



Maritime Use of Satellites

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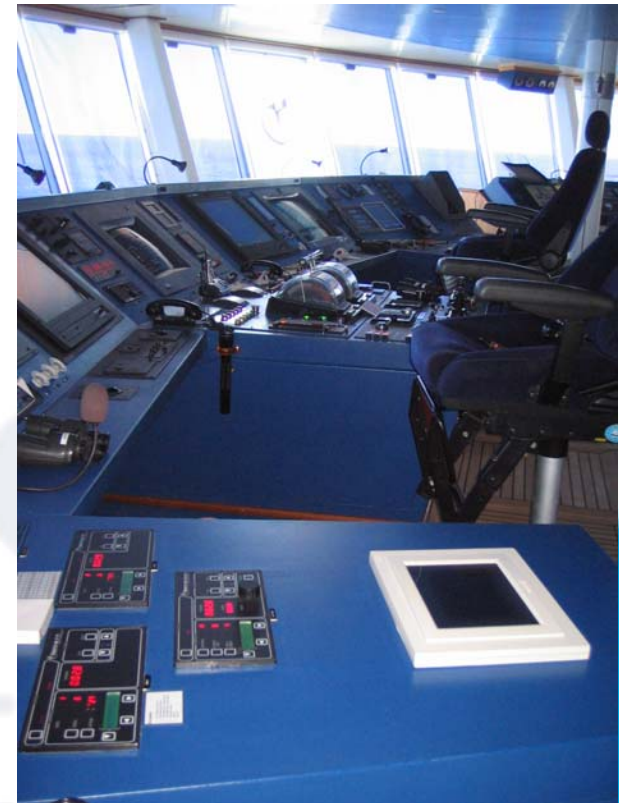
Introduction

- The Nautical Institute is the International Professional Body for Maritime Professionals.
- Please visit: www.nautinst.org
- I'm a mariner, I used to drive ships – now I represent those “in control of sea going craft”.
- I don't know much about satellites...



Shipboard Use

- Navigation
- Communication
- Identification
- Entertainment
- Timing



Navigation

- Global Navigation Satellite Systems (GNSS)
 - GPS, GLONASS, Compass, and Galileo
 - Use of Augmentation (SBAS)
 - Questions of reliability due to jamming and spoofing
- Ice/Polar Navigation
- Meteorological Assistance





Communication Needs

- Regulatory compliance
- Safety procedures & response (GMDSS).
- Commercial applications
- Engineering applications
- Medical response
- Personal Communication



Communication

- Inmarsat
 - Iridium
 - V Sat
-
- Costs are an issue
 - Holy Grail = Affordable Broadband



Identification

- Long Range Identification and Tracking (LRET)
- Automatic Identification System (AIS)
- Satellite Radar
- Emergency Position Indicating Radio Beacon (EPIRB)
- Cargo Tracking



Shore Needs

- Establish Domain Awareness
 - Security (identify rouge vessels)
 - Monitor environment
 - Provision of Marine Safety Info
 - Incident response
 - EEZ management
 - Meteorological services
 - Coastal/Port services



Domain Awareness

- Tools
 - LRET & AIS
 - Satellite Radar
 - Other facilities
 - Networks
- Environment & Incident management
- Communication





Growth

- Identification & Tracking for security, enforcement & compliance.
- Improved environmental and commercial efficiency.
- Polar Navigation
- Broadband Communication (fixed cost...) commercial, safety and entertainment.



Drivers

- Security
- Environment
- Enforcement
- Safety
- Efficiency
- Recruitment & Retention of crews
- eNavigation – eMaritime Projects



Conclusions

- Increased demand for Satellite services.
- Increased demand for reduced costs.
- Increased competition from terrestrial service providers.



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