

## JOINT MEDIA RELEASE

# **ESG, IMDA and NRF commit S\$40 million to National Innovation Challenges to help companies emerge stronger post-COVID**

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1. Enterprise Singapore (ESG), the Infocomm Media Development Authority (IMDA) and the National Research Foundation Singapore (NRF) launched a series of seven National Innovation Challenges (NICs) today to accelerate innovation efforts and help enterprises develop solutions to overcome challenges in the post-COVID world. As announced by Deputy Prime Minister Heng Swee Keat in the Fortitude Budget, the NICs seek to catalyse partnerships across the economy by providing a platform for enterprises, government agencies, Research Institutions (RIs), Institutes of Higher Learning (IHLs), and Trade Associations & Chambers (TACs) to co-innovate and tackle immediate needs for safe reopening. Through open innovation calls, the cross-industry collaborations will also address mid- and long-term sectoral challenges to help companies emerge stronger in the new future.
2. S\$40 million in funding has been dedicated to the NICs to ramp-up the development and adoption of solutions, where each challenge is allocated up to S\$2 million. The round of open innovation calls extends seven challenge statements across five sectors – transport and logistics, built environment, MICE (Meetings, Incentives, Conventions and Exhibitions), tourism, and maritime. By jointly analysing industry problem statements, and crowdsourcing for solutions, the NICs aim to quicken the pace of innovation, commercialisation, and adoption of innovations across industry sectors.

### **NICs as a platform to encourage collaboration across private and public sectors**

3. ESG, IMDA and NRF will gather industry challenge statements from both private and public sectors. Through this open innovation platform, companies and government

agencies can gain access to a diverse pool of SMEs and startups with new solutions that can be applied across industries, while solution providers can innovate and create solutions that are catered to industry demands. Participation from the TACs and end-users (both companies and government agencies) also help ensure that solutions developed are practical and industry-relevant.

4. Mr Peter Ong, Chairman, Enterprise Singapore, said, “The pandemic is forcing entire economic sectors to adapt to a new operating environment. The NICs will help companies and government agencies adapt more quickly by tapping the innovation capabilities of Singapore-based inventors and enterprises. The NICs will also offer our innovative enterprises opportunities to work with potential customers to test novel solutions. This will help them build up their track record and scale their solutions to grow both in Singapore and overseas.”
5. Mr Lew Chuen Hong, Chief Executive, IMDA, said, “We recognise the urgent need to accelerate innovation adoption and digitalisation across the Singapore economy. Open innovation can be the channel for companies looking to solve problems with innovative solutions quickly. Through platforms such as IMDA’s Open Innovation Platform (OIP), enterprises, trade associations and chambers can co-create and deploy innovative solutions that improve organisational efficiency. With the NICs, the government is taking an additional step in committing resources and prioritising the deployment and adoption of successful pilots across industry sectors.”
6. Companies will also get opportunities to tap into the latest cutting-edge research from RIs and IHLs, which in turn, ensures academic ideas are grounded with industry relevance and experience. This way, companies will be able to enhance their processes and operations using advanced technologies that will enhance their resilience as the economy safely reopens.
7. Professor Low Teck Seng, Chief Executive Officer, NRF, said, “This series of National Innovation Challenges creates synergies between industry, academia and government agencies, which is a hallmark of translational research excellence. It will facilitate the exchange of fresh ideas from a diverse range of capabilities that we have built up across our research institutions with our past R&D investments. It is now more important than ever to pool our resources to develop innovative solutions that help strengthen communities, support job creation, enhance industry processes, and build a stronger Singapore.”

## **NIC challenge statements**

8. This series of NICs will host seven challenge statements. Three challenge statements involve addressing higher accuracy of shipping container inspections, more productive tracking and tracing of cargo and increasing productivity through AI. These will be launched in conjunction with the Trade and Connectivity Challenge<sup>1</sup> (TCC) today, which returns for the second year.
9. Four challenge statements will be hosted on IMDA's OIP. These statements seek to address challenges across different sectors from tourism, the MICE sector, to construction. These challenges aim to position Singapore as a safe place to conduct business among the local and international community, while helping to spark a revival of the events and construction sectors post-COVID.
10. All challenges under the NICs will be hosted on the Open Innovation Network (OIN), the national gateway to all open innovation challenges and activities in Singapore ([www.openinnovationnetwork.sg/national-innovation-challenges/](http://www.openinnovationnetwork.sg/national-innovation-challenges/)). Through OIN, users will be able to find out more information about each innovation call and how they can participate. The next round of NICs is expected to launch in Q4.

### **Annex 1: Example of solutions deployed from an open innovation call**

### **Annex 2: Information on the seven NIC challenge statements**

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<sup>1</sup> TCC is an open innovation call that connects corporates and startups to co-innovate solutions that can accelerate the development and adoption of technology across the transport and logistics supply chain. Please refer to ESG's media release on the TCC for more details.

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### **About Enterprise Singapore**

Enterprise Singapore (ESG) is the government agency championing enterprise development. We work with committed companies to build capabilities, innovate and internationalise.

We also support the growth of Singapore as a hub for global trading and startups, and build trust in Singapore's products and services through quality and standards.

Visit [www.enterprisesg.gov.sg](http://www.enterprisesg.gov.sg) for more information.

### **About Infocomm Media Development Authority**

The Infocomm Media Development Authority (IMDA) leads Singapore's digital transformation with infocomm media. To do this, IMDA will develop a dynamic digital economy and a cohesive digital society, driven by an exceptional infocomm media (ICM) ecosystem – by developing talent, strengthening business capabilities, and enhancing Singapore's ICM infrastructure. IMDA also regulates the telecommunications and media sectors to safeguard consumer interests while fostering a pro-business environment, and enhances Singapore's data protection regime through the Personal Data Protection Commission.

For more news and information, visit [www.imda.gov.sg](http://www.imda.gov.sg) or follow IMDA on Facebook IMDAsg and Twitter @IMDAsg.

### **About National Research Foundation**

The National Research Foundation (NRF) is a department within the Prime Minister's Office. The NRF sets the national direction for research, innovation and enterprise (RIE) in Singapore. It seeks to invest in science, technology and engineering, build up the technological capacity of our companies, encourage innovation by industry to exploit new opportunities that drive economic growth, and facilitate public-private partnerships to address national challenges.

**Example of a solution deployed from an open innovation call**

1. In 2014, ESG and JTC led a joint grant call to develop decentralised wastewater treatment and recycling solutions to meet increasing water needs and wastewater demands in Singapore. Through this open call, local SME, Ecosoftt, developed Singapore's first Water SMART Blue Building that treats and recycles sewage in JTC's Cleantech ONE building for non-potable reuse, such as for toilet flushing and cooling towers. This was deployed in 2017. By recycling the wastewater on-site, this increases the water supply available for use, hence enhancing resource sustainability for areas where sewer connections are limited or not available.

On the back of the track record and experience gained from the JTC Cleantech ONE project, Ecosoftt went on to commercialise the solution through projects in India, Hong Kong, Malaysia and Indonesia.

Recently, Ecosoftt's solutions have been extended to address needs relating to the COVID-19 situation. MINDEF appointed Ecosoftt to build three wastewater treatment plants with a total capacity of 820m<sup>3</sup>/day in Changi Exhibition Centre, a key COVID-19 community isolation facility. With the ability to treat wastewater on-site, the capacity of the facility could then be expanded to handle more people.

2. International connectivity provider, BICS, saw an opportunity to add value to its service offerings to logistics companies. The company raised an innovation challenge on IMDA's Open Innovation Platform to co-develop an end-to-end fleet management system to help improve the workflow. Fleet management – the coordination of transport vehicles – in an integral part of any logistics company, efficient route planning and optimised loads per vehicle can reduce operating costs. Responding to BICS' innovation call, East-West Innovative Solutions (EWIS) developed a series of connected devices to be installed on vehicles and goods. Combined with BICS' existing infrastructure and comprehensive wireless connectivity in Asia-Pacific, this allowed for real-time tracking of vehicles and goods across multiple countries. BICS and EWIS are now carrying out a live trial of the tracking system on vehicles travelling Singapore and Malaysia.

**Information on the first seven NIC challenge statements**

S/N	Problem Owners	Theme	Challenge Statement	Agency-In-Charge
1	<p>TAC-lead: Container Depot &amp; Logistics Association of Singapore,</p> <p>Corporates: 12 local and overseas partners across the aviation, maritime, land mobility, logistics, and trade sectors –</p> <ol style="list-style-type: none"> <li>1. Continental Automotive Singapore</li> <li>2. Tristar Group</li> <li>3. Global eTrade Services</li> <li>4. Lumens Auto</li> <li>5. Nursultan Nazarbayev Foundation</li> <li>6. Pacific International Lines</li> <li>7. SATs Ltd</li> <li>8. Singapore Post</li> </ol>	<p>Emerging Stronger: Trade and Connectivity</p> <p>The Trade and Connectivity Challenge 2020 (TCC 2020) is in its second year running, with 28 problem statements this year.</p>	<p>i) CDAS' Automated Inspection of Shipping Containers at Container Depots:</p> <p>Develop an autonomous or remote inspection solution that can effectively detect, assess and classify defects on containers and tag findings to respective containers. The solution should improve container depots<sup>2</sup> handling capacity. This will increase the sector's productivity and reduce reliance on manual labour. Remote inspection capability will also make the sector more attractive to locals.</p> <p>ii) SATS' Tagging solution for Airfreight Shipments – Industry Use of Air Waybill (AWB) Label/Tags to Replace Normal Printed AWB Label:</p> <p>Develop a cost-effective common tagging solution for the Singapore airfreight industry to track and trace air cargo and provide visibility at each stage of the handling process (e.g. warehouse handling, arrival, uplift onto aircraft).</p> <p>iii) YCH's Management and Dynamic Allocation of Resources in a Post-COVID-19 Work Setting:</p> <p>Develop a cost-effective and user-friendly AI/ML-enabled resource management and planning solution which enables measurement and optimisation of productivity with regard to manpower and equipment utilisation. This solution should cater to post-COVID 19 work settings, where operations has to factor in Business Continuity Planning (BCP) requirements, social distancing and workforce segregation.</p>	ESG

<sup>2</sup> There are 11 operators in Singapore with about 20 depot yards.

	<p>9. Sumitomo Corporation Asia and Oceania</p> <p>10. Tech-Link Storage Engineering</p> <p>11. Teckwah Value Chain</p> <p>12. YCH Group</p>			
2	<p>Sector-lead: BCA</p> <p>Co-owner: Kajima Group</p>	<p>Safe-Reopening and Emerging Stronger for the Construction Industry</p>	<p>Given the current challenge brought about by COVID-19 for the construction industry, there is a need for a digital solution that would allow an integrated management of both worksite and workforce to ensure a Covid-safe work environment. This will help the construction industry resume work with confidence, as well as mitigate both manpower and supply chain risks in order to secure business continuity.</p> <p>The integrated management of workforce and worksite will enable greater work continuity on worksites albeit unexpected disruptions. This will provide an immediate boost to the site productivity level whilst supporting the long-term growth of the business.</p> <p>The system will also be scalable to other adjacent sectors e.g. manufacturing, that require scheduling of resources (e.g. manpower, machinery, raw materials), improving overall operating efficiency for best-fit work result. The solution will have the potential to scale regionally.</p>	IMDA
3	<p>Sector-lead: NHB</p> <p>Co-owner: Kampong Glam Precinct</p>	<p>Safe-Reopening of Tourism, Heritage and Cultural Experience</p>	<p>Create a novel tourism experience using 5G-enabled virtual AR/VR platform that accentuates online consumption of cultural and heritage experiences.</p> <p>The envisaged digital augmented virtual reality platform is a scalable platform that can create a compelling and interactive experience for cultural and tourism sites, to renew engagement and build resilience to the industry, currently flat-lined. When solved, it will immediately increase tourism spent through the in-platform commercial capabilities (e.g. payment, delivery) for virtual visitors, and in the medium-long term, it will complement physical visits, enabling online-offline engagement, providing more</p>	IMDA

			<p>visitor content options. Through 5G network (when ready), it can provide even more collective and immersive experience.</p> <p>The virtual platform has the potential for other use cases, for example, for F&amp;B or retail industries, where such platform can help generate spending via virtual shopping experience.</p>	
4	<p>TAC-lead: Singapore Association of Convention, Exhibition Organisers and Suppliers (SACEOS)</p> <p>Co-owner: Informa, GlobalSign.in</p>	Safe-Reopening of Tradeshows, Conventions and Conferences	<p>Develop an integrated platform with safety measures put in place to re-attract visitors for tradeshows, conventions and conferences.</p> <p>COVID-19 has changed the way MICE events are organised. The solution is forward planned to cater for such change, providing confidence and bring back the MICE visitors and exhibitors in a safer environment. The solution will provide a robust and secured platform for real-time density detection and integrated communications to alert hot-spots during the event. Post-event, event organisers are able to use the submitted data to continue engage the visitors with relevant information, until the next event.</p> <p>The solution is to be designed with a centralised control platform with the ability to integrate with various existing 3<sup>rd</sup> party applications (eg. 3<sup>rd</sup> party event management system, SafeEntry, TraceTogether, Chatbot, epayment etc).</p> <p>The solution has potential to be exported to regional event organisers, as currently, many conference organisers are using disparate standalone apps.</p>	IMDA
5	Sector Lead: PSA Corporate	Safe-Reopening of workplace - Ports	<p>Develop an integrated track and trace system of port workers on-site for effective risk control, mitigation and intervention, without increasing manpower resources.</p> <p>Currently, standard safety measures are put in place in ports. However, the interaction of ports workers is high, and there is no ready solution that can track the movement, especially for workers who work or stay on vessel, or take unofficial breaks (e.g. smoke break). The solution will allow risk profiling of incoming vessels as well as remote monitoring of workers to determine location and safety. The solution will be designed with interoperability and reusability in mind, so that the solver is able to contextualise and customise it for adjacent sectors (e.g. early childhood safety management).</p>	IMDA