Research and Simulation of ITS (Intelligent Transportation System) Enabled Life-Boats Tracking and Control System for Passenger Vessels.

Sellapperuma S.P.[1*] and Rizwan Akhtar[2]

[1] *Computer Unit, Faculty of Agricultural Sciences, Sabaragamuwa University of Sri Lanka*
[2] *School of Electrical and Electronic Engineering, Jiangsu University of Science and Technology, China*
**sathuta@agri.sab.ac.lk*

People have motivated to travel on passenger vessels due to its benefits, like cost-effective and availability. However, it is necessary to consider random weather conditions and technical issues to overcome the distress condition on the water. Hence, guided navigation-enabled life/rescue boats are the most appropriate solution to address the above situation. GMDSS, like safety management systems, supports only the passenger vessels or ships which are going via open oceans and work in distress situations with a passenger capacity is more than 12. The proposed system has given a solution to rescue boats with GIS-enabled "guided self-driven" till lifeboats reaching to a pre-decided destination. The control layer (control centre) coordinates the entire rescue session by communicating with the lifeboat via the boat unit fixed into the life boat/s. Moreover, this layer operates over an ITS system with an API, which functions over the establishment of the links between various units of the system and their functions, like weather forecasting and two-way communication, to take appropriate decisions for the boats during the rescue session. GPS unit and an application embedded terminal have been made up with Raspberry Pi-4 circuit board installed Raspberry PiLite-OS. The web application built with GIS visualization maps will provide live guidance to rescue boats. Boat unit integrate over the Intraoperative layer and provide positioning, communication, and identification of individual boat units within GPS satellites and a maritime Internet connection (Inmarsat Satellite or GSM). Real-time motions and boat unit tracing will be filtered with a Bayesian process ($Wt = AW t-l + Y't$) to generate the most accurate positioning. Thus this study has focused on giving a solution to the rescue session of the distressed vessel using lifeboats to save human lives in a centrally controllable system.

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