IMDA 5G PROJECT FOR <CLUSTER> – PROPOSAL TEMPLATE

**Applicant is required to fill in various sections in this form. Incomplete proposal form will not be considered.**

1. Applicant is: (check one box only)

End User

Solution Provider

2. Tech domain area of proposed solution: (check one or multiple boxes)

Robotics/IOT

AR/VR

AI/Data

Others (please specify): \_\_\_\_\_\_\_\_\_\_\_

3. Sectoral area of application for this proposal: (check one box only)

Built Environment

Urban Mobility

Maritime

Aviation

Industry 4.0

Consumer

Others (please specify): \_\_\_\_\_\_\_\_\_\_\_

4. Project Title

*Give a clear project title*

*e.g. “Development of smart glass for remote expert assistance”*

5. Executive summary of Project (not more than 200 words)

*Provide a summary of the solution and explanation on the need for 5G for this project.*

**Part I. Applicant Organisation Information**

|  |  |
| --- | --- |
| Organisation Name |  |
| Mailing Address (if different from registered address) |  |
| Telephone |  |
| Fax |  |
| Country of Incorporation |  |
| Corporate Web Site URL |  |
| ACRA Number / Unique Entity Number (UEN) |  |
| Date of Registration |  |
| Paid -up Capital (S$) |  |

**Organisation Registration: (please check one)**

Sole Proprietorship

Partnership

Private Limited (non-exempt limited by shares)

Public Limited (limited by shares)

Research Institute / Institute of Higher Learning

Others (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Supporting Document (Applicable for shortlisted applicants)**

1. **Latest** Organisation’s ACRA business profile dated not more than 6 months from the date of proposal submission, or other forms of registration documents bearing UEN of the organisation that is dated not more than 6 months from the date of proposal submission, if organisation is not ACRA registered.
2. Financial Statements:
3. For companies – Latest set of audited financial statements that are not more than 2 years from the current financial year end of the company. If latest set of audited financial statements are not available, then latest set of unaudited accounts (not more than 2 years from the current financial year end of the company) accompanied by a signed/endorsed Director (s) declaration form may be accepted in lieu of audited accounts with justification.
4. For audit exempt small companies[[1]](#footnote-1) – Latest set of unaudited accounts that are not more than 2 years from the current financial year end of the company, accompanied by a signed/endorsed Director2 (s) declaration form. Latest set of audited financial statements (not more than 2 years from the current financial year end of the company) should be used if available.
5. For businesses (e.g. sole proprietors, partnerships etc.) – Latest set of Profit & Loss Statement and Balance Sheet that are not more than 2 years from the current financial year end of the business, accompanied by a signed/endorsed Partner(s)/Owner’s[[2]](#footnote-2) declaration form.

**Other Grants Awarded To/ Application In Process By The Organisation\*\***

|  |  |  |  |
| --- | --- | --- | --- |
| Awarding Organisation | Description of Grants/Awards | S$ | Period |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

*\*\* Please indicate funding and/or loans awarded to you by Info-communications Media Development Authority (IMDA), and/or other government agencies and other financial institutions.*

**Part II: Details of Project**

**1. Project objective(s):**

*Describe the goals and reasons for conducting the project.*

**2. Background**

*Describe the background and context of project in terms of the following:*

1. *Current Industry Landscape and Gaps and Market Conditions*

*Describe the current industry landscape, market conditions and technology maturity today, e.g., who are the current industry players in your industry sector / eco-system, what are the current service offerings and technologies, are there new emerging trends or gaps in the industry? Why is that so? Are there new opportunities for your organisation due to the emerging trends or gaps?*

1. *Brief Description of Proposed Solution/Services/Product Offerings*

*Please provide the background on what your proposed solution/service/product can offer and indicate how it will address the above-mentioned industry gaps/problems. Please provide analysis on the potential market demand on your proposed solution/service/product. (i.e., establish why there is a compelling need to embark on the project). Describe the viability of the business case of the project. Please include the level of innovation involved in the project. Please include in your analysis - your competitors and how your solution/service/product will compete against your competitors.*

1. *The need for 5G in this project*

*Why is 5G required in this project (i.e. need for 5G)? What benefit does 5G bring to your project?*

1. *Project Innovation*

* Technology innovation

*Elaborate on key innovations of the proposal or solution. Compare this project with similar projects carried out elsewhere. Highlight and explain any innovative use of technology in this project ; and the benefits and differences of the proposed solution/application over conventional methods or commercially available solutions?*

* New Capability/ Intellectual Property (IP) development

*Describe new capabilities, expected patents or IP that will be developed by the Applicant /and Participants while pursuing this project.*

**3. Project Scope**

a) Application Scenario(s)

*Describe the application scenario(s) detailing the usage of the proposed solution/application.*

b) Functional Features

*Group the functional features and modules into relevant categories and describe these features in detail.*

c) System Overview / Architecture

* *Provide a diagrammatic system overview / architecture / logical diagram for the proposed solution/application and describe the technology (e.g. hardware/software platform, connectivity / interfaces, protocols, etc.) that will be implemented to support this architecture. In addition, the Project shall describe the type of data (e.g. PII data, geographical data, etc) that is available in the application / system.*
* *Clearly indicate the use of 5G technology in the system architecture.*

d) Network Performance Parameters

*Describe the throughput, latency, use of network slicing needed for the solutions.*



e) End-devices support

*Describe the plan and details for the proposed use case(s) end-devices, its features and technical capabilities, the committed number of devices, integration plan etc.*

f) Users/Partners to this project

*Identify the type of users/partners to this project. Provide the names of all participating organisations (users/partners) and describe their roles and their contribution to the project.*

*Note: As this is commercialisation/adoption-focused grant, Applicant is required to have secured commercial interest. Please indicate name of customer(s) (for Solution Provider Applicant) or solution provider(s) (for End User Applicant). A* ***Letter of Intent (LOI)*** *is required with the submission.*

g) Marketing Plans/Media Schedules (if Applicable) related to this project

*Describe the organisation’s current and future marketing/media plans for the proposed solution or application in this project.*

h) 5G Project Proposed Location

* State the location for the pilot trial (if any)?
* State the location of the live operating environment deployment for this project.

i) System security

*Describe the security framework, network & architecture and systems security based on the following table. Fill up the table and attached it with the proposal form.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Category** | **Requirement** | **Meet requirement** | **Describe how requirement will be supported (provide drawings where relevant)** |
| 1.1 | Cybersecurity Framework | Proposal includes a security management framework that includes the security policies, standards, procedures, security architecture and design. | Yes  No |  |
| 1.2 | Cybersecurity Assessment | Proposal includes a Threat, Vulnerability and Risk Assessment (TVRA) to assess the security risks that impact the System, and implement control measures for mitigating the risks, and describe how it will be applied in the System. | Yes  No |  |
| 1.3 | Secure Network & System Architecture | Proposal includes physical and logical network diagrams, and provides a secure network architecture that incorporates security design practices e.g. - No communication is authorized by default, and all communication must be authenticated, authorized and filtered; - Appropriate placement of the security devices such as firewalls, etc; - Validation of data transmitted between the system; - Use of cryptography on all management interfaces for confidentiality, integrity and replay protection; - Implementation of network access controls;  - Web application firewall (WAF) for any web services exposed to external internet; - Mutual authentication using both client and server-side certificates   * Administration modules of the System are not accessible via untrusted networks (such as the Internet) | Yes  No |  |
| 1.4 | Application Cybersecurity Protection | Proposal includes application security measures. Measures should include the following:  - to adopt a secure development lifecycle process - minimized attack surface (e.g. install only required software and enable only required services) - application validations (e.g. input/output validations, workflow controls, message integrity, out of range validations) and;  - addresses known vulnerabilities (e.g. non-validated input, insecure or broken access control, cross-site scripting, buffer overflows, injection vulnerabilities flaws, improper error/exception handling, insecure direct object references) | Yes  No |  |
| 1.5 | Data Security | Proposal includes measures (such as access control and authentication) to protect sensitive information (including PII, user credentials), and ensure that confidentiality and integrity is maintained. | Yes  No |  |
| 1.6 | Authentication & Authorisation | Proposal includes a process for all access to the System and information to ensure proper usage and accountability of all users of the System. Measures should include the following: - Role-based access control (RBAC) for operators/administrators; - Adherence to the principle of ‘least privilege’ for granting authorization to operators/administrators/users; - Adherence to the principle of ‘separation of duties’ for granting authorization to operators/administrators | Yes  No |  |
| 1.7 | Monitoring & Incident Management | Proposal includes listing the audit logs that will be collected, and providing the processes and procedures for the review, maintenance and management of the audit logs to ensure that security incidents/violations can be detected in a timely manner. | Yes  No |  |
| 1.8 | Others | Any other security features such as security management plan, processes alignment with international best practices, security testing (such as Vulnerability Assessment, Penetration testing), use of IAM/PIAM/SIEM/SOAR solutions, etc. | Yes  No |  |

**4. Critical Success Factors**

*Describe the Critical Success Factors (i.e. aspects of project considered most essential to its success and failure) and the assumptions made to achieve successful implementation of this project. Highlight the actions or steps the organisation intends to take to mitigate any area of weakness which affects project success.*

**5. Project Team**

*Outline the composition of the project team including consultants, if any. At least one of the persons listed must be the project manager.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name & Designation** | **Organisation** | **Job Title** | **Role in this project** | **Relevant Experience (Years)** | **Existing/ New Hire** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**6. Project deliverables & schedule**

*[Notes: (1) As a guideline, project duration should* ***not exceed eighteen months****; (2) Successful applicant should be prepared to share relevant project results with IMDA and/or industry.]*

**a) Description of pilot trial phase (if applicable)**

* *Describe the objective and expected outcome(s) of the pilot trial. This would include the specific area of demonstration and the results you expect to obtain from the pilot trial*.
* *Describe the procedures to carry out the pilot*
* *How will the pilot be set-up/installed (attached drawings, if applicable)*

*Please indicate if infrastructure alteration is required as well as details to mitigate potential nuisances to other users*

* *Expected regulatory challenges/approvals*

*Description of regulatory approval required*

* *Space requirements if any (preferred location/type of space)*
* *Any other important information (access requirements, etc.)*

**b) Description of live operating environment deployment phase**

* *Describe the procedures for live operating environment deployment*
* *How will the deployment be set-up/installed (attached drawings, if applicable)*

*Please indicate if infrastructure alteration is required as well as details to mitigate potential nuisances to other users*

* *Expected regulatory challenges/approvals*

*Description of regulatory approval required*

* *Space requirements if any (preferred location/type of space)*
* *Any other important information (access requirements, etc.)*
* *Live operating environment deployment schedule: Below are key milestones provided as a reference. Applicant shall provide the relevant activities and project schedule in the proposal submission. Project reports are required to be submitted upon system commissioning and after 6-month commercial service period. Project Disbursement will be based on Completion of Project Milestones and supporting documents (e.g. Proof of transactions) are required.*

|  |  |  |
| --- | --- | --- |
| **S/N** | **Project Milestones** | **Estimated Duration** |
| 1. | Pilot (Development/Installation & Testing complete) *(if applicable)* | \_\_months |
| 2. | System/Service Commissioning Complete | \_\_months |
| 3. | 6-month commercial service period | 6 months (sustainability period) |
| 4. | Final Project Presentation and Report Submission – upon completion of 6-month commercial service | \_\_months |
|  | **Total** | **\_\_months** |

**7. Impact of Project implementation**

**a) Qualitative Outcomes**

* **Tangible outcomes**

*Describe any qualitative outcomes or benefits to the applicant or the consortium, broader industry and/or ecosystem (i.e. multiplier effect, if any, that will impact the ecosystem or players in the value chain) resulting from the project.*

*Examples of qualitative outcomes:*

* *New process guidelines*
* *New software modules*
* *Improved operations*

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Description of tangible outcome** | **How does it benefit applicant or consortium? (Indicate N.A. if irrelevant)** | **How does it benefit the broader industry and /or ecosystem or players in value chain? (Indicate N.A. if irrelevant)** |
| e.g. new Software Modules/Solutions/ Applications\* |  | e.g. re-useable software module for other new projects | e.g. software module that can be made accessible to broader industry (by way of licensing) |
| e.g. Data or measurements\* |  |  |  |
| Others, please specify |  |  |  |

[\*licensable, non-licensable, open source digital assets]

* **Intangible outcomes**

*New Capabilities/Competencies that will be developed by the Organisation.*

**b) Quantitative Outcomes**

*Examples of quantitative outcomes:*

* *Increase market share or sales by x% in y no. of years*
* *Improve customer satisfaction score from x to y*
* *Reduce process time from x man-hours toy man-hours*
* *Reduce costs from $x to $y*
* *Revenue increase from $x to $y*
* *Number of jobs created*

|  |  |  |
| --- | --- | --- |
| **Performance Indicator in relation to this project** | **Upon completion of project** | **1st year after the end of project #** |
| ***(Compulsory to fill)***  *Value added to the Applicant organisation due to the Project (S$)*  *[To compute the value add, fill up the attached Appendix A and submit it with the proposal form]* | Required. Fill up in attached Appendix A. | Required for up to 3rd year after projection completion. Fill up in attached Appendix A. |
| *e.g. Number of software modules/ application/ solution as a result of this Project* |  |  |
| *e.g. Number of data/measurement sets as a result of this Project* |  |  |
| *e.g. Number of Singapore user organisations as a result of this project* |  |  |
| *e.g. Reduce costs from $x to $y* |  |  |
| *e.g. number of jobs created* |  |  |
| Others, please specify |  |  |

*# figures are non-cumulative*

**c) Other Project Impact**

* *What other customer segments within the same sector or cross-sectors can be addressed by the proposed solution? How can this be done? Please describe any adaptation needed.*
* *How will the proposed solution/application impact or benefit the ecosystem?*

**8. Estimated Project Cost Summary**

Provide breakdown of key cost components and budget required to implement the Project for both:

* Pilot trial (if relevant)
* Deployment to live operating environment

**

**Part III. Commercialisation/ Sustainability Business Plan**

*Note:*

* *For Solution Provider Applicant: This will be a Commercialisation business plan. Please fill up section 1.1*
* *For End User Applicant: This will be a Sustainability business plan. Please fill up section 1.2*

**1.1 Commercialisation Plan (For Solution Provider Applicant only)**

a) Products & Services

|  |  |
| --- | --- |
| What product/service you sell |  |
| Customer you are targeting |  |
| Channel you are targeting customer through  (e.g. Online, physical) |  |

b) Marker Analysis

|  |  |
| --- | --- |
| Market size: *Overall market size - potential customers (different customer segments) & value of market* |  |
| Target markets: *segment within market, why this customer segment.* |  |
| Market Needs: *describe the need for your product/services, buying patterns of target market, what triggers a purchase. [Indicate any commitment(s) from customers.]* |  |
| Competition: *Who are they, how big are they, which customer (segments) they target, key characteristics of their offering* |  |
| Barriers to Entry: *describer any helpful barriers to entry that may protect your business from competition, e.g. access to capital, technology, regulations, employee skills.* |  |
| Regulations: *which regulation is applicable, how you comply* |  |

c) Sales and Marketing Plan (Strategy)

* Competitive edge/advantage: *What is your unique selling proposition, how it benefits customer and what makes you different from competitor’s offering.*
* Marketing plan: *Pricing (how will you price your proposed solution, compare with your competitors), sales & distribution (where and how you plan to distribute to your customer, what method for payment, etc.), advertising & promotion (channel choice, post-sales support, etc.)*

d) Operational Plan

* *Personnel requirements & plan: key management roles, staffing & training needs to support new business.*
* *Operation plan: Facilities/space needs, production needs, technology needs (e.g. background Intellectual Property), supply chain management, logistics & distribution plans, order and fulfilment processes, equipment needs, 5G network service/equipment/device, quality control checks, etc.*
* *Timeline of milestones*

f) Financial Plan and Expected return on investment

* *Funding: what amount and how will the new business be funded (from investors)?*
* *Sales Forecast (revenue streams), Cost structure*
* *Financial projections (5 years)*
* *Return on investment (ROI) assessment (NPV, IRR/WACC), include scenario analysis.*
* *Important Assumptions: List key assumptions (e.g. revenue and cost sides of business) underlying your financial projections and ROI assessment. Describe the growth you are assuming and profit you anticipate generating.*

**Please attach financial plan**

g) Risks

*E.g. commercialisation risk*

**1.2 Sustainability Plan (For End User Applicant only)**

*[Describe in full details on the plans to adopt and operationalise the proposed solution/application, including (but not limited to) the implementation and financial plan to sustain the operation of the proposed solution/application.]*

a) Implementation Plan

* *Personnel requirements & plan: key management roles, staffing & training needs to support new operation.*
* *Facilities/space needs, production needs, technology needs (e.g. background Intellectual Property), supply chain management, logistics & distribution plans, order and fulfilment processes, equipment needs, quality control checks, etc.*
* *Timeline of milestones*

b) Financial Plan and Expected return on investment

* *Funding: What amount and how will new operation be funded?*
* *Financial projections (5 years)*
* *Compute ratio of value of adoption ($) to cost of operations ($); and return on investment assessment (NPV), include scenario analysis.*
* *Important Assumptions: List key assumptions (e.g. revenue and cost sides of business) underlying your financial projections and ROI assessment. Describe the growth you are assuming and profit you anticipate generating.*

**Please attach financial plan**

c) Risks

*E.g. operation/sustainability risk*

**Part IV. Declaration Section**

We, the Applicant, declare that the facts stated in this proposal form and the accompanying information are true and correct to the best of our knowledge and that we have not withheld/distort any material facts.

**Yes, We/I Agree**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of

a Director named in ACRA Biz Profile/

a member of the Senior Management

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name Designation

1. Singapore Companies (Amendment) Act 2014 defines audit exempt small companies as private companies meeting at least 2 of 3 following criteria for immediate past two consecutive financial years:

   Total annual revenue ≤ S$10m;

   Total assets ≤ S$10m;

   No. of employees ≤ 50. [↑](#footnote-ref-1)
2. Director/Partner/Owner signing the declaration form should be a named Director/Partner/Owner in ACRA records. [↑](#footnote-ref-2)