

Innovative Geospatial Solutions towards a Sustainable Maritime Trade

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SUMMARY

The maritime traffic volume has increased substantially in the last years and the growth rate is expected to ascend even further in the years to come. The amount of gas emissions from the global maritime trade and the ship accidents risk is intensifying proportionally. These two elements have a significant global impact on the marine environment and the climate change. We will explain how innovative geospatial solutions, such as vessel and voyage planning or the eNavigation International Maritime Organisation concept can help reduce the maritime trade environmental footprint as long as a good cooperation is maintained between the private and public sectors. Vessel and voyage planning solutions integrate several geospatial data types to provide the navigator with an optimised ship route. When planning the voyage, parameters like the vessel's structure, the weather prediction and of course the hydrography and cartography, are taken into account automatically by the optimisation algorithm. It is then possible to ensure an efficient and safe voyage, while minimising the gas emission of a ship. Such an analysis can be made before the voyage using predicted parameters and the available nautical charts database, or also real time at sea with updated information received directly on board. The eNavigation concept also works towards enhancing safety of navigation and environmental protection globally. We will briefly present the eNavigation framework, together with existing intelligent geo-information integrated systems capable of providing critical navigational and operational information to the mariner. This information needs to be delivered in a timely manner by combining real-time geospatial data streams with marine vector cartography. Automatic routing, weather limitation zones definition and checks for high risk features at sea, are just a few of the geospatial solutions now made available to the ship's captain. Adequate display of such information on the bridge of a vessel brings improved situational awareness to the navigator, and the risk of accidents at sea, like grounding or collision, can therefore be significantly diminished. We will finally underline the importance of private-public cooperation in furthering the sustainability and safety of the maritime trade. Public bodies produce reliable geospatial information which is a necessary data inputs for the above mentioned innovative maritime solutions. Private and public sector need to cooperate even more closely to provide the mariner with the best of both worlds – reliable quality hydrographic data combined with innovative efficient geospatial solutions – thus minimising the environmental impact of the growing maritime trade.