Concept development of Future Maritime Geospatial Capabilities

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Who are we?

We meet national, defence and civil requirements for navigational and other hydrographic information.

- We consistently output high quality, safe products (digital and analogue) to meet SOLAS requirements
- We are part of the UK Government
- We have over 210 years’ experience
- We focus on our customers

70% of world shipping use and rely upon our charts and publications
What do we do?

A world renowned organisation supplying navigational products and services.

- We produce and maintain a global series of charts and publications
- We advise the UK Government on policy formation
- We represent the UK at International Hydrographic Organisation (IHO) and other international forums

We produce over 3500 charts and 160 publications in digital and analogue.
Our mission

To meet national, defence and civil requirements for navigational charts and other hydrographic information in the most efficient manner.
Existing Products/Services

- Routeing
- Reporting
- IRTC
- Q Route

Vessel Tracking

Requirements

Threats
- (Deconflict)
- Mines
- Pirates
- Natural Disaster
- Political
- Armed forces

FORECAST (Met) LAYER
- Tracking (Pattern of Life) LAYER
- Tracking (RMP) LAYER
- USER LAYER

Interface

COLLECT

MANAGE/ANALYSIS

PROMULGATE

Paper Charts

Digital Charts

Paper Publications

Digital Publications

SRIMS

Radio Navigational Warnings

Guidance bulletins
Use Case

- Ships tracks against customer records against charts and comms capability
  - Disaster support & ship notifications
  - Effects of shipping on marine mammals and therefore avoidance by Navy Vessels of negative effect
  - Who is using our products on certain routes or areas of the world that need coverage improvement/more bespoke products and support.
  - Where product coverage needs to improve
    - New ports/legislation/ship-types
Customers using our flagship product
Ice-margins that can affect shipping
Significant weather events that affect shipping
Bringing together ARGO buoy tracks, sea temperature model, shipping and then running analysis using standard grid formation.
Kernel Density Analysis Application
Creating the tool
Enforcement of MARPOL & SOLAS restrictions
Problems

- **Worldwide data processing**
  - slight detachment from GEP original mandate of multiple sensor feeds to an operation whereupon mass data drops had to be run through a cache to drip-feed the data into the database.

- **'Purchased' Amazon WS EC2 capability**
  - We had a package that delivered the core functionality with data processing and analysis capability
    - We broke it when attempting multi-point geofence trigger processing and analysis.
Future Work

Network Analysis
- Route analysis
- Traffic density/type/noise

Scenario planning
- Choke point analysis
  - Event-driven Tracking
  - Effects
  - Contingencies

Hook-up into BAU products
Summary

- #one
- #two