Does Automatic Identification System information improve efficiency and safety of Vessel Traffic Services?

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Abstract

A universal GPS-based Automatic Identification System (AIS) on board ships is being implemented rapidly. The system is expected improve safety of navigation by providing ships with accurate information about their position and the position of other ships. The system is also expected to improve efficiency by providing to ships and to competent authorities information about a ship and its cargo. A study of consequences of AIS for Vessel Traffic Services (VTS) was carried out using a test-bed that consists of a mobile VTS simulator and other demonstrations of the implications of AIS for VTS systems. VTS operators in a number of European ports participated in the study. Operators ran test scenarios and discussed opportunities and threats posed by AIS in a port environment. Several issues were addressed in the study including Resource Management, Incident and Calamity Abatement, presentation of information, and data reliability. These issues were related to tasks and responsibilities of operators in the different ports. The results of the study form the basis of recommendations for the implementation of AIS in a future VTS system were AIS information is combined or merged with currently available information from radar and other sources.

Introduction

Novel technologies are being introduced in the maritime domain to support in ship navigation aboard ships. Implementation of a GPS-based Automatic Identification System (AIS) is required under SOLAS (SOLAS V, regulation 19.2, as amended 12/13/02) for all new ships built after 1 July 2002, and is mandatory being fitted on new and existing ships in the next years. The required AIS system must be capable of providing information about the ship to other ships and to coastal authorities automatically. AIS is an autonomous and continuous broadcast system, operating in the VHF maritime mobile band. It is capable of exchanging information such as vessel identification, position, course, speed, etc. between ships, between ship and shore through information broadcasts. It is expected that the system can provide many benefits, including increased situational awareness, improved navigational