

Parallel Session 1 – Data Analytics

IMS Group UCM#13

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- Data analytics:

- Process of analysing raw data to provide more meaningful insights and conclusions about that information.
- It aims at processing “raw” data for finding patterns and relationships by applying, inter-alia, statistical techniques.
- Many of the techniques and processes of data analytics have been automated into processes and algorithms that work over raw data for human consumption.

- Big Data:

- “High-volume, and high-velocity and/or high-variety information assets that demand cost-effective, innovative forms of information processing that enable enhanced insight, decision making, and process automation”.
- Large volumes of data that cannot be processed effectively with the traditional applications that exist.

- The two terms reflect the resources used to analyse insights which can lead to better decisions at both strategic and tactical level, the automated processes & techniques involved in gaining insights into a certain dataset as well as the usage of queries and data aggregation procedures to achieve these insights.

- Data analytics processes and techniques might also include the adoption of Artificial Intelligence and eventually Machine Learning algorithms.

Examples of information products include time series and geo-spatial analysis to detect¹:

- Port calls at a global scale;
- Patterns and trends of non-cooperative vessels (VDS targets) at regional level;
- Patterns and trends of SSN EIS Incident information (banned, failed notification, insurance failure, lost found containers, others, pilot or port report, POLREP, SITREP, VTS infringement, Waste);
- Commercial routes per ship and per type, area, season of the year, new emerging routes, chokepoints and congestion areas (high traffic density points with a high number of manoeuvres by ships), average duration of voyages and port activities;
- Tracking baseline patterns and identifying key fisheries activities;
- Analysis of vessels with similar routes/ activity patterns for the prevention of accidents or unlawful acts at sea;
- Analysis of the navigational status (reported in AIS) of the ships;
- Analysis of the interrupted transmissions from the ships on-board equipment (gaps in the position reports);
- Trends in ABM detections (At Sea Encounter, Drifting, etc.) over given areas and periods;
- Detect and update port and mooring areas based on vessel position analysis.



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