GMSL Presentation to the CIL- ICPC Workshop on the Protection of Submarine Cables

Submarine Cable Faults Caused
By Other Marine Activities

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Systems

Presenter:

Ian Douglas is the Managing Director of the Global Marine Telecoms Business Unit based in the growing office in Singapore. In addition to having global responsibility for all issues related to Global Marine Systems operations in the telecoms market, this role includes coordinating and supporting our strategic key joint ventures with Huawei Technologies (Huawei Marine Networks), China Telecom, SingTel (ICPL), NTT (NTT-World Engineering Marine Corporation) and others. Ian represents Global Marine Systems on the Board of Directors of these companies in addition to serving on the Global Marine Systems Board.

Prior to this role he was CEO of Huawei Marine Networks (HMN) a joint venture which he was instrumental in establishing following the strategic acquisition of 'Redsky' Technology in 2005. Ian has been with Global Marine Systems since 1995 and called China his home for seven years where, prior to joining HMN, he led the growth of SB Submarine Systems (SBSS), including their expansion into non-telecoms fields including power cable installation and the provision of offshore vessel support to the oil and gas industry.

In 2003 he received the Friendship Award – the highest honour awarded by the Chinese Government for contributions to China.

Ian is a Chartered Engineer and holds an MBA from Henley.

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Introduction:

- GMSL is pleased to be able to present today on Submarine Faults caused by Other Maritime Activities.
- The presentation today will clearly highlight that the biggest threat to submarine cables are, and remain, man-made.
- That technology before and after installation can help to protect submarine cables.
- It's worth noting that on average over the last 10 years there have been 140 submarine cable faults per annum.
- That repairing submarine cables is a highly skilled and capital intensive business that few are aware of!

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What are the main causes of submarine cable faults?

- Fishing.
- Anchors.
- Geological e.g. Earthquakes, landslides and their associated turbidity currents.
- Other 3rd Parties e.g. pipelines/crossings etc.
- System e.g. Cable or Subsea plant failure.
- Unknown?
- Abrasion and Chafe.

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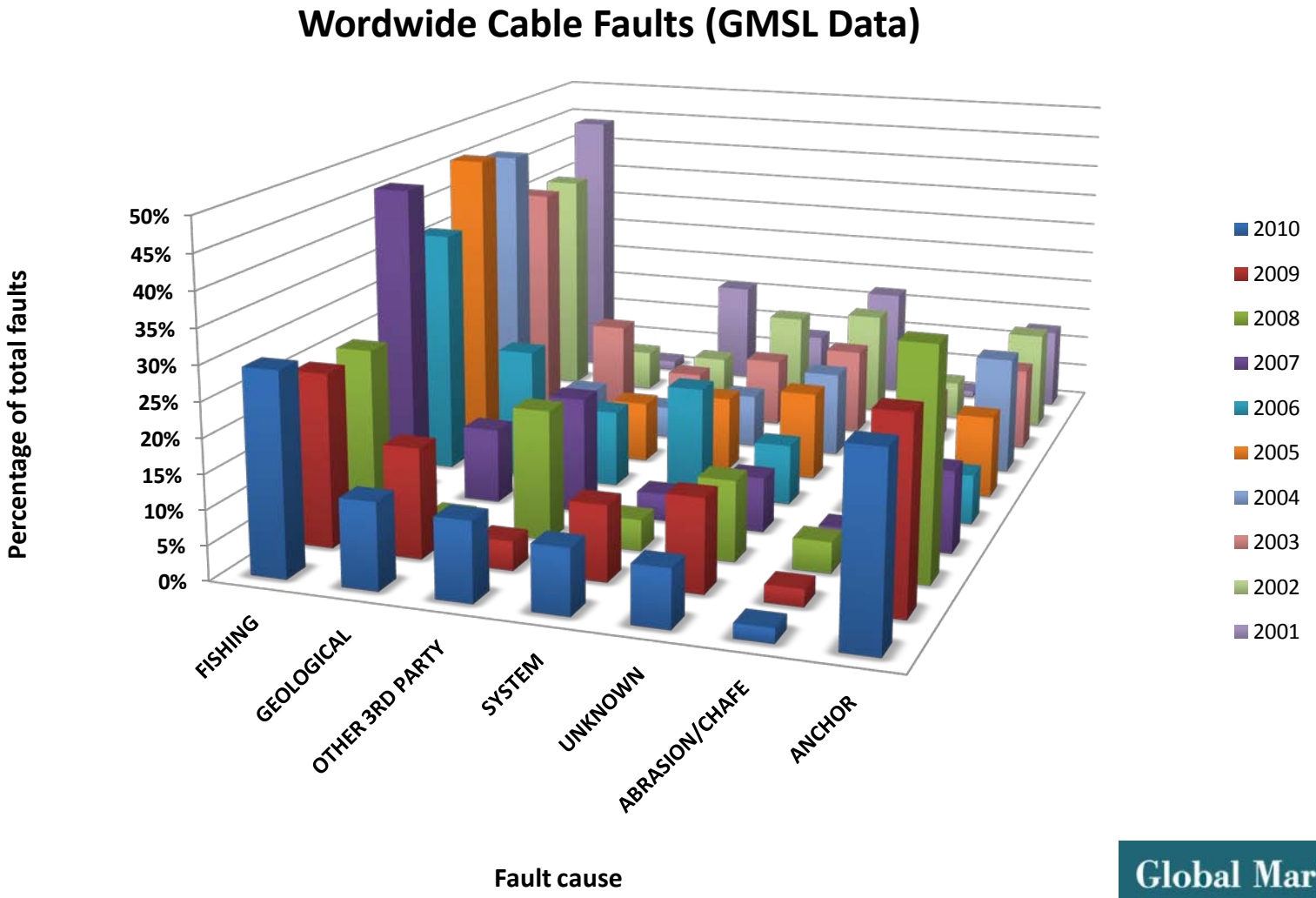
Fault causes in the modern era:



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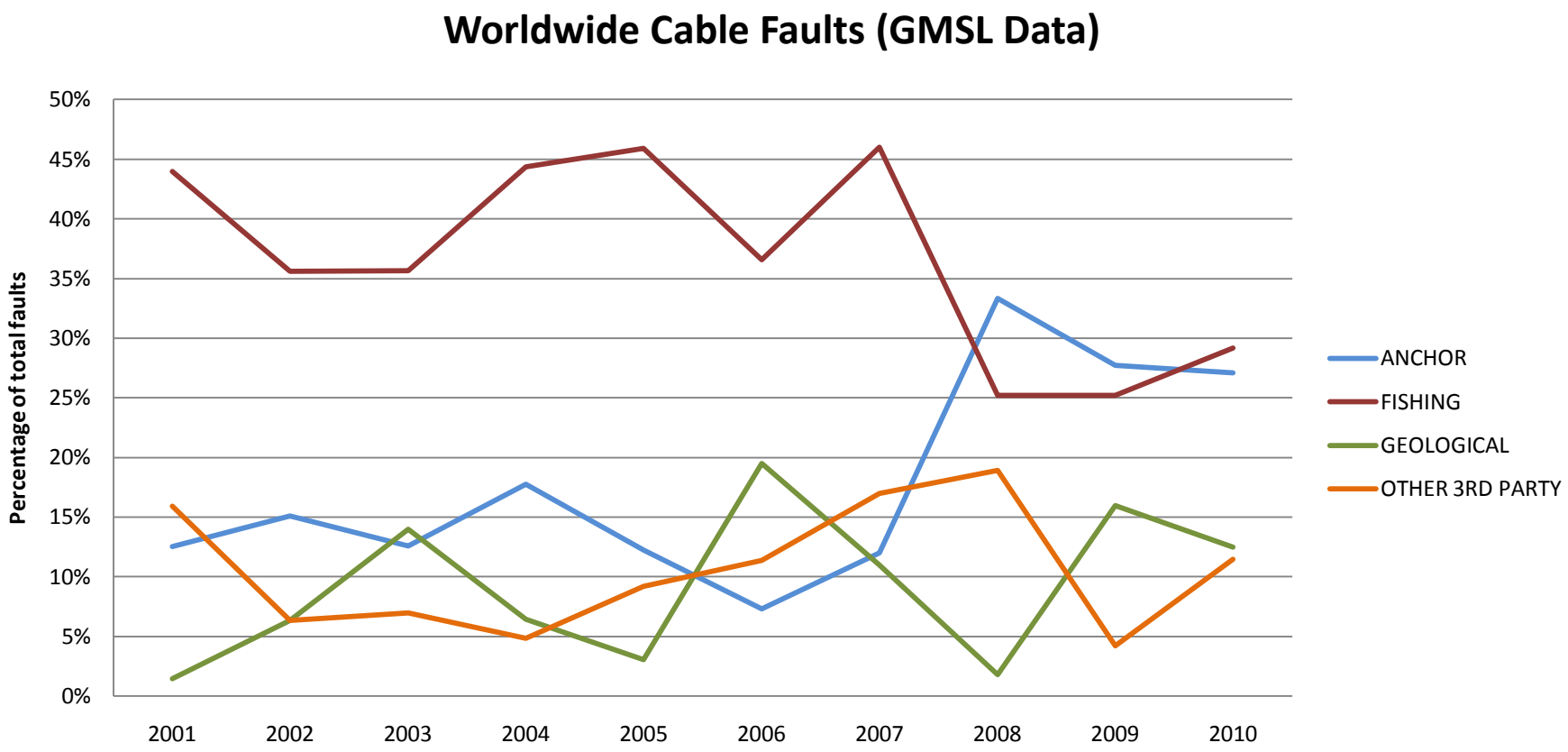
The main causes and trends:



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Fishing Gear Hazards:

- All types of fishing pose a threat to submarine cables, particularly beam trawlers and scalpers whilst in the Asia Pacific region long lining and stow net fishing are a big cause of faults.

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Long line Faults:

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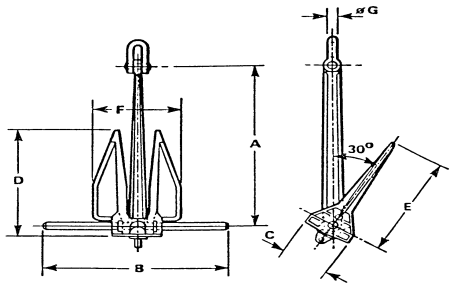
Long Line Fishing & Cable Faults

Anchor Hazards:

- Vessels in port
- Vessels underway
- Vessels lightering
- Vessels in lay up
- Stow Net Fishing


Stow Net Fishing Anchor



Danforth Anchor

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Designed protection:

- Desktop study
- Detailed route engineering
- Surveys and site surveys
- Route revisions and cable selection
- PLGR
- Plough Installation
- ROV PLIB

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Post Installation Protection/Monitoring Options:

- AIS – Automatic Identification System
- VMS – Vessel Monitoring System (Fishing)
- Other options:
  - Cable Corridors
  - Guard Boats
  - Coastguard
  - Harbour Master (Port anchorages)

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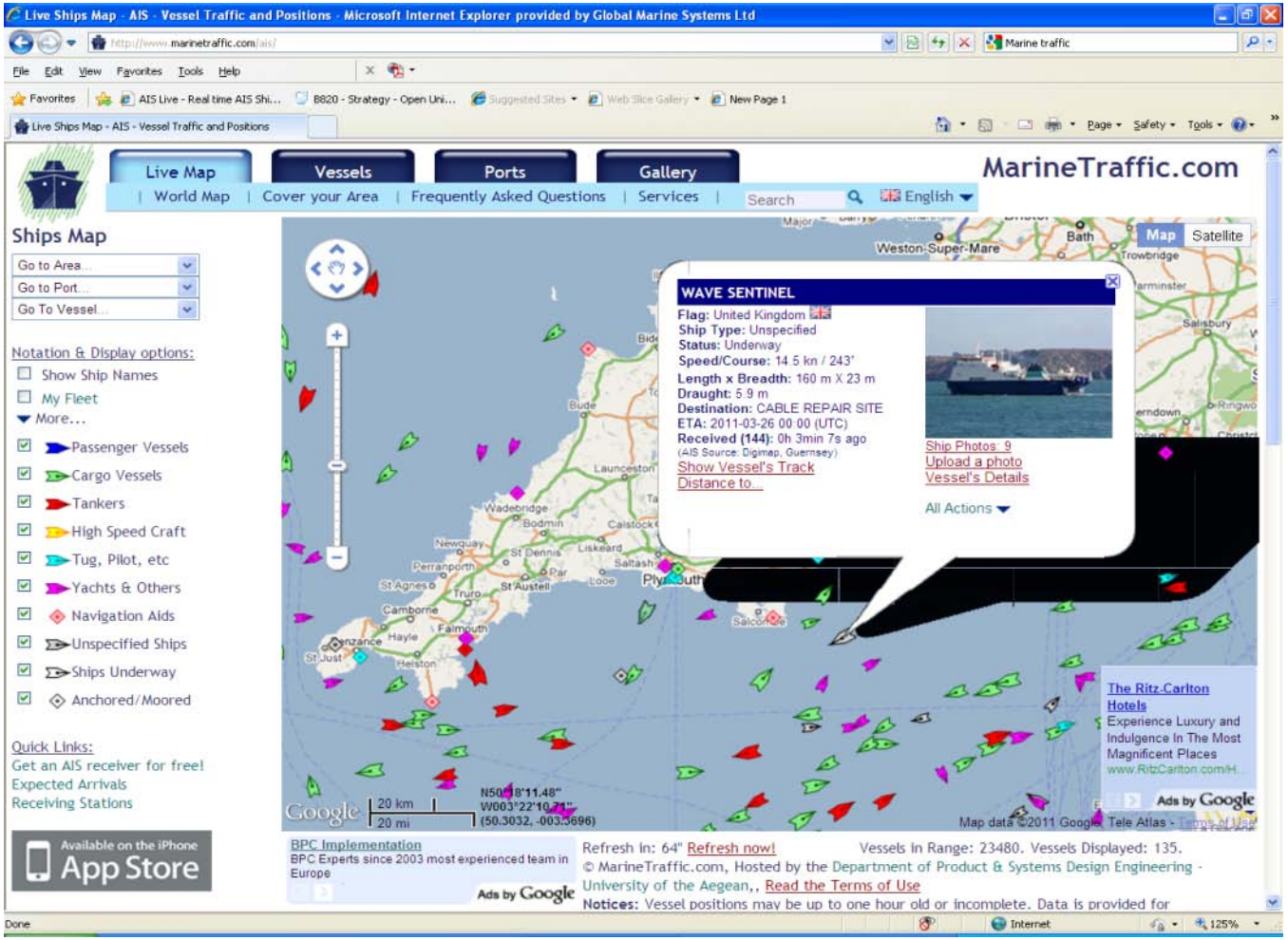
In Service Monitoring with AIS:



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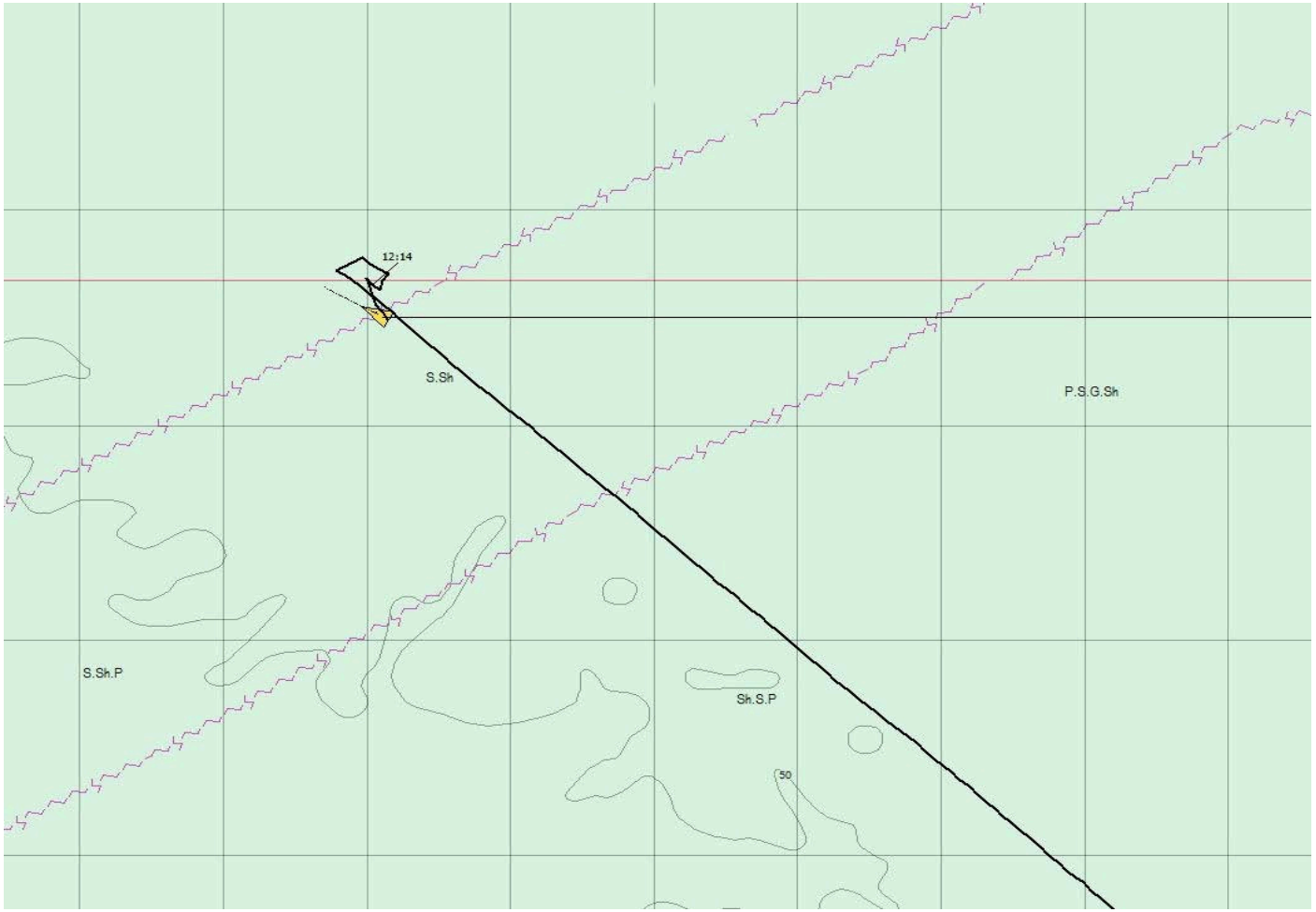
Tracking anchor faults with AIS:



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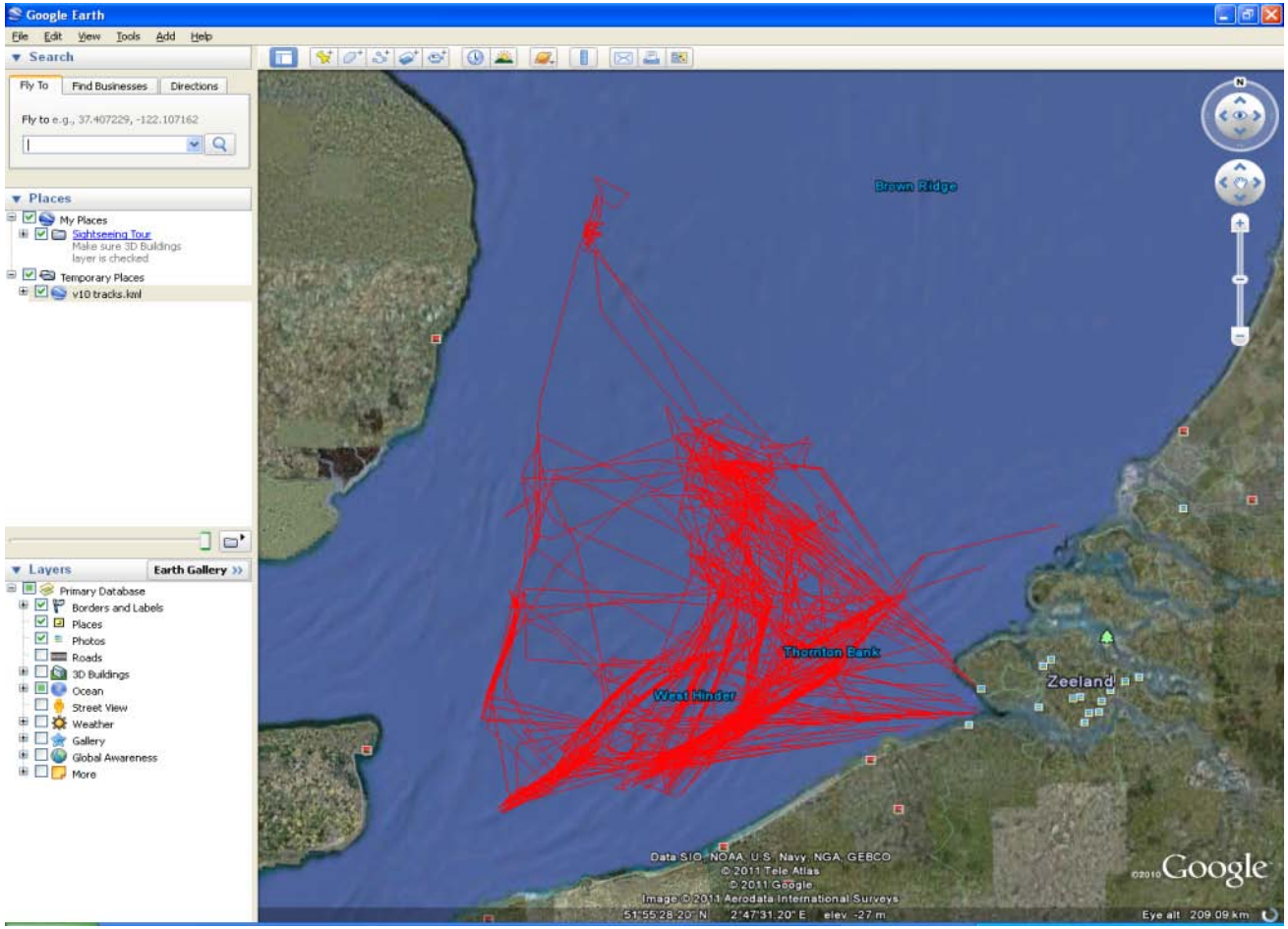
In Service monitoring with VMS



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Acknowledgements:

- Google
- The SCIG
- Marine Traffic Com
- IMARES
- Infoterra
- SBSS
- BT

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