-tyo.co.jp; MOT Mr. NUALDA; WNI; OpsPMX; DBC
Subject: SANTA EMILIA: APC Operating Procedure Deviation

To: Network APC Monitoring Center
Fm: Master of SANTA EMILIA
Dt: 12 October 2015
Ref:STEL-EM-15-10-043

Good Evening,

Message well recieved and noted. Presently we have deviated our course to comply with 50NM from nearest land.

- 1) Confirm reason for deviation (e.g. weather avoidance, etc.)
Weather Avoidance
- 2) Provide Sea Height, Wind Speed and Direction
deviation routes:
Original Route
Wind: NW / Force 7
Sea Height: 4.5m.
Deviation Route
Wind: NW / Force 5
Sea Height: 4.0m.
- 3) Closest intended distance from shore during
60NM
- 4) Geographic reference or position of closest
Attu Island 60NM Off / 2230UTC 14th Oct
- 5) Last Port of Call/Next Port of Call/ETA
Long Beach, USA / Fangcheng, China / 1500UTC 27th Oct. 2015
- 6) Type and amount of cargo onboard (bbls):
Sulfur in Bulk : 59,919.766mt.
- 7) Type(s) and amount(s) of fuel oil and lubes aboard (bbls)
IFO:671.57mt. / MDO: 5.493mt. / LSMGO: 106.20mt. / LO:14,500Ltrs.
- 8) Confirm vessel is not experiencing any engineering difficulties and is
fully operational: All Equipments are in good operational condition.
- 9) Confirm updated charts of area onboard:
Yes updated and corrected on latest weekly corrections.

**Message well received and
noted. Presently we have
deviated our course to comply
with 50nm from nearest land.”**

Tks/Brngds

Capt. Nestor G. Gaviola
MASTER of SANTA EMILIA

E-mail : santa_emilia_120601@mot.amosconnect.com

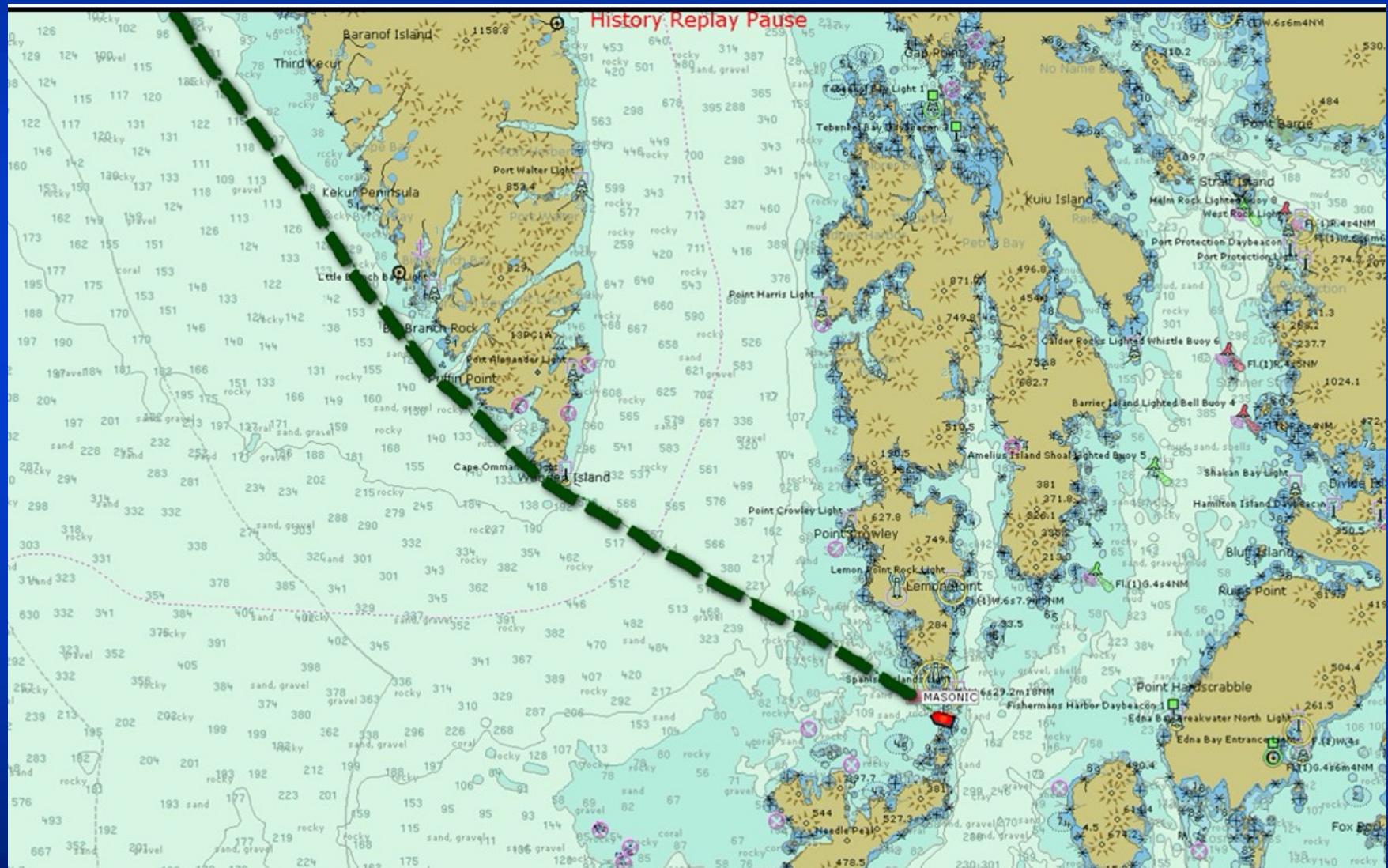
Tel : 870-773155830 / Fax : 870-783255076 *Urgent case, Pls use Inm-C : 435422711

LAURA MAERSK

Not Under Command



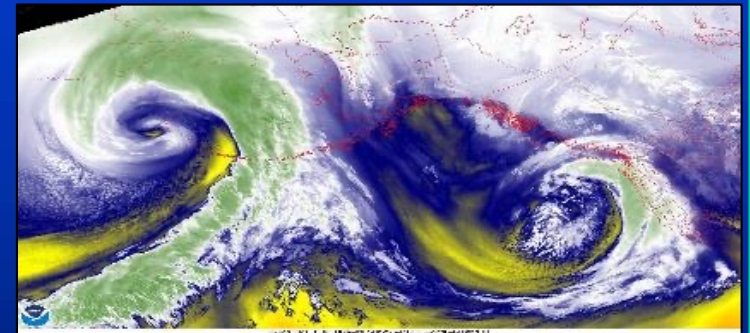
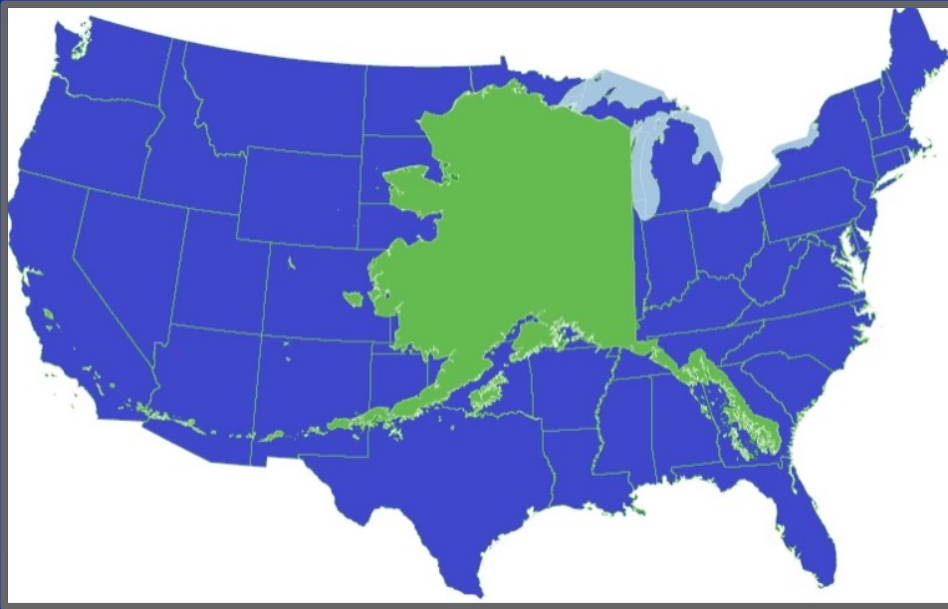
Fishing Vessel MASONIC



Fishing Vessel MASONIC



Vast, Pristine, Dangerous, Limited Resources



Cape St Elias

RCAC Wx Station

MXAK AIS Station



Opportunities to work together and amortize costs



*Thank You for
your leadership!*