



HELCOM AIS EWG 31-2020

TDM service developed by EMSA

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Department 3/ Unit 3

Zoom meeting / 9-10 June 2020



Background

- **HLSG DM2** (Brussels, 20 June 2017): mandated EMSA to start preparing for providing traffic density maps as a new service
- **HLSG DM3** (Brussels, 28 February 2018): approved the methodology and agreed on the services to be provided to EMODnet
- **HLSG DM4** (Brussels, 11 December 2018) agreed on granting access to additional users (e.g. EEA)

TDMS concept

- Ship routes restoring method
- Only AIS data (S-AIS and T-AIS)
- The ship's identity is not disclosed
- **Areas:** North Sea/ North Atlantic; Atlantic; Mediterranean Sea; Black Sea; Baltic Sea and All Europe
- **TDM periods:** previous month/ season/ year
- **Ship type ranges (AIS):**
“Passenger” (60 - 69); “Cargo” (70 - 79); “Tanker” (80 - 89); “Fishing” (30);
“All Other” (all other codes); “All Traffic” (all monitored codes)

Methodology

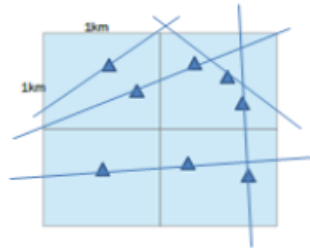
1. Area is divided in grids with 1km*1km cells



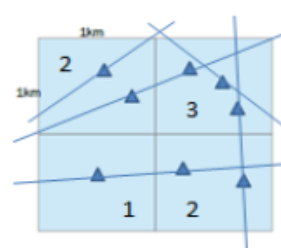
2. The aggregated SPD (position report) of the distinct ships (MMSIs) are overlapped onto the grids



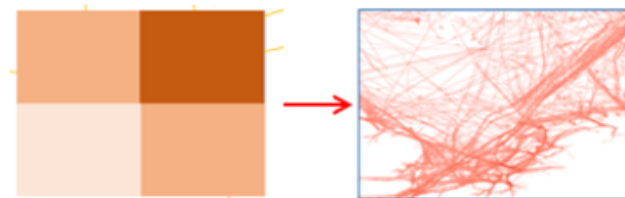
3. The reported positions are connected by line segments, creating polylines (representing ship routes). Polylines are sorted by ship types.



4. Polylines (ship routes) which cross each cell are counted (every time the polyline intersects the cell)



5. The colour classification is applied. Cells with higher number of polylines (ship routes) have darker colour



Results achieved



- The TDM service is available since August 2019
 - Data files to EMODnet
 - Colour maps to the SEG application

TDMS-2: background

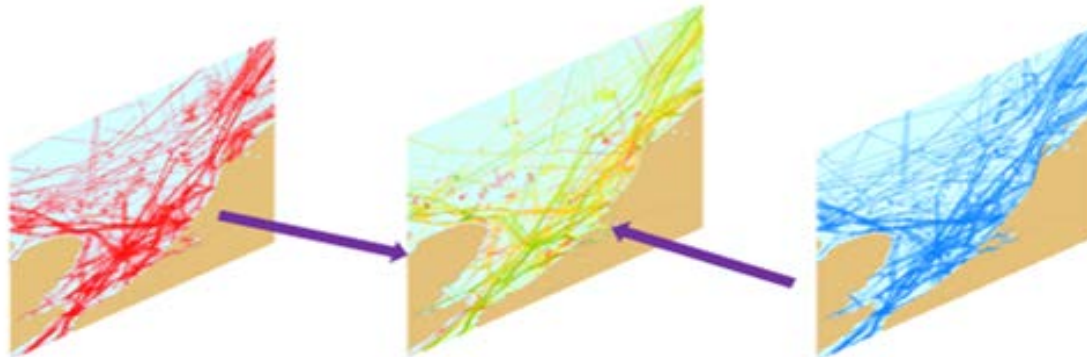
- HLSG DM6 (Brussels, 20 January 2020) agreed the planned enhancement of the service
 - new types of maps
 - new services
- Member States were invited to provide the areas of interests to be included in the service
- Operational: by the end of 2020

TDMS – 2: new types of maps



- **Comparative TDM:**

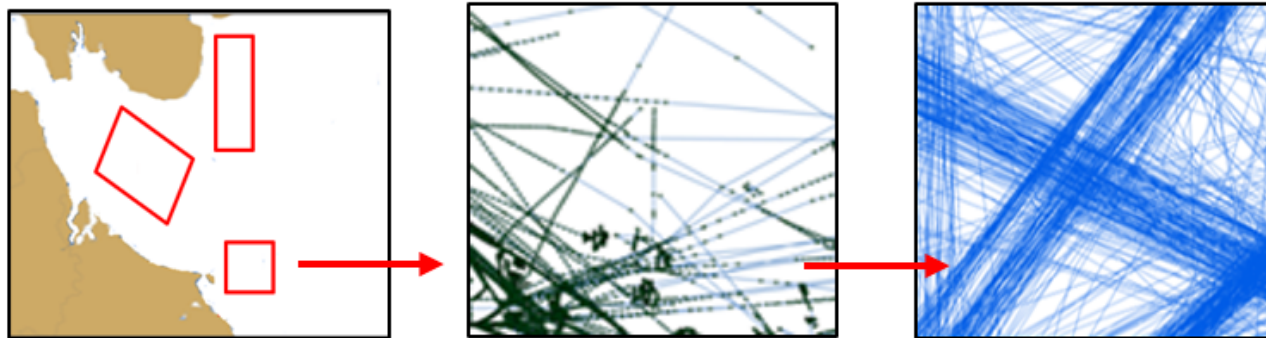
- presents changes in the traffic density between two selected corresponding Standard TDMs
- constructed upon the SEG user request (on “fly”)
- comparing values from two selected TDMs of the same type, area, time category and ship type range, but different time periods
- differences in values: lower density - equal density - higher density - zero density



TDMS – 2: new types of maps

- **Vector-type TDM**

- presents routes of ships (as polylines) within the predefined SAI
- TDMS methodology but excluding some steps (e.g. the routes values aggregation per grid cell and presenting by a colour code)
- for the predefined areas (SAIs) and the TDMS time categories (e.g. month), but only for “All traffic”

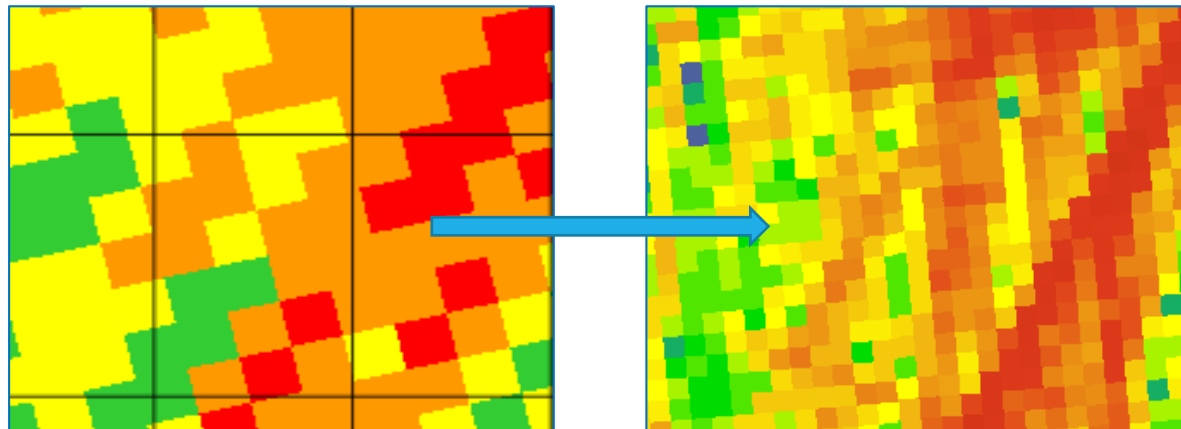


TDMS – 2: new types of maps



- **Detailed TDM**

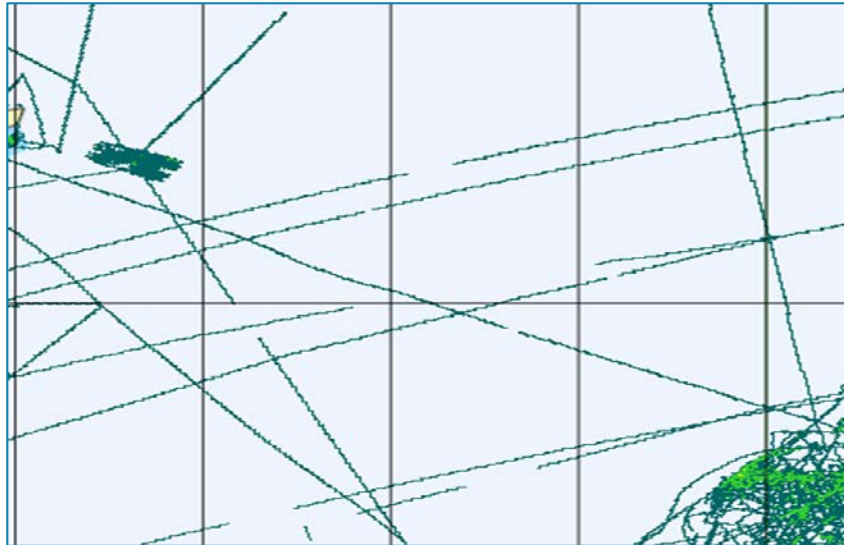
- a traffic density per grid cell
- TDMS methodology except the grid cell size (i.e. 200x200 m.) and the areas (i.e. SAIs)
- all time categories (i.e. month, season, year) and ship type ranges (i.e. Cargo, Tanker, Fishing, Passenger, All Other and All Traffic)



TDMS-2: new services

- **TDMS download** – for Standard and Detailed TDMS
- **TDMS generating “on-fly”** – for Comparative TDMS
- **Additional elements of statistics** – for Vector TDMS
- **Access rights:**
 - View TDMS
 - Download TDMS

- **Data quality**



- **“Routes availability or TDMs quality?”**



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