

# Title Abstract: Is '5G' for e-Navigation and VTS?

By: Mr Jan-Hendrik OLTMANN | Federal Waterways and Shipping Administration

Contact e-mail: [jan-hendrik.oltmann@wsv.bund.de](mailto:jan-hendrik.oltmann@wsv.bund.de)

Jan-Hendrik Oltmann is senior strategic adviser to the German Federal Waterways and Shipping Administration. He received a master degree in Electrical Engineering from Darmstadt Technical University, Germany, in 1992. Since he joined the Administration in 1993, he applied diverse technologies to the maritime domain, comprising terrestrial radio navigation, transponder technology, and ICT system architecture. He had an active role in the developments of the AIS, the overarching system architecture for IMO's e-Navigation strategy, and internationally harmonised data structures. He managed several domestic and international projects, chaired several international working groups, and is speaker at a variety of international conferences.



## Abstract:

'5G' is the buzz word presently in telecommunications creating the impression that with its advent all communication dreams will come true. But what is the real potential of '5G' for the maritime domain, including e-navigation and VTS, when considering all relevant aspects?

'5G' is not only sophisticated and bandwidth-wise cutting edge radio communications technology – thus incurring certain inherent physical limitations; but also cloud computing – thus incurring certain IT-related constraints, such as cyber-security and data privacy considerations. Also, it is not big industry consortia's playing ground alone but also highly internationally harmonized and regulated: At the ITU '5G' is called IMT-2020, and there exists an elaborate international regulation and standardization framework.

This latter aspect is of particular relevance for the topic under consideration: E-navigation and VTS are both demanding and also driving international harmonization and standardization in their respective, partially overlapping domains, too.

Having thus established the capabilities and limitations of '5G' somewhat more realistically than at buzz word level, potential applications in the maritime domains of e-navigation and VTS are addressed. Fields are pointed out where '5G' may add specific value to those domains and may thus contribute to the development of those fields in the future.