SAFER:
Sensemaking Analytics For maritime Event Recognition

With the expected increase in maritime vessel traffic and capacity, MPA is working to ensure that the Port of Singapore is safe, secure, efficient and sustainable.

Project SAFER is a collaboration between MPA and IBM Research to develop and test-bed new analytics-based technologies aimed at improving maritime and port operations to cater to increasing growth in Singapore's vessel traffic.

The SAFER system is capable of automating and increasing the accuracy of critical tasks that previously relied on human observation, reporting, Very High Frequency (VHF) communication and data entry.

Automated Movement Detection

Through cognitive analytics and advanced filtering, vessel movement is automatically identified, thereby reducing the workload of MPA officers while simultaneously increasing the accuracy of the movement locations and timing

Pilot Boarding Detection

Enables MPA to automatically detect pilot boarding time. This provides an efficient way of monitoring and validating pilotage service levels, reduces staff workload and speeds up dispute resolution

Infringement Analytics

Employs a targeted approach for detecting suspicious or abnormal vessel behaviour through machine learning based vessel models, thus improving the efficiency of a Port Inspector's daily routine

Detection of Vessel Entering Prohibited Areas

Aids MPA in enforcing safety and security by creating a virtual fence in port waters to identify and localise unauthorised entry into prohibited areas

Prediction of Vessel Arrival Time

Through accurate prediction of vessel arrival time which is updated continuously, just-in-time services are facilitated, improving the productivity and efficiency of terminal operators and maritime service providers

Illegal Bunkering Detection

Using advanced machine learning based vessel models, illegal bunkering activities are automatically detected and reported, helping MPA to weed out undesirable bunker suppliers, further enhancing MPA's reputation as a top bunkering port

Utilisation Prediction

Provides advance information on traffic density in high utilisation areas to help MPA officers to be proactive in ensuring port water safety

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