

Annex A: Factsheet on start-ups from Smart Port Challenge 2018 awarded MPA grant

Cluster 1: Optimising enabling platforms

- 1) Skylab – has developed a data acceleration software solution to enhance high-speed satellite and cellular communication links, smoothening the flow of data traffic through wireless networks and the Internet. This is expected to enable the large-scale adoption of IOT applications in the maritime industry.
- 2) Tagvance – has developed a tracking solution that uses Bluetooth/ LoRa technologies to locate assets/people in outdoor and indoor spaces. In addition to positioning data, this system also collects environmental sensor data (such as vibration, temperature and moisture level). This solution can improve both work safety and operational efficiency.
- 3) Field Data Intelligence – has developed an inspection workflow solution that integrates multiple data sources into one seamless application. These include IoT sensors, visual observations, drone images and CAD drawings. By integrating various data onto one platform, it will allow maritime field operators to enjoy unprecedented visibility while performing inspections

Cluster 2: Adopting smart technologies for optimal port and cargo operations

- 4) AIDA Technologies – will be developing a cloud-based application for accurately predicting vessel arrival times. This leverages AIDA's proprietary machine learning toolkit and algorithms trained on historical maritime data. The ability to have precise vessel arrival times will benefit numerous maritime players, including ship owners, port authorities and companies providing maritime services.
- 5) Claritecs – developed BunkerMaestro, an algorithm driven Software-as-a-Service platform with an inbuilt workflow automation tool to assist bunker operators reduce data entry and manual scheduling. It incorporates real-time AIS vessel tracking updates to enhance just-in-time delivery of fuel to receiving vessels, increasing bunker fleet utilisation and work efficiencies while providing clarity of bunker scheduling to all stakeholders involved in the bunker supply chain.
- 6) ENT Vision – has developed a ship supplies distribution platform, which is a collective distribution network that connects multiple stakeholders in ship supply chain and facilitates collaboration. This improves resource-sharing and optimises logistical assets, while simultaneously reducing costs. It also improves visibility of upstream logistics flow from the suppliers' point of view and downstream logistics from the sea chandler's point of view.
- 7) Ocean Freight Exchange – has developed the Right Bunker, a web-based bunker delivery scheduling platform, to share accurate information on vessels' estimated time of arrival (ETA) and details of bunker delivery, with all stakeholders, including

suppliers, tanker operators, ship owners, ship managers and agents. The Right Bunker has been proven to increase turns for bunker tankers by 25-50% and decrease waiting times by 25-50% for both the bunker tankers and ocean-going vessels. Permission can be given for data such as responses to flow back to all stakeholders.

- 8) Portcast – has developed a solution to predict the movement of cargo. This takes into account historical data as well as real-time external datasets to create intelligent predictions. It also leverages on Portcast's proprietary machine learning models, which have proven to be more than 90% accurate in live trials. With Asia being the priority growth region, Portcast are currently focusing on Asian trading routes for their solution.
- 9) Ship Supplies Direct (SSD) – has developed a maritime logistics platform to solve inefficiencies in the delivery of ship supplies. This system consolidates and streamlines orders for ship supplies. Not only will this improve efficiency and productivity, it will also improve congestion at Singapore's ports.

Cluster 3: Facilitating cross-industry and cross-border innovations

- 10) Aeras Medical – has developed a Vital Sign Monitoring solution to provide remote health monitoring of seafarers while on board a ship. As a typical crew contract can last 6-9 months, and they could be faced with medical emergencies or aggravation of a pre-existing medical condition
- 11) EV Dynamics – has developed a clear vision cloud (CVC) solution to improve the clarity, visibility and colour reproduction of underwater videos, taken in turbid waters. This solution can support multiple video formats taken from different sources, such as a GoPro. This is a cloud-based solution, so users can process their underwater video files online.
- 12) Threatspan – has developed a cyber risk management platform that combines cyber monitoring, cyber threat intelligence, dynamic vessel positioning data and seafarer cyber hygiene data. This consolidated solution will improve the cyber resilience of the maritime sector, which is especially important with the increased digitalisation of the industry.
- 13) Winimy – has developed a smart digital concierge solution to help travellers at ferry terminals get to the right ferry on time. The digital concierge provides timely information to guide travellers to the correct gate. The solution uses game-based animation, to increase customer engagement and improve customer satisfaction.

Annex B – List of MOUs being signed by PIER71 start-ups during Singapore Maritime Week

| Date | Parties involved | Details |
|-------------|--|---|
| 9 April | Ocean Freight Exchange (OFE) and Fratelli Cosulich Bunkers | Fratelli Cosulich Bunkers will be testbedding OFE's bunker delivery scheduling platform. |
| 9 April | SkyLab and Singtel | The two parties agree to collaborate on jointly developing SkyLab's data transport accelerator engine, using Singtel's Satellite High Speed communication links. |
| 9 April | Ship Supplies Direct (SSD) and Winspec Logistics Group | Winspec will be test-bedding SSD's FleetShare platform, which is a last-mile logistics delivery and asset pooling system. SSD will leverage upon Winspec's expertise and assets to serve the broader ship supplies ecosystem logistics needs. Winspec will leverage on SSD's digital technology expertise to enhance efficiency and customer service. |
| 10 April | Claritecs and MarineTraffic | Claritecs will be partnering MarineTraffic, to access relevant data on vessel movement for the development of their bunker scheduling platform |
| 10 April | Claritecs with Global Energy & Trading | Global Energy & Trading will be test-bedding Claritecs' bunker scheduling platform |
| 10 April | Claritecs with Sinanju Tankers | Sinanju Tankers will be test-bedding Claritecs' bunker scheduling platform |
| 10 April | Claritecs with Sentek Marine & Trading | Sentek Marine & Trading will be test-bedding Claritecs' bunker scheduling platform |
| 10 April | Threatspan and Athena Dynamics | The parties will be jointly expanding their capabilities and international customer base, helping to establish Singapore as a leader and centre of excellence in the maritime cybersecurity field. |
| 10 April | Threatspan and MarineTraffic | Threatspan will leverage on MarineTraffic to analyse a vessel's next port of call and historical track, in order to identify relevant cyber threats. |
| 10 April | StartupWharf and Innospace | Shanghai-based Innospace joins PIER71 and New York Maritime Innovation Center in the Startup Wharf network, to support the development of maritime start-ups and expand their exposure to the global maritime industry. |