

Proof-of-Concept: Co-development of Digital Twin for CGH's Accident & Emergency (A&E) for simulation modeling to complement real-time monitoring

CALL FOR COLLABORATION (CFC)

2022/OOI/CFC-001

DATE: 01 APRIL 2022

INTRODUCTION

1. The Office of Innovation (“OOI”) is issuing this Call for Collaboration (“CFC”), to invite company(ies) and/or organisations to co-develop with CGH, a **proof-of-concept (POC) digital twin for CGH’s Accident & Emergency (A&E) for simulation modeling to complement real-time monitoring (“Project”)**.
2. Companies and/or organisations participating in the CFC may either be a single company or a consortium of companies or organisations, and shall be known as “Participants”.

BACKGROUND OF PROJECT

- As part of the remodelling and expansion of the A&E, the ambulatory area will be temporarily re-located to a new location in an existing space. This temporary location is designated as the Interim A&E.
- Planning for the Interim A&E involves the building of a **digital prototype that will analyse, optimise and predict the performance** of the proposed model of care in this new space to achieve the following:
 - **Efficient utilisation** of a pre-set space at the Interim A&E
 - **Well-integrated flow** of patients and processes, within the Interim A&E as well as between the Interim A&E and the rest of the hospital
 - **Optimal staffing ratio** for the new model of care at the Interim A&E

PROJECT SPECIFICATIONS

- The area to be digital twin has an estimated surface area of 1275 sq metre
- The envisaged solution should ideally be
 - Agnostic to any software or system
 - Allow users/stakeholders to perform updates and be able to create and/or input person/time variables so that users can see flow and traffic
 - Be user friendly or have a dashboard that allows easy tweaking and visualization of the system
 - Run as a standalone system on local server rather than be cloud-based
 - If stakeholders need training to input or create variables, training should be included as part of the project

Scope of Work

1. Understand current limitations in CGH A&E, Interim A&E, and the data available.
2. Propose the IoT technology such as smart sensors for real-time monitoring, with provisions for PDPA.
3. Co-develop the technical specifications of the solution that allows solution to be scaled across CGH (with consultation with IHIS).
4. Work closely with Project team lead and members to validate the solution, either with retrospective data and prospective data.

OWNERSHIP OF INTELLECTUAL PROPERTY

1. All rights, title and interests to Background IP shall remain with the Party introducing or disclosing the same and shall remain unfettered by this CFC.
2. CGH and the Participant(s) shall jointly own all rights and title to all Foreground IP, as tenants in common in equal and undivided shares (“Joint IP”). Any deviations would be considered on a case-by-case basis, and be mutually agreed between CGH and Participant(s).
3. CGH shall have the right to use the Foreground IP in all prototypes and resultant products and services and shall be able to purchase such resulting products and services at a preferential price.

QUALIFICATION CRITERIA

1. There are no restrictions on nationality for individuals, but the entity they represent must be registered in Singapore with the Accounting & Corporate Regulatory Authority (ACRA), or through a consortium with Singapore-registered entities.

PROPOSAL SUBMISSION

1. Participant(s) shall submit a one (1) – year proposal, detailing the technical solution, milestones and deliverables, and costs associated to deliver the scope of CFC.
2. A Gantt Chart for the timeline of the proposal is preferable.
3. All assumptions used in the proposal and projects shall be stated clearly.
4. Associated costs may include manpower, equipment, training, software and consumables.
5. Mockup or demonstration of a final product will facilitate evaluation (previous project is acceptable)

SELECTION PROCESS

1. Only complete Proposal submissions will be evaluated by CGH. Short-listed Participants may be required to make a presentation to CGH Project Team on their Proposal(s) at their own cost and expense.
2. CGH reserves the right to reject any or all Proposals submitted pursuant to CFC. **Where a Proposal is selected by CGH, the relevant Participant(s) will be notified by 31 May 2022.**
3. For the avoidance of doubt, the selection or short-listing of any Proposal by CGH for consideration for the award of the CFC may not necessarily lead to the actual award of the CFC.
4. CGH has the absolute discretion to accept or reject any Proposal submitted to CGH without being liable to give any reason thereof. CGH reserves the right to retain the Proposals submitted by all Participants without liability for the costs of such documents.

EVALUATION CRITERIA

In assessing the short-listed Proposals, the evaluation criteria shall include, but are not limited to, the following:

- **Functionality and operational fit:** The ability and comprehensiveness of the proposal to accomplish the objectives, and operation needs of Project, including ease of integration with EHR in future.
- **Innovative design:** The ability to meet the needs in both operation and utility, and the versatility of the proposal in considering other potential uses.
- **Intuitive user interface:** The methods by which the user operates and manipulate the interface.
- **Cost estimate:** The reasonableness of the estimated cost required to deliver the scope of CFC with. This should include equipment, consumables and other expenses required to develop the POC.
- **Credentials of Participant:** Prior experience in digital twin development, with strong local technical support.

SCHEDULE

Scheduled Timeline	Event
1 April 2022	CFC Launch
30 April 2022	Submission of Letter of Intent by interested Participants
31 May 2022	NDA executions between CGH and Interested Participants
1 June 2022 – 15 June 2022	CFC Briefing to the Interested Participants
15 July 2022	Proposal Submissions
16 July 2022 – 31 July 2022	Presentations by short-listed Participants
August 2022	Award of CFC
September 2022	Collaboration Agreement execution
October 2022	Commencement of Project

Submission of Letter of Intent

- Interested participants may submit a Letter of Intent signed by the authorised representative from your company by **30 April 2022** to innovation@cgh.com.sg