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Description automatically generated**

**Singapore Maritime Institute (SMI)**

**Application Form**

**(Note: Approval of the application is at the sole discretion of SMI.**

**SMI is not obliged to state the reasons for its decision.)**

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| 1. You will need all parties’ information and project details to fill in the form. |

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| 1. **Name of Host Institution (Institute of Higher Learning (IHL)/Research Institute (RI))** | |
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| 1. **Project Title**      1. **Category**: [Next Generation Ports / Smart Shipping / Green Technologies / Digitalisation / Decarbonisation / Talent Development] | |
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| 1. **Project Duration** ( months) **and SMI Funding Amount Sought** ($ ) | |
| **E. Project Team** (Please include CVs and details of all the team members in Appendix I) | |
| Overall team leader (Principal Investigator (PI)) |  |
| List of Co-Investigator(s) (Co-I) |  |
| List of Industry/Academic Collaborators |  |
| **Category of Research Personnel** | **No. of Full-time** |
| Research Scientist |  |
| Research Engineer |  |
| Research Fellow |  |
| Research Associate |  |
| Research Assistant |  |
| Student Assistant |  |

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| **F. Project Abstract** (Maximum 500 words. Please include project details in Appendix II) – Please highlight the novelty and significance of the research, the approach and feasibility of the project, such as industrial relevance and impact. |
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| **G. Summary of Project Objectives** |
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| **H. Comparison with Current Research and State of the Art Technology** (Please highlight the innovation content of the project.) |
| 1. **Significance of Project** (Please highlight the benefits of the project, including how the project addresses any national imperatives, and/or industry needs.) |
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| 1. **Practical Relevance to the Maritime Industry** |
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| 1. **Commercialisation and Translational Plan** (Please highlight how the Industry Collaborator(s) can apply the project’s deliverables and the proposed commercialisation vehicle.) |
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| **L. Summary of Deliverables** |
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| **M. Project Schedule and Milestones**  (Detailed project schedule and milestones to be included in Appendix III) |
| Project duration: months |

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| **N. Key Performance Indicators [KPI], Tracking Indicators [TI] and Targets**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Objective** | **Indicators[[1]](#footnote-2)** | | | **Targets**  **(where applicable)** | | **Manpower training** | [KPI] | 1. | No. of Research Scientist and Engineers (RSE) trained |  | | [KPI] | 1.1 | No. of Research Fellows / Post-Doctoral Researchers hired |  | | [KPI] | 1.2 | No. of Research Associates / Assistants / Engineers hired |  | | [KPI] | 2. | No. of Ph.D Students trained |  | | [KPI] | 3. | No. of Masters Research Students trained |  | | [KPI] | 4. | No. of Student Assistants hired |  | | [KPI] | 5. | No. of Undergrad / Polytechnic / J.C. Students attached |  | | **Build intellectual capital** | [KPI] | 6. | No. of Patent Applications / Technology Disclosures / Know-How |  | | [KPI] | 6.1 | No. of Patent Applications |  | | [KPI] | 6.2 | No. of Technology Disclosures |  | | [KPI] | 6.3 | No. of Know-How |  | | [TI] | 7. | No. of Patent Granted / Intellectual Property (IP) Licensed |  | | [TI] | 7.1 | No. of Patent Granted |  | | [TI] | 7.2 | No. of IP Licensed |  | | [KPI] | 8. | No. of Academic Papers Published(including IMO Papers) |  | | [KPI] | 9. | No. of Maritime Trade Publications |  | | **Technology translation** | [KPI] | 10. | No. of Technologies Deployed (including Licenses) |  | | [KPI] | 11. | No. of Projects with Industry or Lead Demand Users |  | | [KPI] | 12. | No. of Demo, Trials and Pilot Projects |  | | [TI] | 13. | No. of Start-ups / Spin-offs Supported |  | | [KPI] | 14. | No. of Industry Collaborators |  | | [KPI] | 15. | No. of IHLs/RIs Collaborators |  | | [KPI] | 15.1 | No. of Local IHLs/RIs Collaborators |  | | [KPI] | 15.2 | No. of International IHLs/RIs Collaborators |  | | [KPI] | 16. | Amount of Industry Spending on R&D |  | | [KPI] | 16.1 | Amount of Industry Spending on R&D (In Cash) |  | | [KPI] | 16.2 | Amount of Industry Spending on R&D (In Kind) |  | |  | | **Contribution to National Imperatives** | [KPI] | 17. | Support Singapore’s 2050 Net-Zero Emissions Targets and IMO GHG Targets. | Yes/No | | [KPI] | 17.1 | No. of Upcoming Trials for Alternative Fuels in Singapore port (Methanol / Ammonia) to Establish Safety Zones and Finetune Procedures for Future Operations. |  | | [KPI] | 17.2 | No. of Test-bedding Trials of Advanced Modelling and Simulation Capabilities for Risk Assessment with Up-coming Chemspill Exercises by using Integrated Operational Tools. |  | | **Industry Development** | [TI] | 18. | No. of Master Research Students and Ph.D Students Spun Out |  | | [TI] | 19. | No. of Research Staff Spun Out |  | |
| **O. [Start and End] Technology Readiness Level (TRL)**  (Based on NASA TRL 1 to 9)   |  |  |  | | --- | --- | --- | | Item | Start: | End: | | [Component 1] | 1-9 | 1-9 | | [Component 2] | 1-9 | 1-9 | | [Component 3] | 1-9 | 1-9 | |

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| **P. Intellectual Properties (IPs)**  *Applicants shall submit declarations and details such as Background IPs that are required for technology acquisition, payment of licensing fees, and purchase of copyrights/trademarks/patents and explain how they are relevant and required for the proposed development test-bed.* | | | | |
| **Q. Summary of Project Cost and Funding**  (Please attach the detailed budget in Appendix V) | | | | |
| **Project Item** | **SMI Funding Sought (S$)** | **Academic Collaborator (S$)** | **Industry Collaborator (S$)** | **Total Project Cost (S$)** |
| Manpower |  |  |  |  |
| Equipment |  |  |  |  |
| Consumables & Other Miscellaneous Cost |  |  |  |  |
| Overseas Travel |  |  |  |  |
| Indirect Research Cost |  |  |  |  |
| Total |  |  |  |  |

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| **R. Other sources of funding**  (a) Have you, Co-Is or Industry/Academic Collaborator(s) applied for/attained any other forms of incentives/funding? |
| YES / NO  \*If Yes, please provide the details (all fields mandatory) for all grants currently held or submitted for consideration by the PI, all Co-Is and Industry/Academic Collaborator(s) listed in the last three (3) years. These include those supported by and/or applied to universities, other public funding agencies or foundations. There should be **no parallel submissions**.  All PIs, Co-Is and Industry/Academic Collaborator(s) must be accounted for under this section, please indicate “N.A.” if there are no currently awarded grants or grants being applied for.   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **Declared For / Awarded to** | **Grant ID** | **Project Title** | **Funding Agency** | **Status (Awarded / Applied)** | **Total Amount Awarded / Applied for (S$)** | **Years of Support** | **Duration (dd/mm/yyyy to dd/mm/yyyy)** | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |   (b) Please provide details on the funding or other resources to be provided by any organisation(s) for the applied grant.   |  |  |  |  | | --- | --- | --- | --- | | **Type of Resources** | **Funding Organisations** | **Duration of Support (Years)** | **Expiry Date (MMYYYY)** | |  |  |  |  | |  |  |  |  | |  |  |  |  | |  |  |  |  | |

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| **S. Undertaking by PI, all Co-Is and Industry/Academic Collaborator(s)** |
| In signing this Project Application, the project team / personnel UNDERTAKE, on any Project Award, to:   * Declare that the information provided in this application form is true and correct. * Not send similar versions or part(s) of this proposal to other agencies / organisations for funding. * Ensure that the SMI Fund is acknowledged in all publications. * Ensure that all publications arising from research wholly or partially funded by SMI will be forwarded to SMI for approval. * Obtain approval from SMI and/or relevant University/Polytechnic and/or A\*STAR R I before engaging in any commercial activity that will exploit the findings of the research funded under the project. * Sign a confidentiality agreement prior to any discussions with industries, if applicable. * Agree and consent to SMI as well as their respective representatives and/or agents of collecting, using, disclosing and sharing amongst themselves any Personal Data set out in this application, and disclosing such Personal Data within SMI and Organizations / relevant third parties authorised for the purpose of application review and funding consideration. * Provide the Singapore Government, public sector agencies and SMI with information, including data and statistics, pertaining to the project before, during and up to 2 years following its completion, when requested. * Adhere to SMI’s Terms & Conditions of Grant and Guidelines for SMI Funding, as well as all other applicable guidelines, policies and procedures adopted by SMI, which may be amended or varied from time to time. * Agree to hold primary responsibility for the responsible conduct of research, and shall abide and comply with the ethical, legal and professional standards relevant to research, in accordance with the research integrity policy of the Organisation(s). * Provide the Singapore Government, public sector agencies and SMI a non-exclusive, non-transferable, perpetual, irrevocable, worldwide, royalty-free right and licence to use, modify, reproduce and distribute the Foreground IP for statutory functions, non-commercial, research and development and/or educational purposes only.  |  |  |  | | --- | --- | --- | | **Name of Applicant** | **Signature** | **Date Signed** | | Principal Investigator  <Name of Applicant> |  |  | | Co-Investigator  <Name of Applicant> |  |  | | Industry/Academic Collaborator  <Name of Applicant> |  |  |   *Please add more rows if required.* |

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| **T. Overall Evaluation / Undertaking by Evaluators**  Based on the above given evaluations, the Director of Research (or equivalent authority in PI’s employing organisation) of the IHLs or A\*STAR RI (if applicable), in consultation with the head of faculty/school/department of the respective IHLs or A\*STAR RI, and taking into account the number of R&D projects which the PI currently has on hand, hereby decide that the proposed project is:  **SUPPORTED / NOT SUPPORTED**  In signing the Project Application, the IHLs or A\*STAR RIs (if applicable) UNDERTAKE, on any Project Award, to:   * Provide appropriate support towards the project submission. * Ensure that the funds provided are used for the appropriate purposes. * Ensure that all necessary licenses and approvals have been obtained or are being sought * Ensure that approval from SMI has been obtained before engaging in any commercial activity that will exploit the findings of the research funded under the Project; and * Support and agree to this proposal being carried out in the respective IHLs or A\*STAR RIs (where appropriate). * Provide the Singapore Government, public sector agencies and SMI with information, including data and statistics, pertaining to the project before, during and up to 2 years following its completion, when requested. * Provide the Singapore Government, public sector agencies and SMI a non-exclusive, non-transferable, perpetual, irrevocable, worldwide, royalty-free right and licence to use, modify, reproduce and distribute the Foreground IP for statutory functions, non-commercial, research and development and/or educational purposes only.   -------------------------------------------------------------  Name and Signature of Director of Research of the IHL/  Executive Director of A\*STAR RI (or equivalent)  Date: | |
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**APPENDICES I - V**

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| **APPENDIX I: TEAM MEMBERS** |
| Please note that PI must have a minimum of 9 months employment with the respective IHLs or A\*STAR RIs.  For each team member, please provide details on the following:   1. Name 2. Title 3. Department 4. Organisation 5. Postal Address 6. Tel No. 7. Email Address 8. Role and Responsibility in Project, highlighting why the team member is particularly qualified to do this, track record(s), and briefly describe the plans for interaction among the team member(s) and with industry collaborators in achieving the research objectives. 9. CV comprising the below information:  * Personal Particulars (per “A” to “H” above) * Current Position & Past Employment History (Please provide full details, e.g. primary appointment, joint appointments; other academic appointments including those outside of Singapore; percentage of time spent in Singapore every year, if applicable) * Employment History * Academic qualifications (Indicate institution’s name and year degree awarded) * Professional Awards * Research interests * Highlight the top 5 publications in the last 5 years that pertains to the proposed project * Patents filed (related or unrelated to the study) * Summary of the most relevant research outcomes from all previous grants (e.g. patents, awards, etc) (please limit to half a page) |

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| **APPENDIX II: PROJECT DETAILS** | |
| Please provide the following:   1. Project Objectives    1. Clearly state the problem(s) / challenge(s) and how the proposal addresses them.    2. Highlight the novelty and significance of the research, including how the project addresses any national imperatives and/or industry needs**.** 2. Project Description (where relevant)    1. Description and methodology, including how it differs from what others are working on    2. Innovation content, features and specifications, including why you think your proposal will be successful, and quantifiable benefits/costs savings/goals from the proposed technology    3. Comparison with current research and what is the state of the art technology, including who are the leading parties / companies studying the problem, and what are the limitations of their current approaches.    4. Start and End TRL 3. Project Deliverables    1. Detailed list of proposed deliverables, including the expected IPs and technologies that will be developed and the target audience / customers.    2. Highlight any technical challenges and how you plan to overcome them. 4. Role of Industry / Academic Collaborator(s) (If applicable)    1. Brief Background on Industry / Academic Collaborator(s)    2. Contribution to Project, highlighting necessity of cooperation, partnership synergies (added value through cooperation: sharing of risks, costs, know-how, etc.).    3. Benefits for Industry Collaborator(s) and/or maritime industry 5. Commercialisation and Translational Plan    1. How the Industry Collaborator(s) can apply the project’s deliverables, and the proposed commercialisation vehicle. 6. Project Risk(s), including how the project takes these into account 7. QUAD Chart  |  |  | | --- | --- | | Need(s)   * Why is the project being done? * What are the project objectives? * Why is the project significant? | Approach & Assumptions   * Who are involved and why? * What is your proposed approach? * What are your underlying strategic assumptions and basis? * Extent in which underlying strategic assumptions and basis are valid in the local context? * What are the risk factors involved and how does the project factor these in? | | Benefit(s)   * Who will benefit from the project? * What is the desired outcome of the project? * What are the quantifiable quantifiable benefits/cost savings/goals from the proposed technology? * How success of the project is measured, including capability building or talent development in local enterprises / academia where applicable? * Start TRL <>; End TRL <> * How can the outcomes be commercialised and what are the plans? | Buy / Build Analysis   * How does your project stand out compared to other similar projects? (Please cite references.) * What is the current research and state of the art technology? * What is the innovation content of the project? |   References cited should be provided at the end of the document. Proposal should be sufficiently self-contained for an assessment without further reference to other materials. | |
| **APPENDIX III: PROJECT SCHEDULE AND MILESTONES** | |
| Please provide details on the following:   1. Detailed project work plan and milestones 2. Overview in Gantt Chart format   *Please shade (in grey) the time periods occupied by work on specific project milestones and deliverables (example below), along with a brief description where possible. In addition, please indicate who will be involved for each specific milestones or deliverables. Deliverables refer to the objectives indicated in your project proposal. This is to clearly state what is expected to be achieved and delivered at the end of the project.*   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | **SN** | **Research Milestones / Deliverables** | **Organisation(s) Involved** | **Year 1** | | | | **Year 2** | | | | **Year 3** | | | | | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** | **Q3** | **Q4** | | **1** | *e.g. Milestone 1* |  |  |  |  |  |  |  |  |  |  |  |  |  | | **2** | *e.g. Deliverable 1* |  |  |  |  |  |  |  |  |  |  |  |  |  | | **3** | *e.g. Milestone 2* |  |  |  |  |  |  |  |  |  |  |  |  |  | | **4** | *e.g. Deliverable 2* |  |  |  |  |  |  |  |  |  |  |  |  |  | | **5** | *e.g. Milestone 3* |  |  |  |  |  |  |  |  |  |  |  |  |  | | **6** | *e.g. Deliverable 3* |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |   *Please add more rows if necessary.* | |
| **APPENDIX IV: PROJECT ELIGIBILITY** | |
| Project activities performed in Singapore?  [*If “NO” or part of research is performed outside of Singapore, please elaborate here*] | **YES / NO** |
| Project PI and Co-Is based in Singapore | **YES / NO** |

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| **APPENDIX V: DETAILED BUDGETS** | | | | | | | |
| **Expenditure Items** | | **SMI Funding Sought (S$)** | | | **Academic Collaborator**  **(S$)[[2]](#footnote-3)a** | **Industry Collaborator**  **(S$)1b** | **Total Project**  **Cost (S$)** |
| **Category**  **(Refer to Footnote)** | **Details of Items** | **Year**  **1** | **Year**  **2** | **Year**  **3** |
| **Manpower[[3]](#footnote-4)**  (Please provide itemised details) |  |  |  |  |  |  |  |
| **Equipment****[[4]](#footnote-5)**  (Please provide itemised details) |  |  |  |  |  |  |  |
| **Consumables & Other Misc. Cost**3  (Please provide itemised details) |  |  |  |  |  |  |  |
| **Overseas Travel**3**,[[5]](#footnote-6)**  (Please provide itemised details) |  |  |  |  |  |  |  |
| **Indirect Research Cost**5 |  |  |  |  |  |  |  |
| **Grand Total** | |  |  |  |  |  |  |

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| **Justifications for the Manpower (Provide breakdown in Man-Months)** |
| Justifications of Expense of Manpower (EOM):  Summary of EOM:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **No** | **Designation** | **Year 1 ($)** | **Year 2 ($)** | **Year XX** | **Total ($)** | | 1 |  |  |  |  |  | | 2 |  |  |  |  |  | | 3 |  |  |  |  |  | | 4 |  |  |  |  |  | | 5 |  |  |  |  |  | |  | **Total EOM** |  |  |  |  | |
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| **Justifications for the Equipment** |
| Justifications of Expense of Equipment (EOE):  Summary of EOE:   |  |  |  | | --- | --- | --- | | **No** | **Description** | **Total ($)** | | 1 |  |  | | 2 |  |  | | 3 |  |  | | 4 |  |  | | 5 |  |  | |  | **Total EOE** |  | |
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| **Justifications for the OOE** |
| Justifications of Other Operating Expenses (OOE):  Summary of OOE:   |  |  |  | | --- | --- | --- | | **No** | **Description** | **Total ($)** | | 1 |  |  | | 2 |  |  | | 3 |  |  | | 4 |  |  | | 5 |  |  | |  | **Total OOE** |  | |
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| **Justifications for Overseas Travel:** |
| Justifications of Oversea Travel (OT)  Summary of OT:   |  |  |  | | --- | --- | --- | | **No** | **Description** | **Total ($)** | | 1 |  |  | | 2 |  |  | | 3 |  |  | | 4 |  |  | | 5 |  |  | |  | **Total OT** |  | |
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| **PI, Co-Is, Industry / Academic Contribution**  (Please provide details) | | |
| PI Time Contribution | (Name) | % / hours |
| Co-Is Time Contribution | (Name) | % / hours |
| (Name) | % / hours |
| Industry / Academic Collaborator(s) Contribution | (Name) | % / hours |
| (Name) | % / hours |

1. Target for indicator(s) with a numbering sequence should add up to target for the main number. For example, target for 1.1 and 1.2 should add up to target for 1. [↑](#footnote-ref-2)
2. a & 1b Please indicate cash or in-kind under Academic and/or Industry Collaborator’s column. [↑](#footnote-ref-3)
3. PI & Co-PI Manpower Cost are not fundable, Manpower cost should exclude IRC/ Overheads & GST. [↑](#footnote-ref-4)
4. All amount stated for Equipment, Consumables and Overseas Travel should Include prevailing GST [↑](#footnote-ref-5)
5. Overseas Travel do no exceed $6,000 per person per trip and do not exceed $12,000 per year for total travel expenses

   5 Up to 20 percent of the total qualifying approved direct costs. In the computation of the IRC, the costs of the exceptional items are to be excluded. The exceptional items include, but are not limited to, the following: (1) Equipment costing more than S$100,000; (2) Purchase of intellectual property that is needed to carry out the proposed R&D work; (3) Payment for subcontracting of non-research work (e.g., the development of tools for the research); (4) Infrastructural work that is approved (following strong justifications) under the direct Project budget; and (5) Any other exceptional items at SMI’s sole and absolute discretion. [↑](#footnote-ref-6)