

MPA と IBM がシンガポールの港湾オペレーション分野において情報分析システムを展開

シンガポール海事港湾庁（MPA）及び IBM が共同で取り組む SAFER プロジェクト（海事分野における事象認識のためのセンスメイキング分析）の下、港湾分野における各種オペレーション業務の効率化を目指し、新たな情報分析技術の展開及び試験運用が実施された。

MPA のニャム・チャン・メン会長は、今月 22 日、シンガポールで開催された Safety@Sea（海の安全に関する国際会議）の開会式において、試験運用の成功を受け、SAFER システムを構成するモジュールのうち 3 つについては、今年 9 月から展開すると発表した。

合計 7 つのモジュールのうち船舶動静の自動検知、違法行為に関する情報分析及び水先人の乗船検知の 3 つが展開される計画である。

港湾オペレーションセンター（POCC）は、1 日に 1000 隻以上の船舶に対応しており、船舶動静の自動検知モジュールにより手動入力や音声通信といった作業を軽減することが目的である。

違法行為の情報分析モジュールは、検査官の直感に頼るのではなく、実際の動向に基づいた、より効果的な船舶の取締りを目的としている。

水先人の乗船検知モジュールは、95%の船舶に 15 分以内に水先人を乗船させるという目標が達成されているか自動的に確認するよう設計されている。

MPA のアンドリュー・タン長官は、「我々は、港湾オペレーション及び執行を最適化し、既存及び将来的な需要を満たすため、情報分析及び機械学習技術を利用したデジタル戦略の発展を継続する計画である。」

「とりわけ次世代型港湾の推進及び船舶の動静監視といった分野において SAFER プロジェクトの有効性を実感することができるだろう。」と述べた。

バンカリング分析、航行禁止区域に関する情報分析、到着時刻予測、利用状況の検知・予測の残り 4 つのモジュールに関しては、2018 年 1 月に展開することを計画している。

(2017 年 8 月 22 日 Seatrade Maritime News)

Seatrade Maritime News

MPA, IBM roll out data analytics system for Singapore port operations

The Maritime & Port Authority of Singapore (MPA) and IBM have completed trials of the first three modules of a system using data analytics aimed at improving port volumes.

The MPA – IBM Project SAFER (Sense-making Analytics For maritime Event Recognition) develops and tests new analytics technologies in the port environment with an aim to improve the efficiency of a variety of different operations.

At the opening of the Safety@Sea conference in Singapore on Tuesday MPA chairman Niam Chiang Meng announced that the first three modules of the system would be rolled out from September following successful trials.

The first three out of seven modules are Automated Movement Detection, Infringement Analytics, and Pilot Boarding Detection.

With Automated Movement Detection aims to reduce the amount of manually entered and voice communication required between vessels and the Port Operations Control Centre (POCC) with over 1,000 vessels being handled a day.

Infringement Analytics aims to target vessels for enforcement more effectively based on behavior rather than relying on the intuition of port inspectors.

Pilot Boarding Detection is designed to automatically validate the target that 95% of vessels are served with a pilot within 15 minutes.

“We will continue to develop our digital strategies through the use of data analytics and machine learning technologies to optimise our port operations and enforcement to meet existing as well as future demands,” said Mr Andrew Tan, chief executive of MPA.

“The SAFER project will enable us to reap immediate benefits especially in the areas of next-generation port enforcement and monitoring of vessel movements.”

The other four modules of the project are to be rolled out from January 2018 and comprise: Bunkering Analytics, Prohibited Area Analytics, Vessel Traffic Arrival Prediction, and Utilisation Detection and Prediction.

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Safer for us

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.

Pilot boarding detection

Automatic detection of pilot boarding time reduces staff workload and speeds up dispute resolution



Illegal bunkering detection

Machine learning based vessel models are used to detect and report illegal bunkering activities and help weed out undesirable bunker suppliers

Prediction of vessel arrival time

Vessel arrival time is accurately predicted and updated continuously and this facilitates Just-in-time provision of services



Utilisation Prediction

Advance information on traffic density in high utilisation is provided to help ensure port water safety



Automated movement detection

Vessel movement is automatically identified using cognitive analytics and advanced filtering



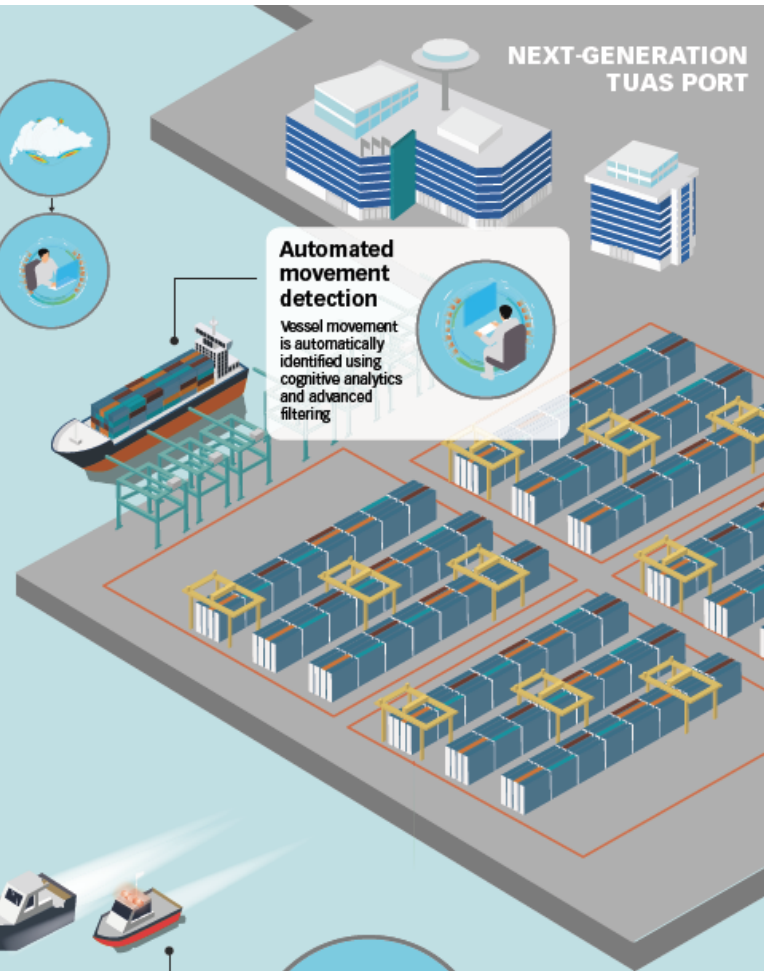
Infringement analytics

Machine learning based vessel models are used to detect suspicious or abnormal vessel behaviour; this allows port inspectors to employ a targeted approach in carrying out daily tasks



Detection of vessel entering prohibited areas

A virtual fence is created in port waters to identify and localise authorised entry into prohibited areas



NEXT-GENERATION
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