Shiparc2015
Sub-theme 2 – Beyond the Polar Code: Assuring safe and environmentally sound Arctic navigation
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• Maritime surveillance for the purposes of situational awareness, including vessel detection, monitoring and tracking
• Importance of information/data sharing
• Risk assessment
Maritime surveillance for the purposes of situational awareness, including vessel detection, monitoring and tracking

- Gathering and analyzing data to establish current situation for sea traffic management and for establishing trends and patterns which can be used for predictions
- Data derived from various sources, e.g. satellites, ship reporting (AIS, LRIT, GPS, etc.), existing databases, other intelligence (social media, websites) and supplementary information
- Support masters (decision-making), authorities (emergency response) and policy makers (impact assessment and planning)
- Oil spill monitoring, ice edge detection, object detection
Importance of information/data sharing

• Knowledge of what data are available and how they can be obtained
• Providing transparency of data across the Arctic
• Enhancing cooperation by data sharing across countries/authorities and development of relevant policies
Risk assessment

• Requirement of Polar Code (Polar Water Operational Manual)
• Risk calculation based on ice data and other factors (weather, remoteness, chart availability, etc.) to establish operational limitations for each ship
• Using systems like Polaris and/or under development in IMO
• Identification of relevant data sources
Other issues addressed

• Possible further work by IMO to supplement Polar Code
  • Ships routing and reporting
  • Vessel traffic services
  • Special areas/ PSSAs/ ECAs

• Effect of Arctic ice on climate and vice versa

• Grounding avoidance in the Arctic through ship-centric dynamic virtual aids to navigation

• Key role of Master’s leadership and team coherence and competency in Arctic as a high-risk area

• Supply chain performance impact on Arctic transport

• Maritime domain awareness and local traffic management
Challenges and problems (in no particular order)

- Ship detection in ice by satellites
- Communication limitations
- Standardization of data formats to facilitate sharing
- Effectivity of BWM systems in cold water
- Availability of port reception facilities
- Lack of accurate and reliable nautical charts and aids of navigation
Suggestions

• Vessel compliance monitoring systems/technologies could be used to ensure/verify compliance with Polar Code requirements

• E-navigation could be expanded to embrace new technologies beyond ECDIS and AIS

• Consider establishing a mechanism to enable sharing of verified data in a standardized format for public use to ensure transparency

• Involving indigenous peoples in decisions made by local maritime authorities regarding navigation

• Development of soft laws (guidelines, best practices, etc.) to supplement existing international regulations

• Consider using forward looking Sonar technology for areas not or not reliably charted