



Collaborative Learning Tools & Learning On The Move

Call for Collaboration

Public Document

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1. INTRODUCTION

- 1.1 In June 2006, the Infocomm Development Authority (IDA) launched Singapore's 10 year infocomm master plan called the "Intelligent Nation 2015" (iN2015) to chart the innovative use of infocomm technologies (ICT) in various economic clusters.
- 1.2 Under IDA's iN2015 Masterplan, IDA has put in place an Education and Learning (E&L) plan to provide pervasive and cost effective infocomm access for learning anytime, anywhere. To realise the E&L plan, IDA launched the EdVantage Programme to deploy ICT in Education to provide a learner-centric, collaborative environment beyond the classrooms to enable a diverse and vibrant schools' landscape.
- 1.3 Under the IDA's EdVantage Programme, IDA launched a sub-programme called Experimentation@Schools Programme (ESP) which aims to look into the development of "blue-sky" projects based on several educational technology themes that can demonstrate the innovative use of ICT in Learning and Teaching (L&T). To achieve this, IDA will lead in the efforts to foster industry partnerships and catalyze integration of ICT in L&T to support Self Directed Learning (SDL) and Collaborative Learning (CoL). In addition, IDA will work with Ministry of Education (MOE) on the mass deployment plans for ICT applications and services in schools to improve the schools' capacity to reach higher levels of ICT adoption. As a start, IDA will focus on two of the educational technology themes under ESP which are (1) Collaborative Learning (CoL) Tools and (2) Learning on the Move (LOTM).

2. IMPORTANT NOTICES

- 2.1 For the avoidance of doubt, this Public Document for the Collaborative Learning (CoL) Tools & Learning On The Move (LOTM) CFC shall be read with and shall be subject to the Important Notices as set out in **ANNEX A**.

3. BACKGROUND

3.1 Guided by MOE's Masterplan 3 (mp3), IDA has identified 'Collaborative Learning' (CoL) Tools and 'Learning On The Move' (LOTM) as two of the key themes under ESP to seed the development of new products and services under this CFC.

3.2 Theme 1: Collaborative Learning (CoL) Tools

3.2.1 At present, students can access multiple web 2.0 tools such as blog and wikis on the Internet as well as learning management systems (LMS) for project or team works. However, some of these tools and LMS may lack learning models/structures to support collaborative learning.

3.2.2 Furthermore, students and teachers lack a unified view and access to these tools and LMS, as they have disparate and disconnected databases. These disparate databases also pose a challenge for teachers in searching and pulling together information on students' contributions to identify students' learning patterns and needs.

3.2.3 The aim of this CFC is to develop tools to support learning models/structures for collaborative learning; with capabilities to enable teachers to search and analyse students' contributions from different web 2.0 tools and learning systems to generate reports on students' learning patterns and needs.

3.3 Theme 2: Learning On The Move (LOTM) Tools

3.3.1 Currently, many schools embark on field trips for various subjects to enable experiential learning and authentic learning for students. Schools normally have to engage service providers to organise and conduct these field trips which are mostly pen and paper based and may not fully meet the requirements of the curriculum.

3.3.2 IDA has collaborated with MOE, schools, research institutions and industry partners in the conceptualisation and development of interactive learning trails projects in several authentic learning

locations. These projects include the Sungei Buloh Wireless Trail¹, Mediascape@Zoo² and Chinatown interactive Learning Trail³.

3.3.3 The tools used to create these learning trails are mostly proprietary and trails created using these tools can only work with one or a few specific devices. Furthermore, teachers and students find difficulties in using the tools because they are not intuitive and tedious to use.

3.3.4 The aim of LOTM is to enable creation of interactive learning trails through the use of “easy to use” tools. The learning trails created shall engage learners and enhance their learning experience.

4. OBJECTIVE

4.1 The Infocomm Development Authority of Singapore (“**IDA**”) is issuing this Call for Collaboration (“**CFC**”) to invite Participants to submit proposals (“**Proposals**”) for the development and piloting of Collaborative Learning (CoL) and Learning On The Move (LOTM) Tools with selected schools identified by IDA.

4.2 IDA also intends to work with designated partner(s) to conduct impact studies to document learning points and learning outcomes from the CoL and LOTM projects. Awarded Consortiums are expected to work with IDA and designated partner(s) to conduct the impact studies where the findings will be used to plan for the future deployment of the CoL and LOTM tools in schools.

¹ The Sungei Buloh Wireless Trail was developed jointly by iCELL Network, IDA, Kranji Secondary School, MOE and National Parks Board (NParks) using WiFi network and 2D barcodes. Launched in August 2007, this Geography and Science trail traced the Mangrove Boardwalk in the wetland reserve, allowing learners to access multimedia contents through ultra-mobile personal computers (UMPC) provided by the park. With webcams installed on the UMPCs, students are able to assess location specific information on the wetland reserve by scanning 2D barcodes that are located strategically along the wireless learning trail.

² Mediascape@Zoo was developed jointly by Hewlett-Packard (HP) Singapore, Futurelab (who provided pedagogical guidance on the design of the trail), Tao Nan School, and WildLife Reserves of Singapore (Singapore Zoo) using HP’s mScape location-based media software in 2007. Students walked freely around the Zoo with GPS-enabled PDAs, to complete tasks that were triggered when they venture into a pre-defined location.

³ The Chinatown interactive Learning Trail was developed with the objective of enhancing the learning of Chinese Language and Culture in an outdoor environment. Launched in Feb 2010, it was presented as an interactive location-based role-playing game in Chinatown where learners are challenged to complete context-specific tasks at designated learning hotspots by collaborating in teams and learning from physical environment.

5. SCOPE

- 5.1 This CFC comprises the following areas and Participants may propose one or more projects that meet the requirements in these areas:
- 5.1.1 Collaborative Learning (CoL) Tools (refer to **ANNEX B** for detailed scope and requirements)
- 5.1.2 Learning on the Move (LOTM) Tools (refer to **ANNEX C** for detailed scope and requirements)
- 5.2 Participants shall submit proposals with specific deliverables, milestones, timeline, project costing, future business plans and pricing models. Participants may propose other unique features or components that are not listed in this CFC scope. It is recognised that each component can have varying degrees of technical difficulties. The ability to meet the more challenging features and propose differentiated suite of solutions will strengthen the proposal.
- 5.3 The project scope shall include the following phases and Awarded Consortiums are expected to deliver the project within the project schedule as indicated in **Table A – CoL Tools** and **Table B – LOTM Tools**.

Table A – CoL Tools

<u>Phase</u>	<u>Description</u>	<u>Expected Deliverables</u>	<u>Estimated Schedule *</u>
1. Project Development	<ul style="list-style-type: none"> ○ Gather users' requirements (e.g. key functionalities and features to support CoL learning activities) from MOE and selected schools identified by IDA ○ Develop the tools and components according to user requirements & CFC scope in clause 3.1.1 i to 3.1.1 iv under CFC Public Document-Annex B ○ Conduct Users Acceptance Test ○ Assist IDA and its designated partner(s) in the 	<ul style="list-style-type: none"> ○ User requirements specifications ○ Developed CoL Tools ○ Users Acceptance Test sign-off ○ Inputs to impact study 	Oct'10 – Jun'11 (8 months)

<u>Phase</u>	<u>Description</u>	<u>Expected Deliverables</u>	<u>Estimated Schedule *</u>
	Impact Study.		
2. Pilot of Developed Tools	<ul style="list-style-type: none"> ○ Pilot developed CoL tools with at least 2 selected schools identified by IDA of up to 2 classes per school. ○ To demonstrate how the developed CoL tools can help achieve the schools' key learning outcomes for CoL ○ Refine and enhance tools based on users' feedback ○ Assist IDA and its designated partner(s) in the Impact Study 	<ul style="list-style-type: none"> ○ Successful pilot with at least 2 schools ○ Inputs to impact study ○ Refined/enhanced Tools 	July'11- Dec'11 (6 months)
3. Project Closure & Report	<ul style="list-style-type: none"> ○ Deliver a report on the results of the pilot, key learning points and implementation considerations ○ Deliver a Case Study to describe how the developed CoL tools have helped meet the users' needs for CoL projects ○ Assist IDA and its designated partner(s) in the Impact Study. 	<ul style="list-style-type: none"> ○ Report on pilot results, key learning points and implementation considerations ○ Inputs to impact study ○ Case Study 	Jan'12- Apr'12 (4 months)

**Subjected to confirmation after the award*

Table B – LOTM Tools

<u>Phase</u>	<u>Description</u>	<u>Expected Deliverables</u>	<u>Estimated Schedule *</u>
1. Project Development	<ul style="list-style-type: none"> ○ Gather users' requirements (e.g. activities leading to achievement of key learning outcomes) from MOE and selected schools identified by IDA ○ Develop the tools and components according to user requirements & CFC scope in clauses 3.1.1 to 	<ul style="list-style-type: none"> ○ User requirements specifications ○ Developed LOTM Tools ○ Users Acceptance Test sign-off ○ Inputs to impact study 	Oct'10 – Apr'11 (6 months)

	<p>3.1.9 and 4.1 under CFC Public Document-ANNEX C</p> <ul style="list-style-type: none"> ○ Conduct Users Acceptance Test ○ Assist IDA and its designated partner(s) in the Impact Study 		
2. Authoring of Learning Trails	<ul style="list-style-type: none"> ○ The creation of the learning trails (as detailed in ANNEX C1-3) would be separately procured. ○ Participants can submit a separate business proposal (including <u>manpower rates</u>, refer to Appendix B5 under CFC proposal form B) for trails creation. ○ Assist MOE-designated partners to create at least 2 learning trails to demonstrate how the developed LOTM tools can easily create learning trails. ○ Assist IDA and its designated partner(s) in the Impact Study 	<ul style="list-style-type: none"> ○ At least 2 learning trails are successfully created by MOE-designated partner ○ Inputs to impact study 	<p>Mar'11-Jul'11 (5 months)</p>
3. Pilot of Learning Trails	<ul style="list-style-type: none"> ○ Pilot at least 2 learning trails with at least 4 selected schools with each learning trail used by at least 2 selected schools of up to 2 classes per school identified by IDA ○ To demonstrate how the developed LOTM tools support the creation of learning trails to achieve the key learning outcomes for LOTM ○ Refine and enhance tools based on users' feedback ○ Assist IDA and its designated partner(s) in the Impact Study 	<ul style="list-style-type: none"> ○ Pilot at least 2 learning trails with at least 4 schools ○ Refined/enhanced Tools ○ Inputs to impact study 	<p>Aug'11-Dec'11 (5 months)</p>
4. Project Closure & Report	<ul style="list-style-type: none"> ○ Deliver a report on the results of the pilot, key learning points and implementation 	<ul style="list-style-type: none"> ○ Report on pilot results, key learning points and implementation 	<p>Jan'12-Apr'12 (4 months)</p>

	<p>considerations</p> <ul style="list-style-type: none"> ○ Deliver a Case Study to describe how the developed LOTM tools have helped meet the users' needs for LOTM projects ○ Assist IDA and its designated partner(s) in the Impact Study 	<p>considerations</p> <ul style="list-style-type: none"> ○ Inputs to impact study ○ Case Study 	
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**Subjected to confirmation after the award*

- 5.4 Awarded Consortiums are required to work with IDA and its designated partner(s) to conduct impact studies to assess and validate effectiveness of the CoL and LOTM tools. Awarded Consortiums shall make available the deliverables, including developed CoL and LOTM tools, users' feedback and any other key learning points derived from the pilots.
- 5.5 Awarded Consortium shall provide IDA and MOE free access to the developed CoL and LOTM Tools for a minimum period of 1 year after successful completion of project for at least 300 users. Participants shall also include in the proposal the business plans and models for long term sustainability, mass deployment and overseas commercialisation of the CoL and LOTM Tools. Participants shall provide the pricing models as indicated in CFC Proposal Submission Form A-Appendix A3/ Form B-Appendix B3). In addition, participants may propose alternative pricing models.
- 5.6 The solutions proposed can be existing products with enhancements or new development. Participants are encouraged to include research and development expertise and activities as part of the proposal.
- 5.7 Participants shall indicate all additional services to deliver the full solution, such as project management, systems integration, training, change management, financial or insurance coverage for the applications.

6 PROJECT FUNDING

- 6.1 IDA recognises the risks and investment cost associated with the development and deployment of the proposed solutions. IDA is prepared to co-fund the initial investment necessary to undertake the promising projects.
- 6.2 The funding for selected project(s) will be determined upon assessment of the impact and scope of the project. All terms and conditions of any such approved funding shall be agreed between selected Participants and IDA.
- 6.3 The funding support will be subjected to IDA's project funding criteria, and will be performance-based to encourage the completion of the proposed applications/services as well as the achievement of committed targets. Specifically, the final disbursement will be withheld until the Tools can demonstrate meeting users' needs (e.g. activities leading to key learning outcomes) fully before project completion.

7 PROJECT CONSIDERATIONS

7.1 Consortium Composition

- 7.1.1 Each Consortium shall clearly identify a Consortium lead for the purpose of managing and coordinating the activities of the consortium. The Consortium lead shall be responsible for submitting the proposal on behalf of all its partners. The roles and responsibilities of every Consortium member must be clearly articulated in the proposal jointly submitted by the Consortium.
- 7.1.2 Each Consortium is required to find its own business partners with the necessary expertise, experience, and domain knowledge and form a core project management team comprising of at least one member trained in pedagogy. The Consortium is expected to work with the content owners, MOE and schools.
- 7.1.3 The Consortium lead shall ensure all business partners are confirmed members of the Consortium at the point of proposal submission to IDA. After submission, the Consortium lead shall obtain prior approval from IDA before any change in the Consortium members.

7.1.4 IDA reserves the right to disqualify or reject any project proposal in the event of a withdrawal of any project Consortium member, or where any material representation within the project proposal is discovered to be inaccurate, misleading or false.

7.2 Prerequisites for Participant(s)

7.2.1 The minimum pre-requisites for Participants in this CFC are as follows:

7.2.1.1 The Consortium lead shall be registered in Singapore with the Accounting & Corporate Regulatory Authority (ACRA);

7.2.1.2 The core development of the proposed project(s) shall be done in Singapore;

7.2.1.3 Project shall be implemented in collaboration with IDA or MOE project teams and to be completed within 18 months;

7.2.1.4 Each Consortium shall indicate the investment amount (in total) per CoL and LOTM within 18 months. Such investment may be according to development, pilot and mass deployment phases, and may comprise infrastructure provision, technology provision and refresh, expert manpower, research activities and financial resources; and

7.2.1.5 Project shall demonstrate innovative use of technologies within the Education context.

7.3 Design Approach

7.3.1 The Consortium should consider the following for the design and development of the CoL and LOTM Tools:-

- 7.3.1.1 Adopt common industry design approaches (e.g. Service Oriented Architecture) and open standards (e.g. World Wide Web Consortium);
- 7.3.1.2 Adopt SCORM 2004 3rd edition as the content exchange standard to ensure integration with LMS by providers appointed by MOE⁴ to allow exchange of information across various systems;
- 7.3.1.3 Web-based for easy accessibility over the internet;
- 7.3.1.4 Impact and integration issues to MOE's network infrastructure;
- 7.3.1.5 Import and export of content from LMS to be embedded as part of content for learning trails;
- 7.3.1.6 Search and retrieve students' contributions from different web 2.0 tools and learning systems to generate reports on students' learning patterns; and
- 7.3.1.7 Ease of use, reliability and security.

7.4 Data and Interface standards

- 7.4.1 Awarded Consortiums shall work closely with IDA to develop the data and interface standards to be used in the CoL and LOTM Tools.
- 7.4.2 The defined standards shall be open, non-proprietary, and based on prevailing international/industry standards. These standards shall be re-usable by other parties to ensure integration between LMS and the CoL and LOTM Tools for information sharing and exchange.

⁴ The list of appointed LMS providers to schools will only be published after the award of tender IDA(T)-848. The tender is currently under-going evaluation and the award is likely to be announced by MOE in Q2 FY2010.

7.4.3 IDA shall own the foreground IP for the document/data standards and interface specifications developed under this CFC.

7.4.4 After the successful pilot of the CoL and LOTM Tools, IDA will publish the standards and specifications for use by other industry parties.

7.5 Proposal Submission Information

7.5.1 Each Consortium shall submit separate project proposal forms for each theme.

7.5.2 It is important that the participants duly fill up all sections of the Project Proposal Form. The roles and responsibilities of every member within the Consortium must be clearly specified. In addition, proposals submitted shall also include:-

7.5.2.1 Detailed references in any recent implementation of projects of similar nature;

7.5.2.2 System and application design architecture diagrams and workflows;

7.5.2.3 Detailed project deliverables, milestones, timeline and costs for 18 months project period; and

7.5.2.4 Business plans and pricing models for future mass deployment into schools.

8. SCHEDULE

8.1 Timeline of Events⁵

Date	Event
16 Mar 2010	Public Announcement of CFC Release of CFC Documents Registration Opens for CFC Public Briefing
23 Mar 2010	Registration Closes for CFC Public Briefing
25 Mar 2010	CFC Public Briefing + Networking Session
19 May 2010	Deadline for Proposal Submission/CFC Closes
14 – 25 Jun 2010	Presentation of Proposal by short-listed participants
Sep/Oct 2010	Announcement of selected proposals and Award of CFC

8.2 Industry Briefing

8.2.1 All interested companies are invited to attend the CFC Industry Briefing. This briefing will be conducted by IDA and will cover the details of the CFC, including the events leading to the final award of the grants, and expectations of the Proposals.

8.2.2 All parties interested to attend the public briefing are to register via the below url: www.ida.gov.sg under Sector Development >> Education >> Call-for-Collaboration: Collaborative Learning (CoL) Tools and Learning on the Move (LOTM).

8.2.3 Details of the CFC Industry Briefing will be made known to registered parties via email.

⁵ Timeline of events is subjected to change by IDA. Please refer to www.ida.gov.sg for more info or send your enquiries to infoedv@ida.gov.sg.

9. SELECTION PROCESS

9.1 Selection of Proposal(s) for Consideration for Award of Grant

9.1.1 Only complete Proposals will be evaluated by IDA for consideration for the award of a grant. Short-listed applicants may be required to make a presentation of their Proposal(s) (at their own cost and expense) and answer questions on the project in response to IDA's Evaluation Committee.

9.1.2 Without prejudice to paragraph 9.3, IDA reserves the right to reject any or all Proposals submitted pursuant to this Public Document. Where a Proposal is selected by IDA for consideration for the award of a grant, the relevant Participant will be notified by IDA. The terms of the project, project milestones, and co-funding terms will be separately negotiated and agreed between the parties.

9.1.3 For the avoidance of doubt, the selection of any Proposal by IDA may not necessarily lead to the award of a grant.

9.2 Evaluation Criteria

9.2.1 Proposals will be reviewed and evaluated by an Evaluation Committee nominated by IDA. It is essential that each submitted proposal contains sufficient details and is written in good and concise English. Evaluation criteria of the Consortium's proposal will include the following factors:

9.2.1.1 Originality, level of innovation and sustainability of the proposed solution;

9.2.1.2 Level of investment, commitment and support throughout the project;

9.2.1.3 Proposed business models including the revenue model and service pricing;

- 9.2.1.4 Ability to develop, deploy and pilot the solution within 18 months;
- 9.2.1.5 Track record and domain knowledge of the Consortium;
- 9.2.1.6 Design and scalability of the proposed solution;
- 9.2.1.7 Cost efficiency of the proposed product and service; and
- 9.2.1.8 Compliance with the requirements and conditions as set out in this CFC Public Document.

9.3 Disclaimer

- 9.3.1 IDA shall have the absolute discretion to accept or reject any Proposal submitted to IDA without being liable to give any reason thereof. IDA reserves the right to retain the Proposals submitted by all parties without liability for the costs of such documents.

10. SUBMISSIONS

10.1 Format of Submissions

10.1.1 Submissions should be made using the **CFC Proposal Submission Form** that can be downloaded from the IDA website: www.ida.gov.sg under Sector Development >> Education >> Call-for-Collaboration: Collaborative Learning (CoL) Tools and Learning on the Move (LOTM).

10.2 Place and Time of Submission

10.2.1 Four (4) hardcopies and one (1) soft copy (in a CD-ROM) of the proposal should reach IDA no later than **19 May 2010 at 4:00 p.m.** All proposals must be clearly marked as “**CoL Tools and LOTM CFC**”, **highlighting the theme (CoL or LOTM) that the project proposal is addressing**, and addressed to:

IT in Learning HQ

Infocomm Development Authority of Singapore
8 Temasek Boulevard, #14-00 Suntec Tower 3
Singapore 038988

10.2.2 Proposals may also be submitted in person at the IDA reception desk on the 14th floor of Suntec Tower 3.

10.2.3 IDA reserves the right not to accept late submissions.

10.3 Contact Details

10.3.1 No further enquiries will be entertained after **12 May 2010**. Enquiries regarding this CFC should be emailed to infoedv@ida.gov.sg. You may also wish to contact the following officers for more information:

LOTM

Mr. Teo Chan Chuan
DID: (65) 6211 1342
Fax: (65) 6211 2110

CoL Tools

Ms. Jocelyn Teo
DID: (65) 6211 3834
Fax: (65) 6211 2110