



Spatially Enabling
Australia and New Zealand

**Japan-Australia Quasi-Zenith Satellite System
(QZSS) Industrial Utilisation Workshop
6 February 2018 at UNSW**

Satellite Positioning Requirements for the Australian Maritime Industry

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Australian Government
Department of Industry,
Innovation and Science



Business
Cooperative Research
Centres Programme

5th Largest Shipping Task in the World



- Long coast line
- Significant raw commodities for export
- Reliance on significant imports by sea
- The world's fastest growing cruise industry
- Highly active ports requiring a range of on-water services

Maritime Economic Benefits



Directly contributed \$9 billion to GDP
in 2012-13

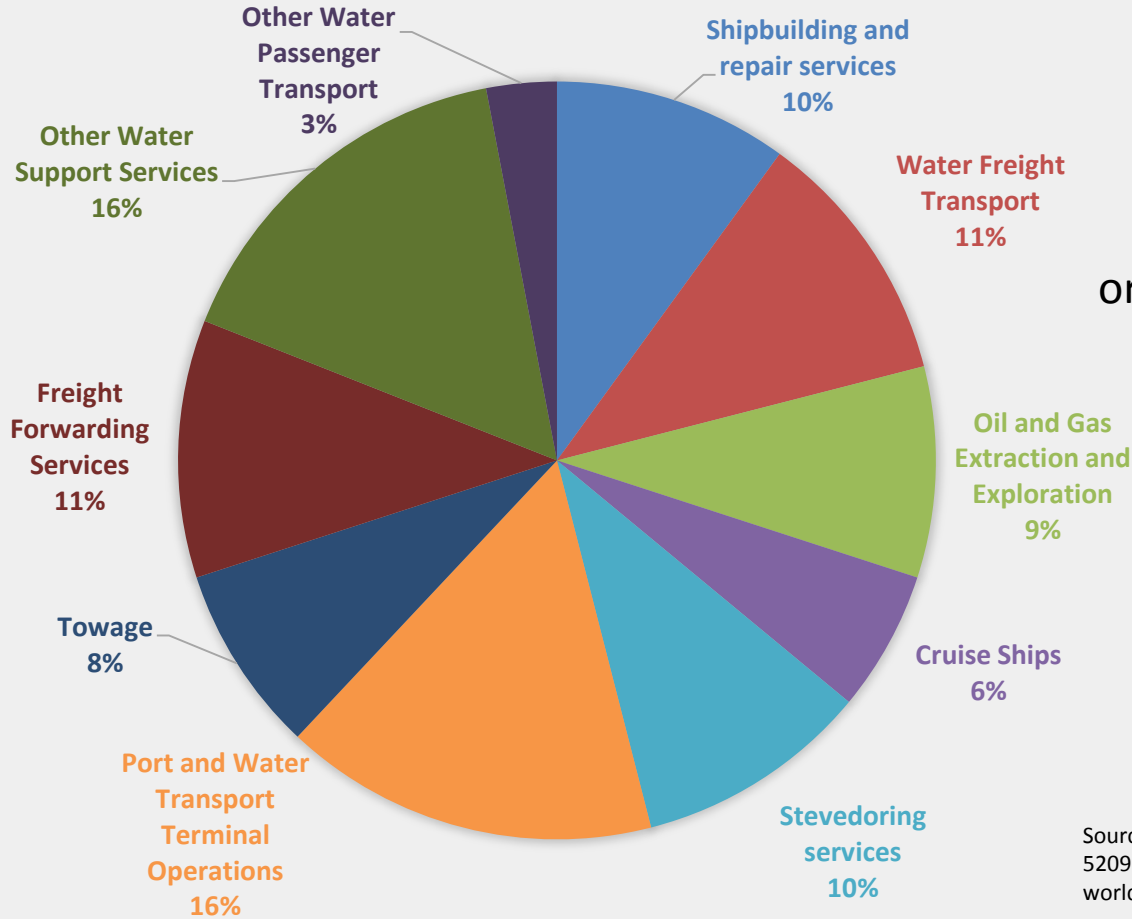


Directly employed almost 31,000
people in 2012-13



Directly contributed over \$900 million
to taxation revenue in 2012-13

Composition of Australian Maritime Industry



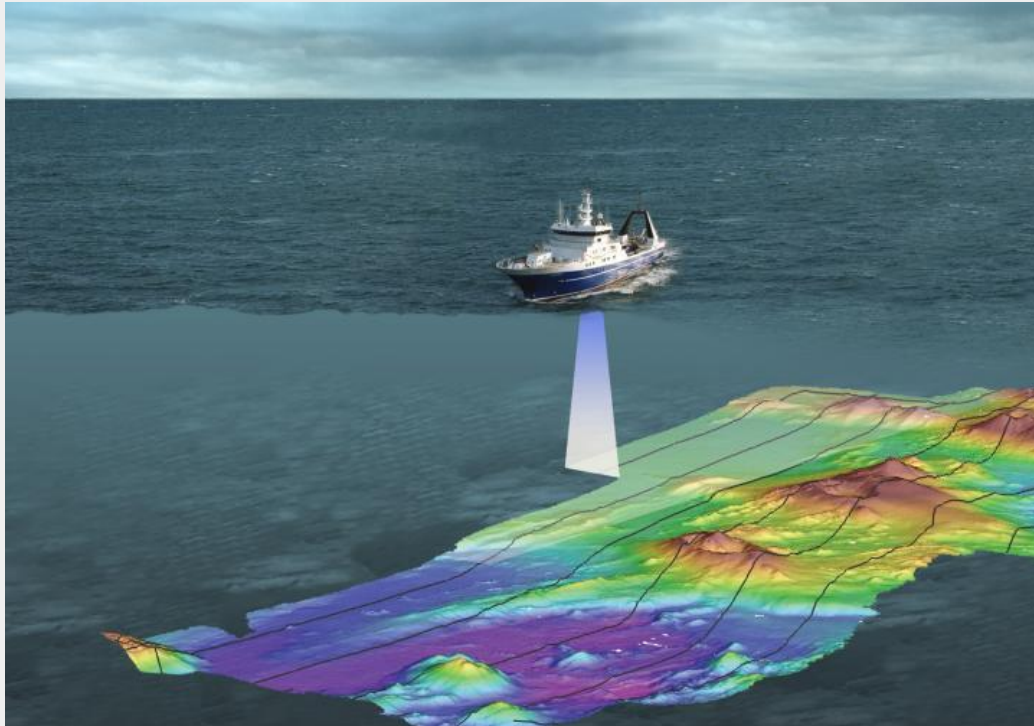
90% are directly or indirectly dependent on GNSS technology

Areas of Positioning Applications

1. Survey
2. Navigation
3. Port Operations
4. Search and Rescue
5. Subsea & Oil and Gas



Survey

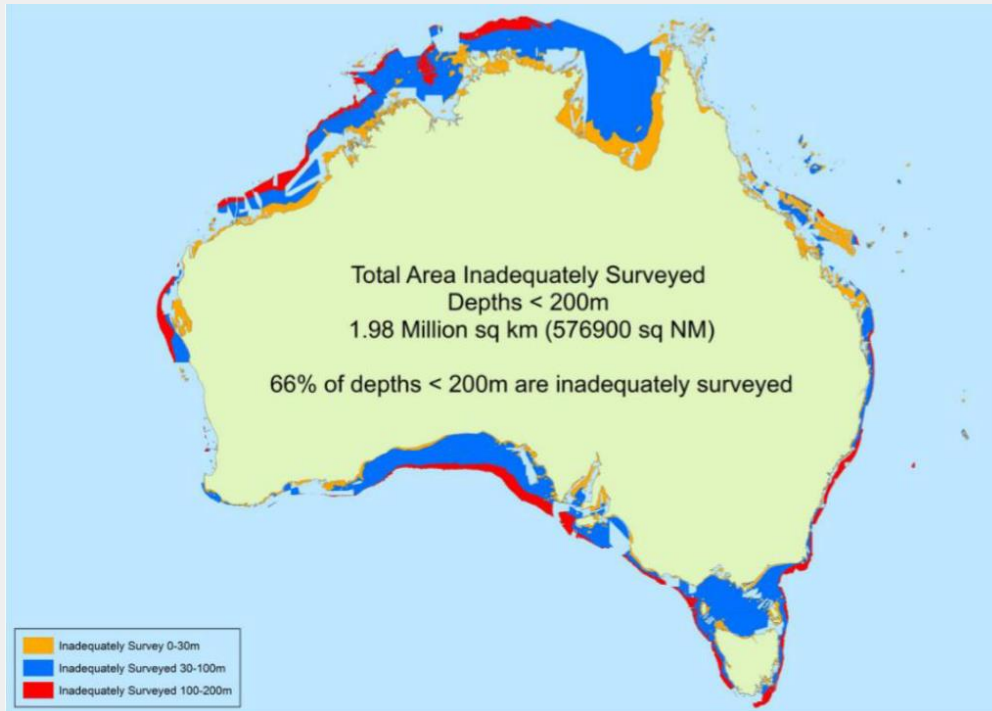


- GNSS to locate in time and space multibeam acoustic measurements for bathymetry
- Faster and more accurate charting has a direct impact on risk reduction to safety of navigation

Federal Government SEA 2400 program.

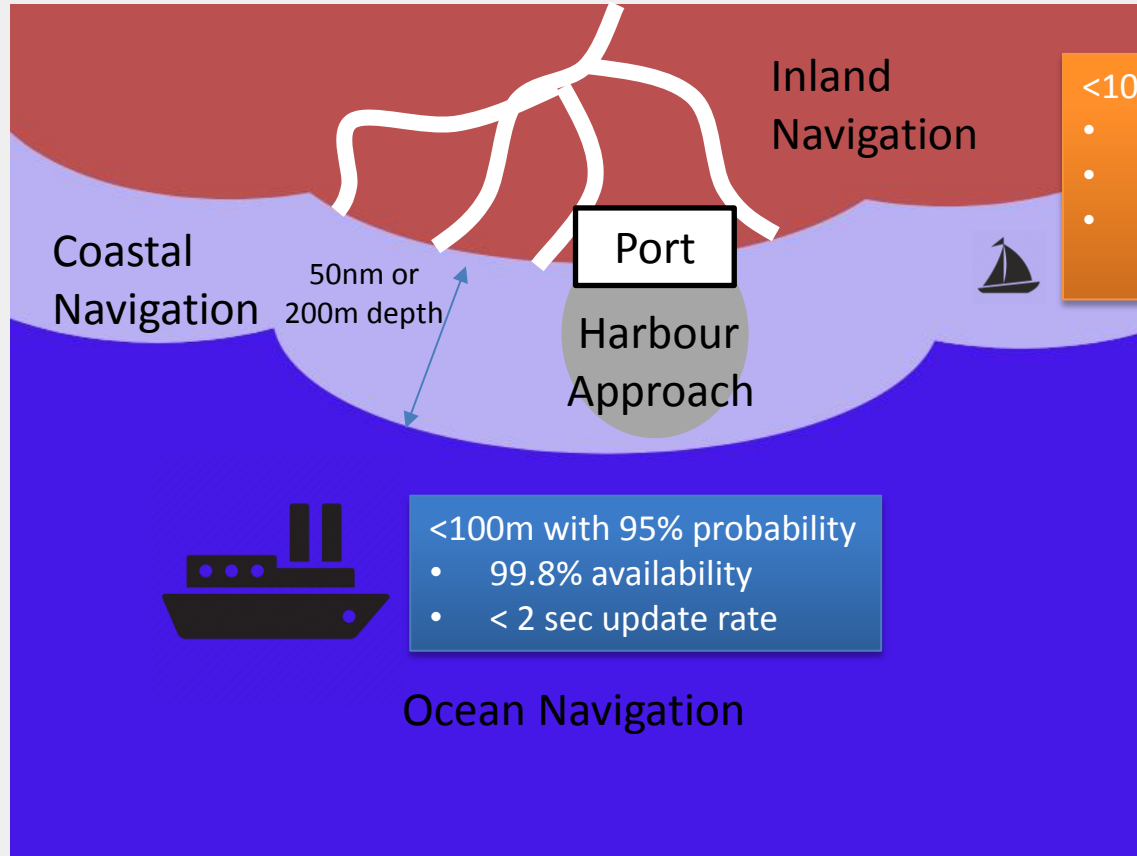
Federal government hydrographic mapping initiative with the goal of identifying and charting currently unmapped and/or poorly mapped waters of Australia

Better
management
of more direct
shipping routes



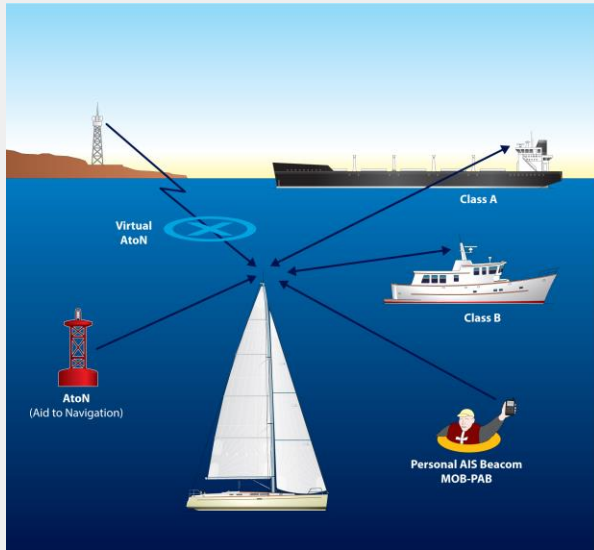
Navigation Requirements

IMO Resolution A1076 (27)



Navigation

- Automatic Identification System (AIS)

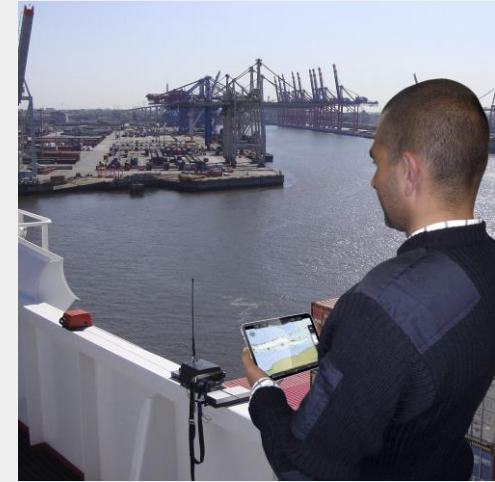
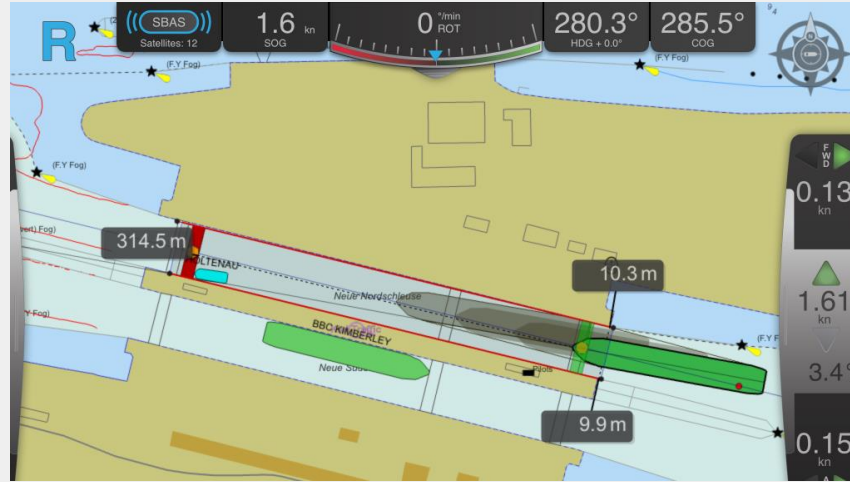


Australian Fisheries Management Authority (AFMA)

- Vessel Monitoring System (VMS)

Navigation

- Portable Pilot Unit

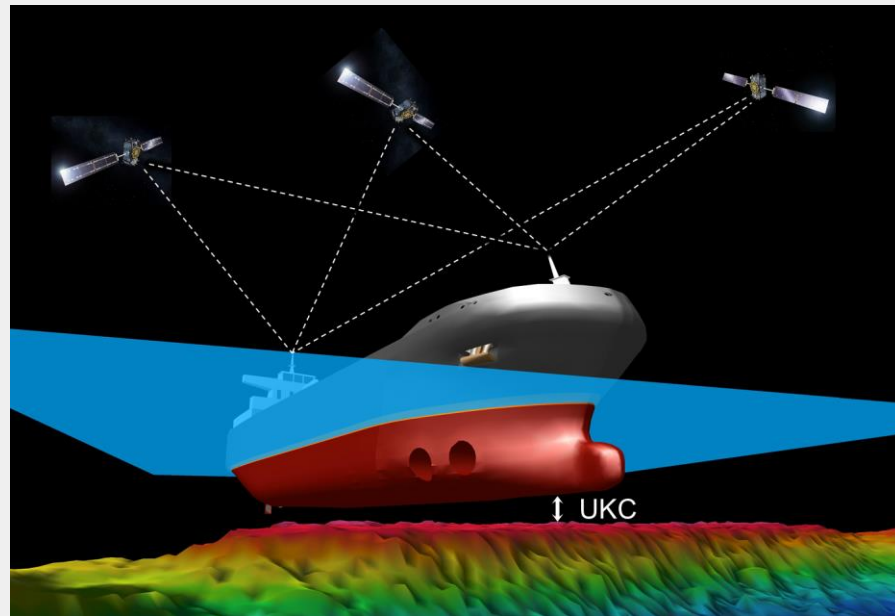
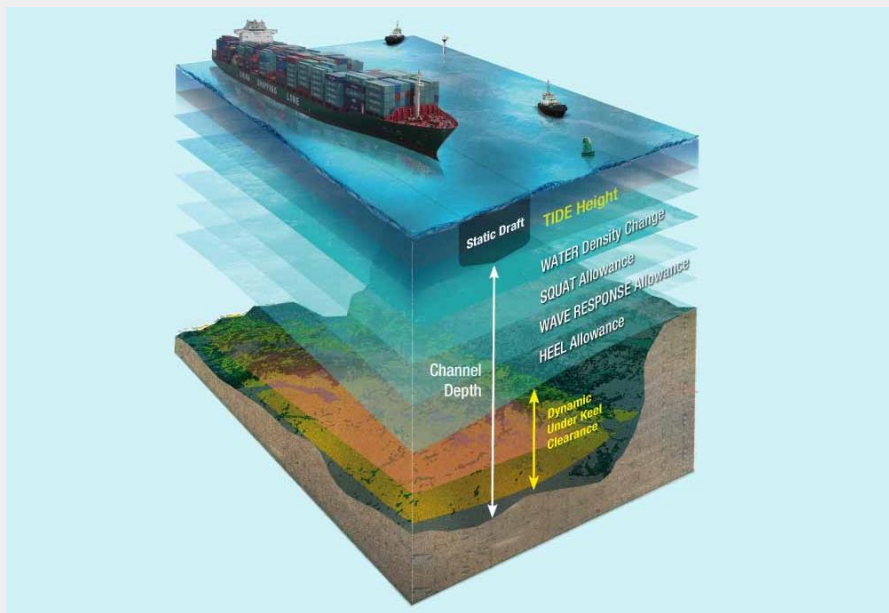


Benefits

- More accurate pilotage and faster berth time for large vessels
- Increased safety

Navigation

- Under Keel Clearance



Benefits

- Reduced dredging
 - Positive impact on port marine biodiversity
- Fuel efficiency and cargo optimisation

Port Operations/ Automation



Benefits

- Efficient inventory and container tracking
- Automated ports to increase port efficiency

Automated Ports in Australia

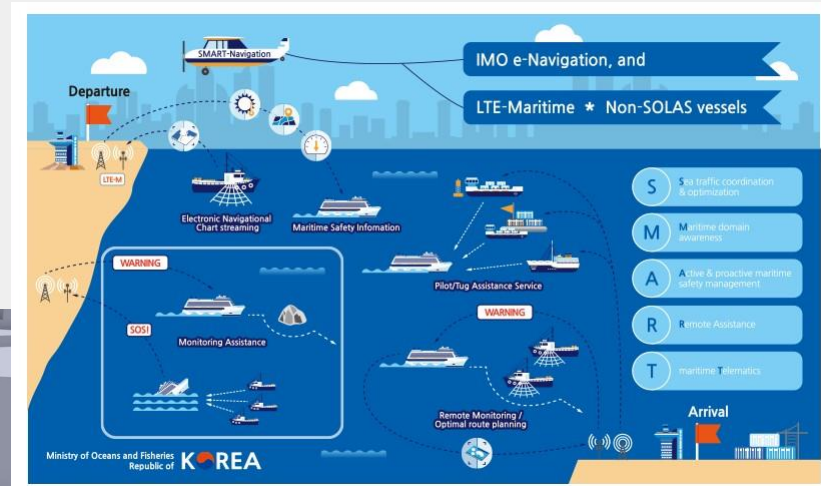
- Victoria International Container Terminal (VICT), Melbourne, VIC
- Patrick Terminal in Port Botany, Sydney, NSW

Future/ Emerging Applications

- Automated Pilotage
- E-Navigation
- Autonomous Vessels

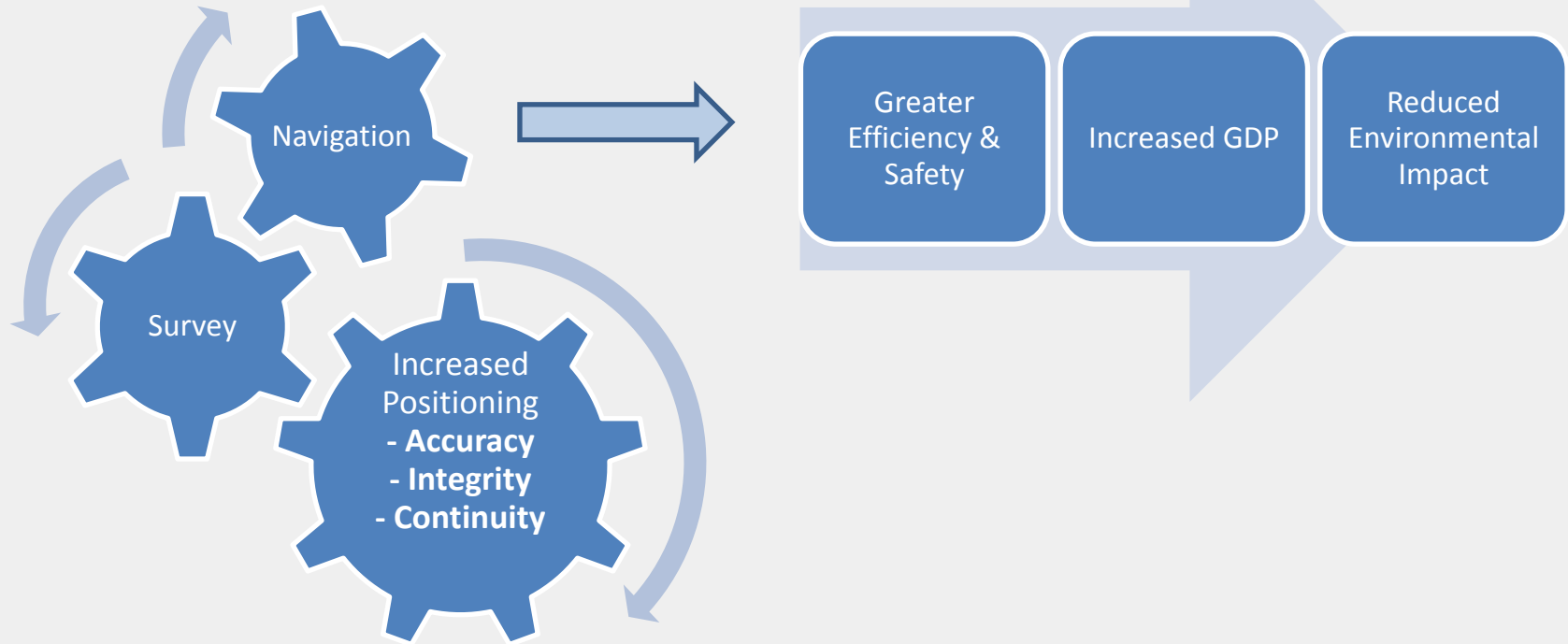


Source: KONGSBERG Gruppen



Source: Ministry of Oceans and Fisheries, Republic of Korea

Conclusions



Acknowledgments

