

The Road towards Autonomous Shipping

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Digitalization is driving disruptive change in shipping that will open up new opportunities for novel business models and new players, but will also threaten some of the established industry norms and foundations.

Digitalization, or as we call it in Rolls-Royce – Ship intelligence - covers a variety of technical topics, such as increased automation, smart controls, robotics, optimization, decision support tools, health management and predictive maintenance schemes as well as remote and autonomous operation.

Ship intelligence will introduce a new era in shipping and will change all parts of shipping, not only the technology and hardware applied, but also the way ships are operated and managed as well as the business models.

Ship operations will start to treat ships as integrated parts of larger production processes or logistic chains with focus on total asset utilization and end customer profit optimization - Industry 4.0 thinking in marine. Ship Management will move towards “total awareness” with remote monitoring, support and operation becoming a vital part of the operation. New offerings around Power by the Hour and Intelligent Asset Management will emerge on the scene. The ship intelligence era will also enable new business models based on on-line market places and digital alliances.

Ship intelligence will also be the enabler for the development of remote control and autonomous solutions that will be introduced into shipping in the near future. Today there is a lot of R&D focus on unmanned airplanes and driverless land based vehicles and society is becoming more accepting of these game changing solutions. It is only a question of time as to when shipping will follow in the same path. The first unmanned commercial ships will likely be locally operated vessels, such as tugs and road ferries, since single flag states can permit their operation before international regulations are in place.

Development projects have shown that most essential technology building blocks are already in place, but practical marine solutions will require some further development. The roadmaps indicate that the first remote controlled commercial ship demonstrator could hit the water within 2-3 years. The main driver for autonomous ships will be improved cost efficiency and safety as well as the possibility to introduce totally new business models and concepts enabled by R&A technology.

Smart solutions and intelligent technology will redefine shipping!