StationKeeper AIS Messaging Tests

Delivery-Receipt Range Results — Summary Report

Maritime Information Systems, Inc. / MotionInfo · Prepared for the NOAA AIS Messaging Technical Implementation Workgroup · July 2026

Overview

MotionInfo's StationKeeper shore stations transmit AIS safety messages from aids-to-navigation (AtoN) to vessels underway. During trials in July 2026, AIS safety related text messages were sent and received live aboard multiple university research vessels and the NOAA Ship Nancy Foster, and each vessel's delivery receipt (its acknowledgement / AIS position) was captured back at a StationKeeper receiving station. This report summarizes those results and the ranges at which receipts were confirmed.

What the tests demonstrated

- **Six vessels reached:** five research vessels plus the NOAA Ship Nancy Foster.
- **Confirmed delivery-receipt range:** receipts captured from close aboard out to roughly 15–16 nm (about 27–29 km).
- **Two-way capability:** a shore-to-ship and ship-to-shore round trip verified with the training ship State of Maine.

Delivery-receipt / acknowledgement range

Each row records a confirmed receipt: a vessel received the shore AtoN broadcast and its acknowledgement / position was received back at a StationKeeper station. Range is the vessel-to-station distance at the moment of receipt.

Vessel	MMSI	Receiving station	Receipt (UTC)	Pos gap	Range (nm)	Range (km)	SOG (kn)
R/V Sharp	367063060	4015 — MERR Institute, Lewes DE	07-01 19:59:27	30 s (A)	0.13	0.25	0.1
R/V Palmetto	338004751	4159 — Sullivan's Island SC	07-01 19:42:47–19:43:00 (×3)	49–61 s (B)	2.28	4.21	0.1
R/V Joanne Daiber	338169577	4015 — MERR Institute, Lewes DE	07-01 19:57:18	0 s (A)	3.63	6.73	0.6
NOAA Ship Nancy Foster	369912000	4159 — Sullivan's Island SC	07-03 15:51:56	2 s (A)	5.59	10.35	7.7
R/V Savannah	303117000	4236 — Wassaw NWR GA	07-01 16:06:23	1 s (A)	14.62	27.07	9.0
R/V Savannah	303117000	4144 — Tybee Island GA	07-01 16:06:28 / 16:20:53 / 16:20:59	0–2 s (A)	14.26 → 15.85	26.4–29.4	~9

Pos gap — interval between the vessel's transmitted AIS position and the receipt (position freshness; smaller is tighter). Annotations (A)/(B), (×3) and the range/arrow notations are reproduced verbatim from the corrected range-test log; the arrow (→) and hyphen ranges denote values across multiple receipts. Receipt times are UTC.

Two-way exchange — TS State of Maine

Over the weekend of America's 250th anniversary, Navesink (Twin Lights) Lighthouse in Highlands, NJ transmitted an AIS message that was received aboard the Maine Maritime Academy training ship *TS State of*

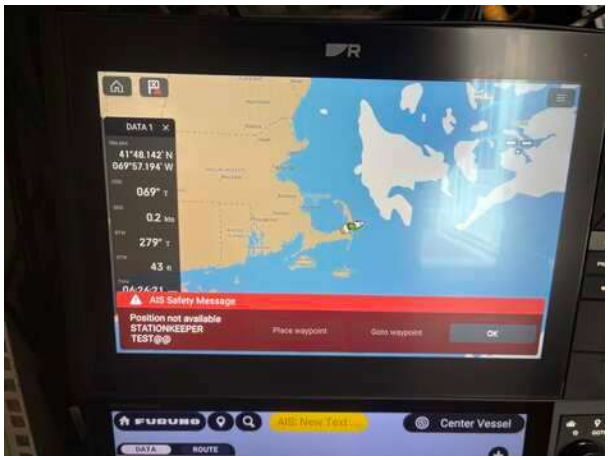
Maine in New York Harbor. The vessel's acknowledgement was then received back at Navesink Lighthouse, a complete shore-to-ship and ship-to-shore round trip. The RV Savannah was messaged on 7/1/2026 and an acknowledgement was recorded. The vessel's officer saw the message and sent back the AIS Message 12 'ACK.' which was captured by the Tybee Island Lighthouse and Wassaw Island SationKeepers.

Conclusion

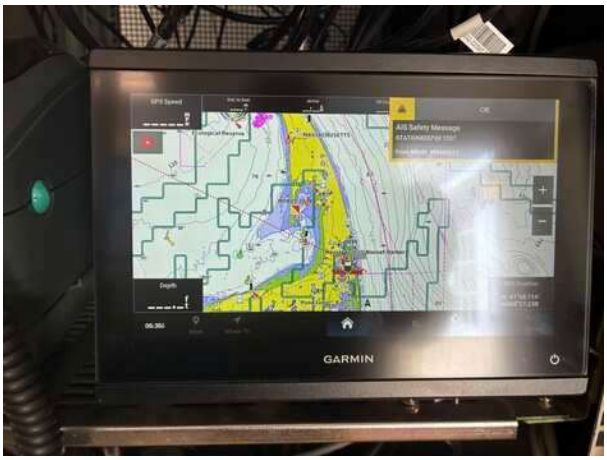
StationKeeper delivered AIS safety messaging from shore aids-to-navigation to vessels underway, displayed identically across every major chartplotter brand, with delivery receipts confirmed over the vessels' actual operating ranges and a two-way exchange demonstrated end to end. The messaging capability NOAA is evaluating works on real vessels, at sea, today.

Appendix — TEST BENCH MFDs DISPLAYING TEST MESSAGES

Photographs from our test bench displaying safety related text messages on four different multi-function displays (MFDs).



Raymarine
AIS Safety Message received



GARMIN
AIS Safety Message received



SIMRAD
AIS Safety Message received



FURUNO
AIS Safety Message received