

JUNKFUEL: SHIP SLUDGE DISPOSAL MANAGEMENT SYSTEM FOR JUNK LICENSE HOLDERS IN SRI LANKA

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Abstract

Sri Lanka consists of a thriving maritime industry with numerous ships calling at its harbors and ports for trading and other activities. Along with the benefits of this industry, there is an issue of waste generated by ships, particularly sludge, posing a significant environmental and health hazard. In response, the government of Sri Lanka permits Junk License Holders to engage in ship sludge disposal in an environmentally friendly manner in accordance with international standards and regulations. However, lack of competition in the industry, heavy manual intervention, being used to traditional methods and complexity in authorization process from Government parties have caused the process of ship sludge disposal followed by Junk License Holders to be highly inefficient. As a result, specifically, the temperature measurement process in dewatering, inventory management and assurance in receiving sludge orders for disposal are at risk causing health issues to people working in this industry, unnecessary time consumption per order, errors due to manual intervention and financial losses due to bribery to authorization parties and expertise.

The aim of the project is to analyze the current process followed by Junk License Holders from the point they receive permission from Government parties till ship sludge is dewatered and converted to furnace oil, so that it can be distributed to customers. To learn more about the available solutions and currently employed technology in the sector, a literature review was conducted. Interviews were conducted with Junk License Holders and other stakeholders involved in the disposal process to offer a viable solution.

The results led to identify the need for a common portal for Junk License Holders that will adhere to all requirements raised by users. As a result, an IoT integrated information system was identified as the most appropriate solution for proper management of business information that will increase the operational efficiency and minimize fraudulent activities from receiving sludge orders till, they are issued as furnace to customers.

Keywords: Ship sludge disposal process, Junk License Holders, Improper temperature measurement, inventory management, complex authorization, IoT, Information system.