Abstract: Maritime organizations like Navies and Coast guards are increasingly exploring net-centric operations using multiple relatively small and possibly unmanned vessels. Two examples of such operations are ‘distributed surveillance’ in which a large operational area is collectively covered by multiple, preferably unmanned, platforms, each carrying sensors with limited coverage , and ‘stand-off mine counter-measures’ in which the dangerous task of mine detection and neutralization is performed by an unmanned surface vehicle while personnel controls and monitors the operation from a safe distance. Communication among the platforms involved is indispensable for such net-centric operations. And because video and imaging are rapidly becoming the key information carriers in such operations, this communication needs to be broadband as well. However, the maritime environment poses challenges for net-centric operation, the dominant one being the long range between communicating platforms. MaritimeManet is a wireless network concept that addresses these challenges. It provides the currently missing capability of high-speed, long-range, ad-hoc communication among maritime vessels. MaritimeManet has been developed with commercial off-the-shelf hardware and opensource software, and has been successfully validated in various demonstrations at sea.

Speaker's bio: Jan Laarhuis (MSc 1989, PhD 1995) joined Thales Netherlands in Hengelo in 2004. He has first been working as a radar engineer on topics like model-based radar design and radar waveform design. As of 2006 he is a systems engineer at Thales’ Naval division in Hengelo, where his primary interests are system-of-systems and distributed systems. He has been involved in bids for maritime safety and security systems, and has worked on architectural and design aspects of large, distributed maritime mission systems. In his next position as innovation manager he was the inventor of various patented concepts and technologies to be used in distributed maritime mission systems. He has managed these innovations over the past years towards productization.

In addition, as of 2013 Jan has a part-time appointment as a professor at the Saxion University of Applied Science in Enschede. In this role, he manages applied research projects that develop and demonstrate systems concept.

Before joining Thales, Jan has been working for fifteen years in telecommunications research and development at KPN Research (TNO Telecom), where he spend most of his time to management of innovation projects and on the development of novel communication concepts. Jan received a PhD-degree in electrical engineering from the Twente University on the topic of all-optical networking