PORT OF THE FUTURE: LONGER LASTING ENERGY SYSTEM FOR AUTOMATED GUIDED VEHICLES

Have you developed an innovative solution meeting the above challenge?

PSA unboXed, the corporate venture capital arm of one of the world's leading port groups, and the Smart City World Labs consortium invite you to apply for the first Singapore Challenge initiated by Climate-KIC.

Three selected solution providers will be invited for a 4-day workshop in Singapore* with participation of PSA International, PSA unboXed, local venture capitalists, as well as industry and university experts. Leading up to the workshop, a team of business developers from the Technical University of Denmark (DTU) will support your company in getting ready for the Asian market. After the workshop, Smart City World Labs will support with development of implementation roadmaps.

Information and application

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DEADLINE FOR SUBMISSION OF APPLICATIONS: 2 APRIL 2018

APPLY ONLINE: https://www.f6s.com/smartcityworldlabs2018/apply

* A grant for travel and hotel expenses will be provided for the three selected solution providers.
The Singapore Government has announced its intent to implement a carbon tax on the emission of greenhouse gases from 2019, in a move to maintain a high-quality living environment and do its part in fighting climate change. In line with the government’s effort, PSA Singapore aims to cut down on its carbon emission by replacing its diesel-run container trucks in the port with a fully automated and electrified fleet in the future Tuas Port. Tuas will have a total capacity of up to 65 million TEUs, and will be equipped with more than 1,000 Automated Guided Vehicles (AGVs).

In PSA’s Port of the Future, horizontal movement of cargo across the port will likely be done by electric Automated Guided Vehicles (AGVs). 24 AGVs are being tested at the PSA ‘Living Lab’ for port operations in Pasir Panjang. For now, the AGVs are run on a battery system, and can operate continuously for 4-5 hours before the batteries have to be charged.

PSA wants to extend an AGV’s working duration per charge cycle in a cost effective and sustainable manner, so as to optimise the energy, physical space and time spent on charging them. This can be done by overcoming current limitations for longer lasting batteries, using alternative power sources, or a combination of both solutions. Extending an AGV’s working duration per charge cycle will also allow PSA to save on the quantity of AGVs purchased.

Objective of the call:
To have a battery system that is all encompassing:
1. Capable of fast charging and discharging at high C-rates (i.e. high power density, nominal 5C at pack level)
2. Capable of storage at high energy density >200Wh/kg
3. High life cycle (i.e. lasts >8000 deep-discharge - charge cycles without degradation in performance)
4. Cost effective

Opportunity to find out if your solution is suited for the Asian market and team up with key local players.

PSA International is one of the leading global port groups handling about 64 million containers (TEUs) out of the 700 million globally and with port projects spanning across Asia, Europe and the Americas. PSA Singapore is the flagship terminal of PSA International and is the world’s busiest transhipment hub – accounting for almost one-seventh of the world’s total container transhipment throughput and more than 4% of global container throughput.

The PSA Living Lab is an integral part of PSA’s on-going program to develop innovative and cutting-edge technology solutions for its existing terminal operations in Singapore, as well as the future Tuas Port. Operationally-ready solutions have the potential to be deployed at terminals of the PSA Group worldwide.

Comprising two operational berths at Pasir Panjang Terminal, the PSA Living Lab will enable start-ups and technology solution providers to collaborate with PSA to develop ideas and test-bed integrated systems in an unparalleled live port environment at PSA Singapore – one of the world’s busiest hubs for container movement. One key project is the Automated Guided Vehicle (AGV) system. The future Tuas Port is estimated to require a total fleet size of more than 1,000 AGVs.

There is no requirement to the maturity level of proposed solutions, however solutions should fit into the current fleet of AGVs. In any given opportunity where the Nordic solution is suitable for PSA, direct collaboration and engagement with the solution provider can be investigated on.

What’s in it for you?

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