



**Info-communications Media Development
Authority (IMDA)**

**Call for Innovative Solutions (CFIS)
for Smart Estates**

Call Document and Application Guide

NOVEMBER 30, 2018

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1. IMPORTANT NOTICES

- 1.1 Interested participants are to note that this is a grant call for innovative solutions. IMDA is providing funding support through a grant for the development of innovative solutions to build technical capabilities for companies in Singapore. This is not a call for tender.
- 1.2 Participants are to refer to [Annex A](#) for other standard notices of IMDA Call for Innovative Solutions.

2. INTRODUCTION

- 2.1 IMDA is conducting a Call for Innovative Solutions (CFIS) to invite Participants to submit proposals to develop technology solutions for Smart Estates.
- 2.2 Smart Estate is about the seamless integration of Info-Communications Technologies (ICT) into the physical built environment to achieve effective monitoring, command and control of building operations, as well as real-time analysis to facilitate proactive responses to meet the demands of building operators and their occupants. The technologies should optimise all building operations and resources to achieve cost-savings and value-gain in maintenance and manpower, including areas of energy efficiency, workspace productivity, and improved comfort and security for its users.
- 2.3 This call is to develop solutions that could improve efficiency, reduce operating costs, and enhance user experience for future commercial estates and business parks.
- 2.4 The ideas must be test-bedded for technical viability and/or customer receptiveness via Proof-of-Concepts (POCs), and should offer potential business and deployment models. For instance, Participants need to demonstrate working prototypes with live data to show that they have addressed the problem statement(s). There must be service buyers and/or developers' acceptance at the end of the project period. Successful prototypes will advance to the next co-funding stage and participate in subsequent scale-up deployment.
- 2.5 Participating developers for this call include JTC Corporation (JTC) and Ascendas-Singbridge (ASB). JTC and ASB will offer Launchpad@one-north, Launchpad@Jurong Innovation Districts, Fusionopolis 1, Science Parks I & II and Galaxis as possible trial sites for the trial development of solutions for this call. IMDA and its participating developers reserve the right to decide on the trial sites to be used for the proposed trials.

3. BACKGROUND

- 3.1 To enable proliferation and adoption of technologies for smart estates and buildings, IMDA seeks to collaborate with technology or solution providers to enhance their capabilities to leverage on deep-technology areas such as Artificial Intelligence (AI) and Predictive Analytics, Internet of Things (IoT), Immersive Media (Augmented Reality/Virtual Reality, AR/VR), Cybersecurity, and other emerging technologies such as Blockchain to offer differentiated solutions. Technology companies should develop next-generation solutions for export and scale in the region. In recent years, there is significant increase in interest from developers in Asia for technology companies to help them plan and build smart estates or buildings to cater to varied customers' experiences. IMDA aims to work with technology providers to create innovative and integrated services that will value-add to developers locally and regionally.
- 3.2 IMDA aims to facilitate companies to identify areas for innovation, drive collaboration, and co-create solutions to pilot and scale subsequently. The innovative solutions can potentially be deployed in developments such as Punggol Digital District (PDD), Jurong Innovation District (JID), Jurong Lake District (JLD), Singapore Science Parks and Smart Tengah.

4. CALL OBJECTIVES

- 4.1 IMDA aims to nurture and support good technology companies to develop innovative solutions for existing and future commercial districts. The call also encourages collaboration and cross-pollination of technologies among technology companies through the formation of consortiums and partnerships.
- 4.2 One of the key objectives of the call is to develop 'solution suites' for smart estates through the formation of consortiums or partnerships among local technology companies, developers, building owners and/or facilities management companies to co-develop ideas and technologies to enhance digitalisation and innovation.
- 4.3 With support from developers like JTC and ASB, IMDA aims to encourage local technology companies to develop capabilities collaboratively, seek feedback from users to solve interoperability or implementation constraints, and venture into new growth areas while ensuring that the innovative solutions have strong user acceptance.

5. PARTICIPATING DEVELOPERS

- 5.1 IMDA would work with Jurong Corporation (JTC) and Ascendas-Singbridge (ASB) to provide trial/pilot sites for the projects so that solution providers can gather user feedback to improve their solutions. JTC and ASB would offer Launchpad@one-

north, Launchpad@Jurong Innovation Districts, Fusionopolis 1, Singapore Science Parks I & II and Galaxis as trial sites.

- 5.2 JTC is developing smart districts like Punggol Digital District (PDD), which target to deploy next-generation technologies to make it the smartest business district in Singapore. Other developments include Jurong Innovation District (JID) and Jurong Lake District (JLD).
- 5.3 ASB is also looking to make Science Parks I & II into a 24/7 business park of the future that is intelligent, autonomous, safe and able to meet the needs of its existing and prospective tenants. For instance, possible technologies may include data analysis on the footfall in Science Park I & II and identification of ways to draw in crowd and enhance their experiences.
- 5.4 JTC and ASB will support the infrastructure effort required for the trials, and open to adopt and deploy the new solutions when proven successful in their trial estates. ASB is using Science Park I & II as its experimental lab for exporting solutions to their overseas projects in China and India.

6. CALL CATEGORIES

6.1 The proposed categories for these trials are as follows:

6.2 Smart Environment (for estate owners or facility managers) – To focus on

- 6.2.1. Energy efficiency, e.g. on-demand lighting, cooling and cleaning;
- 6.2.2. Integrated facility management with a central/virtual/mobile command and control system for surveillance and resource deployment; and
- 6.2.3. Predictive data analytics, e.g. digital twin for simulation and modelling.

6.3 Smart Enterprises (for businesses/district tenants) - To focus on helping enterprises to:

- 6.3.1. Be resource-light, e.g. through real-time tracking of footfall and on-demand stocking;
- 6.3.2. Reduce reliance on labour, e.g. through deploying network of unmanned aerial vehicles (UAVs) and/or unmanned ground vehicles (UGVs) to deliver organic or non-organic goods; and
- 6.3.3. Have innovative retail/food concepts, e.g. unmanned stores that can be tested for user acceptance and pilot deployment.

- 6.4 Smart Living (for employees of tenants/members of public) – To focus on innovative solutions that can:
- 6.4.1. Facilitate seamless access and transactions, e.g. by tapping on biometric technology;
 - 6.4.2. Improve convenience and personalisation, e.g. new modes for last mile delivery with personal touch; and
 - 6.4.3. Deliver on-demand services, e.g. through driverless/autonomous vehicles integrated into intelligent systems to facilitate movement of employees within the estates.
- 6.5 The solutions and used cases developed should have open Application Programming Interfaces (APIs) and able to be integrated with a horizontal platform for i) central command and control, and ii) data exchange.

7. SCOPE OF PROJECT

- 7.1 Innovative solutions must address and improve key pain points or solve real problems faced by service buyers and/or developers today. These include areas such as optimising manpower, cost-savings without compromising operational effectiveness, enhancing well-being of workers, shifting to outcome-based contracting models with clear and trackable KPIs, having assistive technologies or machines in a commercially sustainable manner, or accelerating digitalisation of developers and/or buildings so as to transform traditional business parks into smart estates.
- 7.2 Applicable technologies or solutions should preferably include frontier technologies such as Artificial Intelligence (AI) and Predictive Analytics, Internet of Things (IoT), Immersive Media (Augmented Reality/Virtual Reality, AR/VR), Cybersecurity, and other emerging technologies such as Blockchain.
- 7.3 Each proposal should include the prototyping, trial and pilot deployment phases where applicable, business viability, charging and/or operating model(s), cost benefit analysis or return on investment for business users (industrial estates, facility managers etc.), maintenance and operations costs, and key assumptions made in the proposal.
- 7.4 Items such as off-the-shelf solutions, point solutions useful only for a single outcome, consultancy services, and incremental improvement of existing platforms or solutions will not qualify for support.
- 7.5 In the case of a consortium or partnership, each consortium partner should clearly identify its role with regards to its contribution to the development of the proposed solution and eventual commercialization of the product.

8. PROJECT DELIVERABLES & OUTCOMES

8.1 Co-funded projects must have clear applications for smart estates and buildings, and the desired deliverables would include:

8.1.1. Clear capability development and growth opportunity for the technology or solution providers;

8.1.2. Productivity optimisation, cost reduction or enhancement in user experience for the developers, building owners, facilities management companies or estate tenants; and

8.1.3. Innovative solutions that could be adopted in local and international scales.

9. PROJECT FUNDING

9.1 IMDA will co-fund up to 50% of qualifying project costs, capped at \$300,000 per project. Categories eligible for co-funding include:

9.1.1. Software and hardware acquisition or rental;

9.1.2. Manpower;

9.1.3. Professional services, e.g. consulting services and training;

9.1.4. Cloud-based subscription and on-premise set-up cost;

9.1.5. Intellectual property, 3rd party licensing and leasing of technologies; and

9.1.6. Prototyping-related cost, including rental of prototyping facilities and equipment, materials and others¹.

9.2 The funding support will be outcome-based to encourage the completion of the solution development and achievement of targets during the project period. The project period should not exceed 18 months.

9.3 The disbursement of the grant will be based on achievement of milestones as follows:

9.3.1. IMDA and the awarded Participant will agree on the scope of work to be done as well as the total funding quantum;

9.3.2. IMDA, developer and the Participant will agree on the milestones to be achieved, which are tied to the disbursement amounts for each milestone;

¹ Cost components must contribute directly to the product development.

9.3.3. The Participant will need to submit all receipts and payslips at the last milestone payment; and

9.3.4. IMDA will reconcile all receipts and payslips with previous disbursements and issue a clawback order for any over-payments before last pay-out.

10. ELIGIBILITY FOR FUNDING SUPPORT

10.1 Singapore-registered companies with at least 30% local shareholding² are eligible to receive the grant for project funding support.

11. PROTOTYPING SUPPORT FROM IMDA

11.1 Technology and solution providers can tap on primary technologies from the IMDA Digital Services Lab (DSL) and engage Pixel Lab where applicable to develop the various innovative concepts. DSL offers prototyping support and the Pixel Lab offers design thinking workshops and prototyping services and facilities for start-ups and companies.

12. TIMELINES

12.1 Please refer to the following table for the timeline of important dates:

S/N	Item	Date
1	Industry briefings	16 November 2018 6 December 2018
2	Application start date	1 December 2018
3	Closing dateline for submission of proposals	31 March 2019 2359 hours
4	Shortlisting of proposals for evaluation and interviews	April – July 2019
5	Project award to applicants	July 2019

Note: timeline may be subject to changes.

13. SELECTION PROCESS

13.1 All Proposals will be reviewed and evaluated by an Evaluation Committee (EC) nominated by IMDA, which may comprise of IMDA and JTC/ASB representatives. Where relevant and necessary, the EC may include industry and academia experts (e.g. academic professors and researchers).

² Local shareholding refers to shareholding that belongs to individuals who are Singapore Citizens or Permanent Residents.

13.2 Evaluation criteria include, inter alia:

S/N	Evaluation Criteria	Description
1	Competency of Participant / Consortium	<ul style="list-style-type: none"> • Relevant technical expertise and capabilities; • Good track record in projects of similar size and nature; and • Complimentary capabilities and sustainable collaboration model (for consortium)
2	Business Viability	<ul style="list-style-type: none"> • Sound financial strength and standings or third-party investments, e.g. business activities and cliental through business agreements; • Viable and sustainable business model with accompanying commercial plans, go-to-market strategies or plans for scale up deployment; and • Adoption figures, including the number and size of users with committed participation through business agreements or letters-of-intent.
3	Technology Innovation & Technical Feasibility	<ul style="list-style-type: none"> • Novel and innovative solution that improves estate management; • Deployment of frontier technologies in Artificial Intelligence (AI) and Predictive Analytics, Internet of Things (IoT), Immersive Media (Augmented Reality/Virtual Reality, AR/VR) or Cybersecurity (e.g. Blockchain); • Demonstrate feasibility to deploy with sound technical specifications; • Interoperable, e.g. use of open architecture or APIs to achieve ease of integration for data exchange and manipulation; • Modular design for ease of scaling; • Complies to industry standards; and • Well-defined plan in solution development and prototyping.
4	User Acceptance	<ul style="list-style-type: none"> • Fulfils requirement of target users and contributes direct positive outcome to user’s business with quantifiable and/or qualifiable impacts on productivity, cost savings or enhanced user experience; • Ease of adoption with minimum changes or disruptions to user’s current infrastructure; • Complies to user’s industry standards; and • User-friendly interfaces or system process.

- 13.3 Only complete proposals will be evaluated by IMDA for the grant award. Shortlisted applicants may be required to make a presentation of their proposal(s) to the Evaluation Committee.
- 13.4 Only shortlisted proposals will be notified by IMDA. Project milestones and co-funding terms will be separately agreed prior to the issue of letter of offer.
- 13.5 For the avoidance of doubt, the selection of any proposal by IMDA may not necessarily lead to the award of a grant.
- 13.6 IMDA shall have the absolute discretion to accept or reject any proposal submitted without being liable to give any reason thereof. IMDA reserves the right to retain the proposals submitted by all parties without liability for the costs of such documents.

14. SUBMISSION REQUIREMENTS

- 14.1 Each application may include one (1) or more proposals.
- 14.2 If the participants are a consortium of partners, only the lead participant will be required to submit the application and proposals on behalf of the consortium.
- 14.3 All applications must be **submitted to Smart_Estates_CFIS@imda.gov.sg by 2359 hours on 31 March 2019**. It shall be the responsibility of the participants to ensure that their proposals are submitted by the closing date and time. An email confirmation will be issued when the application is successfully received. Incomplete and/or late proposals will not be accepted/assessed.
- 14.4 Application submission is final and no modification will be allowed upon successful submission past closing date. IMDA retains sole and absolute discretion to accept each application wholly or in part.
- 14.5 Participants must follow the submission of required documents as outlined below in a **zip file**:

Document	Description
<p>Application Form</p> <p>File naming format: Application Form_<company name></p>	<p>Participant has to fully complete the Application Form provided.</p>
<p>Proposal</p> <p>File naming format: Proposal_<company name></p>	<p>The business proposal should clearly indicate key areas:</p> <ul style="list-style-type: none"> • Project Background • Project Objectives

	<ul style="list-style-type: none"> • Project Descriptions • Business Models & Go-to-Market Strategies • Milestones Achievement & Project Schedules <p>Please use the Proposal Template provided.</p>
<p>Declaration</p> <p>File naming format: Declaration_<company name></p>	<p>Please submit signed and endorsed Declarations (Part A of Application Form).</p>

14.6 Supporting Documents:

Document	Description
<p>Company ACRA / Business Profile</p> <p>File naming format: ACRA_<company name></p>	<p>ACRA business profile of the lead participant company.</p>
<p>Financial statement or management account</p> <p>File naming format: Financial Statement_<company name></p>	<p>Latest audited financial statement or management account (if participant is exempted from audit under Companies Act) of lead applicant company.</p>
<p>Curriculum Vitae (CV) of project lead and team members</p> <p>File naming format: CV_<team member name></p>	<p>Project team leader and members’ CVs, which shows professional and technical experience, and descriptions of relevant projects in the past 3 years.</p>

14.7 The proposals and all supporting documentation to be supplied by the Participants shall be written in the English language.

14.8 If there is any change or amendment of information to the CFIS document before the closing date, notification will be given through the publication of a Notice of Addendum to the CFIS document on IMDA’s website. Participants shall check the IMDA’s website regularly to ensure that the instructions on the Notice of Addendum, if any, has not been omitted before submitting their Proposals in response to this call.

14.9 In the event that IMDA seeks clarification on any aspect of the Participant's submission, the Participant shall provide full and comprehensive responses within seven (7) days of IMDA's request.

14.10 All enquiries regarding this CFIS can be addressed to:
[Smart Estates CFIS@imda.gov.sg](mailto:Smart_Estates_CFIS@imda.gov.sg).

15. ANNEX A – STANDARD NOTICES

Companies or consortia submitting proposals in response to the IMDA Call for Innovative Solutions (collectively, “**Participants**” and individually “**Participant**”) are deemed to have read and understood the following provisions:

1. Interpretation

1.1 The following words and expressions shall have the meanings hereby assigned to them except where the context otherwise requires:

“**Call for Innovative Solutions**” or “**CFIS**” shall mean the invitation issued by IMDA on 1 December 2018 to companies to collaborate with IMDA and other partners to develop or deploy solutions in connection with the Call for Innovative Solutions for Smart Estates.

“**IP**” shall mean intellectual property, including but not limited to patents, copyright, industrial design and integrated circuit topography.

“**IMDA**” shall mean the Info-communications Media Development Authority, a statutory board created pursuant to the Info-communications Media Development Authority Act (No. 22 of 2016) of the laws of the Republic of Singapore with its principal office at 10 Pasir Panjang Road, #10-01 Mapletree Business City, Singapore 117438.

“**Proposal**” shall mean any and all documents and information submitted by the Participant in response to the CFIS.

1.2 Words importing the singular shall also include the plural and vice versa where the context requires.

2. Disclaimers

2.1 This Call for Innovative Solutions (CFIS) is merely an invitation to treat and is not intended to create or impose any binding legal obligations whatsoever on IMDA, whether express or implied and whether contractual or otherwise. Without prejudice to the generality of the foregoing, each Participant acknowledges and agrees that IMDA and the evaluation committee shall be under no duty or obligation to act fairly or equally towards any Participant in relation to IMDA’s evaluation of its Proposal or with regard to any process adopted by IMDA under this CFIS.

2.2 Nothing in this CFIS shall constitute a contract between IMDA and any Participant. Any Participant selected pursuant to this CFIS for participation in the project shall be required to enter into a legally binding agreement with IMDA (“**Agreement**”), the terms and conditions of which shall be agreed between the parties at a later date. For the Participants’ reference, the Agreement to be entered into between the selected Participant and IMDA shall contain IMDA’s standard terms and conditions

for Grants and/or any other terms which IMDA deems fit, including but not limited to the terms and conditions set out at Schedule 1 annexed hereto. For the avoidance of doubt, for the purposes of the Agreement, IMDA shall be entitled to modify, vary and/or supplement any of the terms and conditions set out in Schedule 1.

- 2.3 All submissions of Proposals, clarifications, discussions and presentations relating to this CFIS are made entirely at the risk of the Participant.
- 2.4 IMDA does not make any representation or warranty, whether express or implied, or accept any liability for the completeness, relevancy, accuracy and/or adequacy of the information provided by IMDA in relation to this CFIS.
- 2.5 IMDA does not make any representation of fact or promise to the future in respect of any project contemplated by IMDA relating to this CFIS.
- 2.6 IMDA accepts no liability or obligation in relation to any Proposal submitted pursuant to this CFIS and/or any subsequent clarifications, discussions or presentations thereon, whether requested by IMDA or otherwise. The Participant shall bear all costs and expenses associated with the preparation and submission of its Proposal, and any subsequent clarifications, discussions or presentations thereon. IMDA will, under no circumstances, be responsible for reimbursing any costs incurred by the Participant during the process, regardless of the conduct or outcome of the evaluation and selection process.
- 2.7 IMDA shall have the absolute discretion to accept or reject any Proposal, whether in whole or in part, without giving any reason whatsoever. The receipt by IMDA of any Proposal pursuant to this CFIS shall under no circumstances impose any form of obligation or amount to an acceptance of or an agreement to abide by any terms or conditions stated therein or elsewhere on the part of IMDA.
- 2.8 IMDA shall have the absolute discretion, at any time, to terminate this CFIS or to change the nature, scope, procedures or timelines for the CFIS, including the proposal selection process and criteria. Under no circumstance shall IMDA incur any liability in respect of such termination or changes.
- 2.9 IMDA shall not owe any liability to any party for any loss or damage whatsoever (including loss of profit, savings, business contracts, or revenues, and all other forms of actual, direct, special, incidental, or consequential loss or damage) arising from or related to any response to this CFIS, including but not limited to the submission of Proposals.

3. Ownership of Documents and Intellectual Property

- 3.1 All proposals and other documents or materials submitted to IMDA pursuant to this CFIS shall become the property of IMDA. Notwithstanding the foregoing and without prejudice to any subsequent agreement with IMDA to the contrary, any IP contained

in any Proposal and/or such other document submitted to IMDA shall not be transferred to IMDA.

- 3.2 For the avoidance of doubt, all IP in any documents issued by IMDA pursuant to this CFIS shall remain vested in IMDA.

4. Confidentiality of Information

4.1 IMDA may require any party receiving confidential information from IMDA in relation to or arising from this CFIS to sign a written non-disclosure agreement setting out such party's confidentiality obligations in relation to such confidential information.

4.2 IMDA accepts no liability or obligation in relation to any confidential information disclosed to IMDA by a Participant pursuant to this CFIS unless otherwise agreed by IMDA in a written non-disclosure agreement setting out IMDA's confidentiality obligations in relation to such confidential information.

5. IMDA's Right to Seek Recovery

5.1 Nothing herein shall prejudice or limit IMDA's right to seek recovery from the Participant for any loss, damage, costs, expenses, or liability incurred by IMDA and/or its officers, directors and employees, directly or indirectly arising out of or relating to the submission of the Proposal by the Participant and IMDA's retention and use thereof, including but not limited to any claim that the Proposal infringes any third party's IP rights.

SCHEDULE 1 to ANNEX A – STANDARD NOTICES

1. The monies ('Grant Monies') payable by IMDA to the Participant selected pursuant to this CFIS ('Selected Participant') under the grant awarded by IMDA to the Selected Participant ('Grant') shall be paid only for reimbursement of the costs incurred by the Selected Participant in relation to the project under this CFIS ('Project') during the period approved by IMDA within which the Project shall be completed, up to the maximum amount(s) of the respective qualifying costs approved by IMDA under the Grant.
2. Unless otherwise agreed by IMDA, the Selected Participant shall be eligible for the Grant if the Selected Participant satisfies certain conditions, including but not limited to:-
 - a. The Selected Participant must be incorporated in Singapore; and
 - b. The Selected Participant must carry out all aspects of the Project in Singapore.
3. The Selected Participant may claim for reimbursements as stated in the Grant Agreement for target(s) that the Selected Participant are required to achieve under the Grant ('Deliverables') which it has achieved (as verified by relevant supporting

documents). Reimbursements by IMDA under the Grant may nevertheless be withheld for any reason whatsoever at the discretion of IMDA. Without prejudice to the generality of the foregoing, reimbursements may be withheld by IMDA:

- a. If there are any pending clarifications required of the Selected Participant by IMDA in connection with the claims forms, progress reports on the Project and/or documents submitted by the Company; and/or
 - b. If there are any pending investigations by IMDA in connection with the Grant and/or the Selected Participant.
4. IMDA shall have the right to recover Grant Monies disbursed or reimbursed to the Selected Participant for any Deliverables which are achieved by the Selected Participant should the Selected Participant fail to complete any of the remaining Deliverables for the Project and/or should IMDA terminate the Grant upon the occurrence of certain events including but not limited to a breach of any terms of the Grant by the Selected Participant.
 5. All costs incurred pursuant to audits in relation to the Grant and/or the Project shall be borne by the Selected Participant and shall not be reimbursed by IMDA.
 6. The Grant may be terminated at the discretion of IMDA without cause upon prior written notice to the Selected Participant.
 7. The Selected Participant shall indemnify and keep IMDA fully indemnified against all liabilities, costs and expenses (including all legal fees) in respect of any claims, demands, suits or actions brought against IMDA by third parties arising out of the Selected Participant's performance of the Project and the terms of the Agreement.
 8. IMDA reserves the right to vary or supplement the terms and conditions of the Grant Agreement upon prior written notice to the Selected Participant.