



AIS EPRIB



Proof of Concept Testing

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AIS



- Automatic Identification System (AIS)
 - Ship to Ship broadcast of own ships data to all ships in vicinity.
 - MMSI (identification)
 - Location (GPS)
 - + more (course, speed, etc)
 - AIS carried by SOLAS vessels, and growing population of ships world wide.
 - AIS receivers now on many of worlds MPA



121.5 MHz



- Legacy Homing Frequency
- Poor DF results
 - Short range – mostly > 10nm
 - Easily Attenuated – blocked by body, rafts, etc.
 - DF not carried by AMVER vessels, or most ships.



SART

- A T earc and
escue Transponder
 - approved device to
locate survival craft.
 - A A A T





AIS SART

- SART device with AIS instead of RADAR



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AIS EPIRB



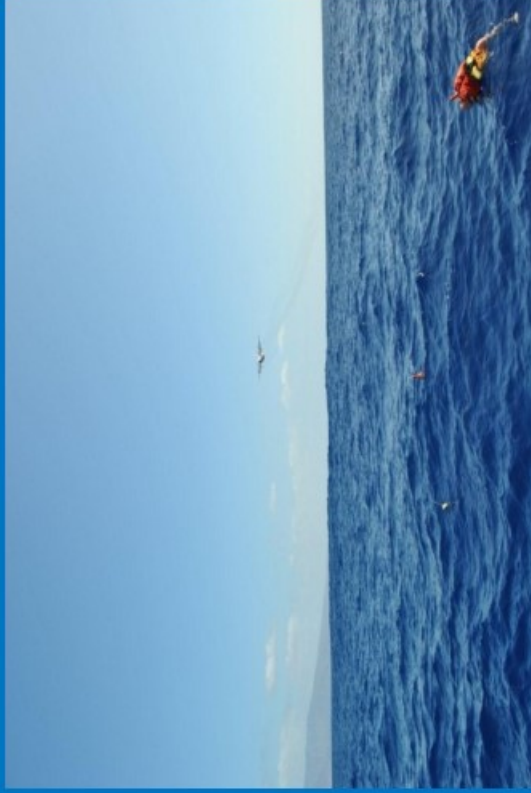
- Idea – replace 121.5 MHz homer in EPIRB with AIS transmitter.
 - Send AIS (Class A) message 8 times a minute, updating every minute.
- Testing:
 - Northern Lighthouse Board – Oban, Scotland. 2008
 - USCG – Key West Jan 2009
 - USCG – Hawaii Jan 2010

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AIS EPIRB Testing in HI



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AIS Test Results

Unit Type	Altitude (ft)					Notes
	20 K	10 K	5K	1 K		
Line of Sight	174	123	87	39		Ranges are Approximate in Nautical Miles
AIS EPIRB	145	102	70	33.5		Calculated
EPIRB	155	117	76	32		Inbound Only
406 MHZ	156	115	76	37		Outbound Inbound
121.5 MHZ	**0	*X	*X	1.2		Outbound Inbound
AIS SART (1)	140	94	70	30		Inbound
AIS SART (2)	145	Inop	Inop	Inop		Inbound
AIS SART (3)	137	96	68	19.5		Inbound
RADAR SART	90	*X	*X	38		Inbound



AIS Test Results



- Tested results were results were only slightly less than line of sight of the EPIRB, AIS SART, and AIS EPIRB.
- Line of Sight Calculations:
 - 20 K = 174 nm
 - 10 K = 123 nm
 - 5 K = 87 nm
 - 1 K = 39 nm



Next Step

- IMO Approval
- Standards developed
- Product development
- Product Sales

