



CALL FOR COLLABORATION

SMART AIRPORT & PASSENGER TRAVEL

14 MARCH 2003

WITH SUPPORT FROM



Table of Contents

	Page
1.0 INTRODUCTION.....	1
2.0 BACKGROUND	1
3.0 OBJECTIVES	2
4.0 SCOPE	3
4.1 RETAIL AND ENTERTAINMENT.....	3
4.2 MOBILE TRAVEL SOLUTIONS.....	3
4.3 PASSENGER RELATED & SECURITY OPERATIONS	4
5.0 PROJECT CONSIDERATIONS.....	5
5.1 CONSORTIUM FORMATION.....	5
5.2 PREREQUISITES FOR PARTICIPANT(S).....	5
5.3 COLLABORATION WITH IDA'S PARTNER AGENCIES.....	5
5.4 APPOINTMENT OF A CONSORTIUM LEAD	6
5.5 PROJECT SUBMISSION FORMS.....	6
6.0 TIMELINE AND SELECTION PROCESS	6
6.1 TIMELINE OF EVENTS	6
6.2 PUBLIC BRIEFING	7
6.3 NETWORKING SESSION	7
6.4 EVALUATION PROCESS	9
6.5 SELECTION OF PROJECTS	9
6.6 AWARD OF PROJECT	9
6.7 CONFIDENTIALITY	9
6.8 DISCLAIMER	10
7.0 SUBMISSIONS	10
7.1 FORMAT OF SUBMISSIONS	10
7.2 PLACE AND TIME OF SUBMISSIONS.....	10
7.3 CONTACT DETAILS	11
8.0 UPDATES TO DOCUMENT.....	11
 ANNEX A	
ROLE OF THE CIVIL AVIATION AUTHORITY OF SINGAPORE	12
 ANNEX B	
ROLE OF THE IMMIGRATION & CHECKPOINTS AUTHORITY.....	14
 ANNEX C	
ROLE OF THE SINGAPORE POLICE FORCE.....	16

1.0 INTRODUCTION

The Smart Airport and Passenger Travel Call for Collaboration (CFC) represents part of a series of Calls for Collaboration under the Wired With Wireless Programme managed by the Info-communications Development Authority of Singapore (“IDA”). In partnership with the Civil Aviation Authority of Singapore (“CAAS”), the Immigration & Checkpoints Authority (“ICA”) and the Singapore Police Force (“SPF”), this CFC seeks to bring together relevant parties to develop and pilot innovative applications for the Singapore Changi Airport (“Changi Airport”) as well as for the traveller.

The target audience of this CFC are technology providers such as application developers and wireless device manufacturers, content providers, as well as user companies related to travel such as Changi Airport’s corporate clients and travel agencies.

IDA, CAAS, ICA and SPF recognise that to develop a next-generation airport through which travellers can have a hassle-free passage, there must be an optimum balance of security, operational efficiency and service level. To develop advanced mobile travel services, companies would need to collaborate. In particular, the value of such services can increase as more travel suppliers collaborate in providing their offerings. As such, IDA would like to invite the infocomm industry, together with the travel industry, to develop and pilot innovative applications in this arena.

2.0 BACKGROUND

Airports aim to provide a smooth passage for travellers while at the same time ensuring their safety. Singapore’s Changi Airport has been consistently rated the best airport in the world by numerous international surveys, and is particularly known for its hassle-free clearance of passengers. Notwithstanding this, Changi Airport constantly seeks to enhance its service level, security and operational efficiency through the use of infocomm innovations, especially when the technology landscape is ever changing. For example, a wireless local area network has been launched early this year in Terminals 1 and 2, allowing passengers to access broadband Internet at their convenience. The threat of terrorism in recent years has also necessitated heightened security measures. Infocomm innovations could strengthen these measures while maintaining the quality of the passenger’s experience.

Travel needs are not limited to the airport environment. The typical traveller requires land transport, food and lodging, as well as up-to-date flight information. In the past, airlines, car rental firms, hotels, travel agencies and insurance companies that predominantly make up the travel industry have implemented various IT applications, such as computer reservation systems, to reduce their operating costs and response time to customers. PC-based Internet travel sites, which were introduced in the late 1990s, have become popular as they enabled consumers to access global distribution systems directly, compare prices and perform bookings.

With the increasing convergence of wireless communications, web services and the Internet, new opportunities are opening up for the development of smarter travel solutions. At the back-end, the recent emergence of XML Web Services is making it possible for multiple suppliers to integrate their reservation systems and share pertinent traveller information so that their services can be offered seamlessly to consumers. At the front-end, advancements in wireless data speeds and mobile platforms can potentially make the mobile device an indispensable tool through which personalised, location-based travel services are provided to consumers anytime and anywhere. Singapore, with its small size and a high percentage of cellular traffic generated by roaming subscribers, can provide a unique environment for the development and test bedding of smart mobile travel solutions.

3.0 OBJECTIVES

This CFC seeks to achieve the following objectives:

- a) Encourage companies to develop and pilot innovative wireless applications that enhance the competitiveness of Changi Airport;
- b) Encourage the travel and infocomm industries to jointly explore business opportunities in mobile travel solutions; and
- c) Facilitate the exchange of ideas and possibilities between user companies, public agencies and technology providers.

In this CFC, CAAS, ICA and SPF may consider collaborating with technology providers for the development of advanced applications that pertain to their operations at Changi Airport. IDA is prepared to fund in part the development and trial costs incurred by private-sector enterprises. Selected CFC participants may also be able to jointly market the developed applications and services with IDA and CAAS upon successful completion.

4.0 SCOPE

The scope of this CFC is limited to the development and trial of wireless applications that are related to the traveller experience. The applications could however include the use of technologies such as web services, biometrics or smart card technologies necessary to deliver a complete solution.

As a guide, proposed projects should fall within one or more of the following three categories listed in sub-sections 4.1 to 4.3. The various scenarios given in each category are merely illustrations and are by no means exhaustive. Participants are encouraged to be innovative in applying wireless technologies to the three categories.

Participants are to seek the advice of IDA, should they intend to submit applications beyond the scope of this CFC.

4.1 Retail and Entertainment

These are wireless services that cater to passengers at the airport or in the plane. The user companies in this category are expected to be, but not limited to, the airport duty-free shops and food & beverage outlets, airlines, and content providers.

- Scenario 1: Mobile Advertising

A business traveller's favourite duty free shop, with which he had earlier signed up for this service, forwards him promotional information or discount coupons once he checks-in through his mobile device. Being in a hurry to catch his flight, he views a product of interest through a multimedia message while in the taxi and decides to order the item, which he can later collect in the plane. The item can be billed to his credit card or added to his phone bill.

- Scenario 2: In-flight Entertainment

In the plane, a traveller logs into his company's corporate network using wireless local area networking technologies. After replying to his emails, he plays a wireless network game with other passengers in the plane, which gives the winner a discount voucher for his next flight with the airline.

4.2 Mobile Travel Solutions

These are essentially wireless travel services that can reduce hassle for the traveller in each segment of his journey, be it pre-travel, in-transit, arrival at destination or the return journey. Travellers are already starting to benefit from

the ability to view flight schedules from their mobile device. The opportunities can yet be extended further.

- Scenario 1: Integrated Ticketing

After a traveller confirms his flight bookings through his PDA, the application recommends hotels with available rooms based on the period of travel and his stored preferences. At the same time, the application enables him to book tickets to events or attractions at his destination.

- Scenario 2: Mobile Check-in

The frequent traveller checks in using his mobile device and receives a digital boarding pass. He scans the pass when he drops his luggage at a designated belt, and a biometrics system verifies his identity. The digital pass is scanned again as he enters the departure hall and boarding area, verifying that he is a valid passenger.

- Scenario 3: Flight Re-bookings

When the passenger's flight is cancelled due to bad weather, the airline proactively suggests an alternative flight through the passenger's mobile device. After the passenger confirms the new flight booking, the intelligent application communicates the changes not only to the airline but also to affected business associates, family members, as well as to the rental car agency and hotel where he had earlier made bookings. This seamless exchange of information allows all parties to make corresponding adjustments easily.

4.3 Passenger Related & Security Operations

This category refers to wireless applications that improve the efficiency of airport operations such that passenger waiting time is reduced, or enhances airport security. Possible areas include baggage handling, catering, immigration and pre-flight check-in.

- Scenario 1: Tarmac Management

Wireless PDAs with specialized software allow airline employees and airport personnel to instantly update flight schedules based on conditions at the tarmac. The real-time information, provided to all relevant parties simultaneously, may reduce the delay of planes waiting to taxi out on the runway.

- **Scenario 2: Integrated Airport Operations Management**

Airport personnel use mobile devices, in combination with wireless networks, to access live spatial data, maps, operational information and deployment plans. The personnel may access information on the airport's flow of activities such as the movement of aircraft and the boarding, departure and arrival times. Digital maps show the real-time locations of airport personnel as well as provide information on the airport layout, facilities and contact means. Such an application may promote efficiency and enhance co-ordination amongst different airport personnel especially when incidents occur.

5.0 PROJECT CONSIDERATIONS

5.1 Consortium Formation

Participants are encouraged to find their own business partners with the necessary expertise, experience and domain knowledge, and form a consortium for the implementation of their project. Single companies that meet the scope and requirements of the CFC may also submit proposals for the CFC as an individual effort. However, multi-party collaboration is strongly encouraged and will be viewed favourably. All key partners needed for the business and technical aspects of a project must be named in, and form part of, the consortium at the point of project submission.

5.2 Prerequisites for Participant(s)

The minimum pre-requisites for participants in this CFC are as follow:

- a) The consortium must consist of at least one technology provider registered in Singapore with the Registry of Companies and Businesses;
- b) The proposed project must be implemented in Singapore;
- c) The proposed project must include all necessary partners to implement a complete solution.

5.3 Collaboration with IDA's Partner Agencies

In this CFC, CAAS, ICA and SPF may provide necessary information on Changi Airport, at their discretion, for various participating consortia. CAAS, ICA and SPF may consider being a member of, and play an active part within, consortia of companies to develop and implement applications that pertain to their operations at Changi Airport and that fall under the scope of this CFC.

Participants interested in working with CAAS, ICA and/or SPF are advised to contact CAAS, ICA and/or SPF directly. The type of information that CAAS, ICA and SPF may potentially provide, the collaborative opportunities as well as their points of contact are available in Annexes A, B and C respectively.

5.4 Appointment of a Consortium Lead

If the proposed project involves multiple partners, it is required that a consortium lead be appointed to manage the team and the project, and to liaise with IDA. The consortium lead must be a Singapore registered company. The consortium lead is responsible for submitting a proposal on behalf of the consortium participating in the project, and if selected by IDA, will be accountable to IDA for the progress of the project.

5.5 Project Submission Forms

It is important that the participants duly fill up all sections of the “Smart Airport and Passenger Travel Call For Collaboration” Project Submission Form. The roles and responsibilities of every participant within the consortium must be clearly specified. The forms are available for download from IDA’s website. Please read section 7 for details on the submission process and deadlines.

6.0 TIMELINE AND SELECTION PROCESS

6.1 Timeline of Events

<u>Scheduled Timeline</u>	<u>Event</u>
14 Mar 2003 (Fri)	Launch of CFC
27 Mar 2003 (Thu)	Registration Deadline for Public Briefing
3 Apr 2003 (Thu)	Public Briefing
14 Apr 2003 (Mon)	Registration Deadline for Networking Session
17 Apr 2003 (Thu)	Networking Session
17 Jul 2003 (Thu)	Last Day for Enquiries before Final Proposal Submission
18 Jul 2003 (Fri)	Final Proposal Submission
31 Jul 2003 (Thu)	Preliminary Shortlist
Aug 2003	Company Presentations to CFC Evaluation Committee
Sept 2003	Award of Projects

6.2 Public Briefing

Interested parties are invited to attend the Smart Airport and Passenger Travel CFC Public Briefing. This briefing will be conducted jointly by IDA, CAAS, ICA and SPF. It will cover the details of the objective and conduct of the CFC, including the events leading to the final award of project, and expectations of the proposals.

Details are as follows:

Date : **3 April 2003 (Thu)**
Time : 10:00 am
Venue : Meeting Room 325, Level 3
Suntec Singapore International Convention & Exhibition Centre
1 Raffles Boulevard
Suntec City
Singapore 039593

All parties interested in attending the public briefing are to register online through IDA's website or by email to cfc@ida.gov.sg by 27 March 2003. For registration by email, please include the following information:

Email Subject Title

“SAPT CFC Public Briefing”

Email Body

Attendee's

1. Name
2. Designation
3. Department
4. Organisation
5. Telephone Number

6.3 Networking Session

Interested parties seeking relevant and complementary partners to collaborate with are invited to attend a networking session. Attendees may have an option to conduct presentations during the networking session. Enterprises are strongly encouraged to present an overview of their current challenges, or even the specific solutions that they are seeking. Technology providers are encouraged to present the applicability of their solutions to the scope outlined in this CFC. Attendees may also exhibit their products or solutions relevant to this CFC.

Details are as follows:

Date : **17 April 2003 (Thu)**
Time : 9:00 am
Venue : To be disclosed on 15 April 2003

Those who wish to conduct presentations have to adhere strictly to a 3-slide presentation. All attendees are required to register by email to cfc@ida.gov.sg. Registration is open from 3 April to 14 April 2003. Please include the following information in the email registration:

Email Subject Title

“SAPT CFC Networking (with / without presentation)”

Email Body

1. Company
 - a. Name
 - b. Website Address
 - c. Type (user company, technology or content provider)
2. Presenter/Guest
 - a. Name
 - b. Designation
 - c. Email Address
 - d. Fax Number
 - e. Direct Line/Company Number
 - f. Mobile Number (Optional)
3. Three sentences (text only) describing the company, core expertise and partners required (Optional)
4. Softcopy (in Microsoft PowerPoint format) of the 3-slide presentation if your company is interested in making a presentation:
 - a. Slide 1: Company background
 - b. Slide 2: Core expertise / Key strengths
 - c. Slide 3: Potential complementary companies sought
5. Indication of whether your company would like to book exhibition space, and what you would like to exhibit.

Presenters and exhibitors selected will be notified via email by Tuesday 15 April 2003.

6.4 Evaluation Process

All proposals will be reviewed and assessed by an Evaluation Committee nominated by IDA. It is essential that each submitted proposal contains sufficient technical details and is written in good and concise English.

In assessing the proposal, the following criteria will generally be considered:

- The ability to comply with project requirements as outlined in section 4 and pre-requisites as outlined in section 5.2;
- The extent of collaboration across the travel industry;
- Whether applications work across multiple operators;
- The feasibility of the business model and commercialisation potential;
- The security level of the system;
- The level of technical innovation;
- The application's ease of use; and
- The application's value to its users.

6.5 Selection of Projects

Only complete proposals will be considered. Short-listed applicants will be required to make a presentation and answer questions on the project by the Evaluation Committee.

6.6 Award of Project

IDA reserves the right not to award any project or to award multiple projects under the CFC. Successful applicants will be notified by IDA, and the terms of the project, milestones and co-funding terms will be negotiated and agreed upon between the parties prior to award of the project.

6.7 Confidentiality

By submitting a project proposal, the participant undertakes not to divulge or communicate to any third party any confidential information howsoever acquired in relation to or arising from the project and/or the CFC without first having obtained the written consent of the IDA.

For the purposes of the CFC, all information furnished by the IDA shall be deemed confidential unless otherwise indicated.

These obligations of confidentiality does not apply to information that:

- a) is or becomes publicly available without breach of confidentiality; or
- b) is released for disclosure with the written consent of the IDA.

6.8 Disclaimer

IDA shall have the absolute discretion to accept or reject any submission made without being liable to give any reason thereof. IDA reserves the right to retain the proposals submitted by all applicants without liability for the costs of such documents and/or their submissions.

7.0 SUBMISSIONS

7.1 Format of Submissions

Details on the format and information to be included in the CFC proposal are available on IDA's website (www.ida.gov.sg > Key Programmes > Calls for Collaboration > Smart Airport & Passenger Travel). All the information in the format outlined must be furnished accordingly.

7.2 Place and Time of Submissions

One hardcopy AND one softcopy (CD-ROM) should reach IDA no later than **18 July 2003 at 10:00 am**. All proposals shall be clearly marked as **“Smart Airport and Passenger Travel Call for Collaboration”**, **Reference Number: IDA (CFC)-008** and addressed to:

Tender Box Number: 1
Infocomm Development Authority of Singapore
8 Temasek Boulevard
#14-00 Suntec Tower 3
Singapore 038988

Late submissions will not be entertained.

7.3 Contact Details

All questions regarding this CFC should be addressed to

Ms. Sin Wun Yi
Assistant Manager
Wireless Mobility Development
Infocomm Development Authority of Singapore
DID: (65) 6211 0462
Fax : (65) 6211 2213
E-mail: Sin_Wun_Yi@ida.gov.sg

No questions regarding this CFC will be entertained after **17 July 2003**.

8.0 UPDATES TO DOCUMENT

This document will be made available for download at the IDA website (URL: <http://www.ida.gov.sg> under the section Key Programmes > Calls For Collaboration > Smart Airport and Passenger Travel).

IDA reserves the right to make changes and clarifications to the scope and requirements outlined in this document as and when such changes are deemed necessary and appropriate. Participants in this CFC should periodically check the IDA website for future updates to this document prior to submission of proposals. Updates will be made available for download as addendums to the initial document.

ANNEX A**ROLE OF THE CIVIL AVIATION AUTHORITY OF SINGAPORE
FOR THE PURPOSES OF THIS CALL FOR COLLABORATION****A. INTRODUCTION**

CAAS may assume the role of:

- A facilitator in terms of providing the necessary airport access for awarded consortia, as well as non-sensitive information pertaining to airport operations
- A participant as a potential user of applications that pertain to their operations at Changi Airport and that fall under the scope of this CFC

B. PROVISION OF INFORMATION

In addition to providing the contact information of airport tenants and agencies to participating consortia, CAAS is prepared to provide the following information to facilitate the development and implementation of awarded CFC projects:

- Flight information data
- Airport layout

Companies may contact CAAS for advice if they require information not included in the above list.

C. COLLABORATIVE OPPORTUNITIES

Subject to acceptance by CAAS, CFC participants are free to suggest projects to CAAS whereby CAAS may be a potential user of the services proposed under the project. Some scenarios for collaboration are provided below, which are merely illustrations and are by no means comprehensive.

- Scenario 1: Trolley Management System
(Category: Passenger Related & Security Operations)

A system capable of sending an alert wirelessly to trolley supervisors when it detects trolley parking bays are below a set threshold of trolleys. This will ensure that there will always be a sufficient supply of trolleys to meet passengers' demand.

- Scenario 2: Flight Information Distribution
(Category: Passenger Related & Security Operations)

Various end-devices can interact with the flight information system so that departing passengers can be alerted for gate changes or commencement of boarding. Similarly, transfer passengers can be alerted on the location and time that they can go to obtain boarding passes for their departing flight.

- Scenario 3: Interactive Content System
(Category: Retail and Entertainment)

End-devices are able to interact with the airport's plasma screens to pull information from the screens to their devices wirelessly. Useful information can be on current shopping promotions, events or even location of facilities and services.

D. CONTACT INFORMATION

Mr. Alvin Gay
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Airport Systems
Email: Alvin_Gay@caas.gov.sg
DID: (65) 6541 2672

Ms. Elizabeth Lee
Senior Airport Manager
Airport Systems
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ANNEX B**ROLE OF THE IMMIGRATION & CHECKPOINTS AUTHORITY
FOR THE PURPOSES OF THIS CALL FOR COLLABORATION****A. INTRODUCTION**

ICA may assume the role of:

- A facilitator in terms of providing system compatibility checks as well as non-sensitive information pertaining to immigration clearance at Changi Airport
- A participant as a potential user of applications that pertain to their operations at Changi Airport and that fall under the scope of this CFC

B. PROVISION OF INFORMATION

ICA is prepared to provide the following information to facilitate the development and implementation of awarded CFC projects:

- User Requirements for immigration clearance operations
- Technical Requirement for immigration clearance systems

Such information will be provided on a need-to-know basis, subject to ICA's approval and security clearance of the requesting consortia. Companies may contact ICA for advice if they require information not included in the above list.

C. COLLABORATIVE OPPORTUNITIES

Subject to acceptance by ICA, CFC participants are free to suggest projects to ICA whereby ICA may be a potential user of the services proposed under the project. Some scenarios for collaboration are provided below, which are merely illustrations and are by no means comprehensive.

- Scenario 1: Mobile Access to Intranet Applications
(Category: Passenger Related & Security Operations)

Immigration officers equipped with wireless PDAs / Tablet PCs will be able to access Intranet applications in a secured manner.

D. CONTACT INFORMATION

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Mrs. Lim-Tan Hui Kheng
Head
Computer Systems Section
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ANNEX C**ROLE OF THE SINGAPORE POLICE FORCE
FOR THE PURPOSES OF THIS CALL FOR COLLABORATION****A. INTRODUCTION**

SPF may assume the role of:

- A facilitator in terms of providing system compatibility checks as well as non-sensitive information pertaining to airport security
- A participant as a potential user of applications that pertain to their operations at Changi Airport and that fall under the scope of this CFC

B. COLLABORATIVE OPPORTUNITIES

Subject to acceptance by SPF, CFC participants are free to suggest projects to SPF whereby SPF may be a potential user of the services proposed under the project. Some scenarios for collaboration are provided below, which are merely illustrations and are by no means comprehensive.

- Scenario 1: Mobile Screening
(Category: Passenger Related & Security Operations)

Security personnel equipped with wireless PDAs/Tablet PCs will be able to check on passengers with suspicious behaviours and screen the validity of their passes/tickets (whether they have been reported stolen/cancelled). This can also be used to help lost passengers by providing much needed information with a simple scan of their pass/ticket.

- Scenario 2: Enhanced Security Coverage
(Category: Passenger Related & Security Operations)

Locations of security interest within the airport compound can be captured and monitored through wireless means, eg wireless intrusion detection sensors at the perimeter fencing, wireless CCTV deployment, etc. This will allow incidents such as an intrusion into a secured area to be detected immediately and allow for better co-ordination of response forces. Security personnel will be equipped with wireless display devices that will show them the exact location of the incident on a digital map. Video images from the CCTV system can also be streamed live to these devices to enable security personnel to decide quickly if further investigation is needed.

C. CONTACT INFORMATION

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