



*IDA (CFC) – GSP*

**GRID SERVICES PROVISIONING  
CALL-FOR-COLLABORATION**

*(Public Document)*

*23 November 2007*

**TABLE OF CONTENTS**

1. INTRODUCTION.....	3
2. OBJECTIVES .....	3
3. SCOPE .....	4
4. SPECIFICATIONS .....	4
5. UTILITY ARCHITECTURE .....	7
6. BUSINESS PLAN.....	7
7. PREREQUISITES FOR PARTICIPANTS .....	8
8. SCHEDULE AND MILESTONES .....	8
9. SELECTION PROCESS AND AWARD .....	10
10. PROPOSAL SUBMISSION INSTRUCTIONS AND DATE .....	11
ANNEX A – TERMS & CONDITIONS FOR CFC.....	12

## 1. INTRODUCTION

- 1.1 The Info-communications Development Authority of Singapore (“IDA”) is issuing the Grid Services Provisioning Call-For-Collaboration (“CFC”) to invite interested Operators and Service Providers (“Participants”) to submit proposals (“Proposals”) for the provisioning of software, compute and storage utility (“Utility”) in Singapore.
- 1.2 As part of the Intelligent Nation 2015 (iN2015) ICT Master Plan, the IDA intends to develop an infocomm resources marketplace (IRM) in Singapore by accelerating the deployment of infrastructure and catalyzing the demand for software, compute and storage utility provisioning.
- 1.3 A major component of the IRM is the industry Participants that provision compute and storage utility using grid as an underlying architecture, on a utility pricing model.
- 1.4 While the Participants will provide the hard infrastructure, that in itself is inadequate for the success of the IRM. Large scale adoption will require a wide variety of applications and services to aid users in their operations. The existence of an ecosystem of ISVs and partners associated with each Participant will be essential. Such ISVs will provide ‘Software as a Service’ (SaaS) riding on the compute and storage utility provided by the Participants, on a utility pricing model.
- 1.5 In addition, Singapore will need intermediaries to provide value-added services to business and industry users.
- 1.6 A co-funding model is being adopted, where Government as a user will subscribe to a base load of a committed annual purchase from the successful Participants for a specific number of years. This base load will be re-allocated by the Government for its internal use as well as intended policy purposes, such as seed funding for industry projects or proof-of-concepts for new industry sectors.

## 2. OBJECTIVES

- 2.1 To realize the many benefits of software, compute and storage utility provisioning, IDA is launching the Grid Services Provisioning CFC. The objectives of this CFC are to:
  - a. Develop the ISV Ecosystems that will enable “Software as a Service” applications to flourish, and establish Singapore as the “Shared Services Hub” of Asia.
  - b. Accelerate the deployment of software, compute and storage utility provisioning by making available software, compute and storage resources to users in the public and private sectors on a utility basis.
  - c. Catalyse the demand for software, compute and storage utility provisioning by increasing the number of users in the public and private sectors.

### 3. SCOPE

3.1 The CFC invites Participants to submit Proposals to any of the following categories. Participants are welcome to submit Proposals to more than one category. Each proposal should include an ISV ecosystem.

3.2 The categories are:

a. Compute Grids

These are compute services which could range from compute on demand, such as a “public grid”, to more traditional forms of contractual agreements for providing compute services, such as the provisioning of enterprise grids. Some other examples include “Public Enterprise Grids” where companies which have set up internal enterprise grids may make these resources available for public usage, or “PC (Spare Cycle) Grids” where companies who link up personal computers over the Internet to run compute-intensive applications can provide their services.

b. Storage Grids

Storage services involve provisioning of storages of various availability and accessibility, possibly with the intelligence to vary storage types according to their needs.

3.3 Participants are also encouraged to clearly identify other categories deemed commercially viable and submit these as part of their Proposals for consideration.

3.4 The Government as a user may choose to subscribe to a base load of compute and storage utility, up to a maximum amount of 40% of the provisioning provided by each Participant.

3.5 Participants are required to target the remaining compute and storage resources provisioned for use by the private sector.

3.6 Proposals submitted shall address the provisioning to users in both the public and private sectors.

3.7 Proposals submitted shall be based on the specifications in Section 4 of this document.

### 4. SPECIFICATIONS

4.1 Operating Model

4.1.1. The Utility shall be based in Singapore.

4.1.2. The Utility shall make use of standards-based technologies to support Internet connectivity.

4.1.3. The Utility shall operate twenty-four (24) hours a day, seven (7) days a week.

- 4.1.4. For compute grids, the Utility shall support the execution of applications on a variety of platforms, for example (but not limited to) Windows, Linux, Unix, (such as AIX, HP UX, and Solaris). Such a capability can be realized on a native platform or achieved through virtualization.
- 4.1.5. For storage grids, the Utility shall provide storage services:
  - a. Ranging from high availability to archival grade.
  - b. Spanning from a short-term through mid-term to long-term basis.
- 4.1.6. Zero, one or more participants may be awarded, depending on the quality of the Proposals received.
- 4.1.7. In order to quickly stimulate the demand for compute and storage utility provisioning, the Participant shall offer a basic tier service ("Basic Services") at the lowest possible cost to encourage take-up in the first year. These Basic Services shall be offered without any conditions that the user subscribes to other services offered by the Participant.
- 4.1.8. Basic Services shall be made available for a minimum of three (3) years from the commencement of commercial services.
- 4.1.9. Customer support for the Basic Service shall, at the minimum, be provided to resolve issues related to Utility connectivity problems and service interruption/degradation.
- 4.1.10. In order to develop a sustainable market for compute and storage utility, the Participant shall offer paid premium tier services ("Premium Services"). The different tier services could be differentiated through differing levels of Quality of Service, provisioning of helpdesk or user support services.
- 4.1.11. For academic users, the Participant shall offer an academic tier service ("Academic Services"). This tier would take into account academic discounts for services offered.
- 4.1.12. The Participant shall register each Utility user and keep proper records of the number of users accessing all services (Academic, Basic and Premium Services).
- 4.1.13. The Participant shall provide quarterly utilization figures to IDA including number of users accessing all services (Academic, Basic and Premium Services), number of ISV partnerships, level of utilization, amount of compute / storage resources and applications available.
- 4.1.14. The Participant shall ensure that its offering will inter-operate with the Grid Market Hub, which would be established by the IDA in due course. The Grid Market Hub is a mechanism that seeks to act as an exchange between different service providers and the users. All suppliers and buyers of Grid services will connect to it for the sale and purchase of compute and storage services in the future.

## 4.2 ISV Ecosystem

- 4.2.1. Participants shall submit the list of ISVs that are already working with them, and a time line on when other ISVs would come on board over the next 3 years.
- 4.2.2. Participants shall ensure that their hardware capabilities meet minimum performance requirements for the ISVs to provide their services.
- 4.2.3. ISVs shall provide software licenses on a utility pricing model.
- 4.2.4. An ISV may enter into arrangements with different consortia to provide SaaS services.
- 4.2.5. For SaaS provisioning, the ISV shall provide helpdesk or customer support services.

## 4.3 Usage and Access

- 4.3.1. The Utility shall technically support and allow users open access to services such as, but not limited to,
  - a. Compute;
  - b. Storage; and
  - c. Applications from ISVs.
- 4.3.2. The Utility shall support the logical segmentation of users into different domains, including the ability to define and manage different profiles for authentication, encryption and other service characteristics based on the requirements of different user groups.
- 4.3.3. Each Participant that has been awarded under the CFC ("Awarded Participant") shall establish service agreements and usage policies for all services (Academic, Basic and Premium Services).
- 4.3.4. Participants shall provide the list of users that have agreed to use their Utility over the next 3 years.

## 4.4 Reliability, Security, Availability & Energy Efficiency

- 4.4.1. The Utility shall support fault tolerance mechanisms to mitigate or eliminate single points of failure and ensure reliability of at least 99.9%. The Participant shall provide details on how this shall be achieved.
- 4.4.2. The Utility shall be quickly and easily scaled and upgraded to support additional users, new applications and new requirements. The Participant shall provide details on how this shall be achieved.
- 4.4.3. The Participant shall provide measures to ensure the security measures for all Utility equipment. The Participant shall provide details on these measures.

- 4.4.4. The Participant shall provide mechanisms to prevent or mitigate the risk of hackers, spammers and other forms of malicious attacks on the Utility. The Participant shall provide details on these mechanisms.
- 4.4.5. The Participant shall provide measures to ensure security of application, end user data, e.g. data privacy.
- 4.4.6. The Participant shall specify the tier of functionality appropriate or required to support site availability objectives. The Participant shall indicate the certified tier-level and certification authority.
- 4.4.7. The Participant shall provide energy-efficient measures to address power and cooling challenges.

## **5. UTILITY ARCHITECTURE**

- 5.1 The Participant shall provide a technical architecture of how the Utility will be deployed.
- 5.2 The Participant shall provide details on how a user will gain access and tap on the Utility provisioned. The Participant shall also provide details on how a user will tap on the Utility in a spillover usage model.
- 5.3 The Participant shall provide details on how it will provision a flexible license management model to offer users the usage of the SaaS in a cost effective manner.

## **6. BUSINESS PLAN**

- 6.1 The Participants shall provide a three (3) year business plan for the operation of the Utility. The business plan shall include:
  - a. the types of services (Academic, Basic and Premium Services) that will be offered including details on pricing, the scenarios under which the services are likely or intended to be used and the payment methods available for users to pay for services;
  - b. the plans to attract users to Premium Services;
  - c. the plans to migrate users to Premium Services;
  - d. the plans on how to recruit ISVs;
  - e. any technology, content or service partners that the Participant intends to collaborate with, the roles of the various parties and any cost and revenue sharing models;
  - f. the expected number of private sector users, including small and medium-sized enterprises (SMEs), using the Utility on a quarterly basis;
  - g. the detailed project schedule for the rollout of the Utility; and
  - h. the financial projections for the operation of the Utility.
- 6.2 The Participant shall provide a vision of the IRM beyond the initial 3 years.

## 7. PRE-REQUISITES FOR PARTICIPANTS

- 7.1 A Participant shall be a company (or consortium) that is incorporated in Singapore.
- 7.2 The Participant shall have the necessary relevant licenses required to operate the Utility at the time of deployment.
- 7.3 The Participant shall have to comply with any relevant conditions, rules, regulations required by the appropriate governing bodies for the installation of any equipment on any premises.
- 7.4 The Participant shall provide references of similar projects that have been previously undertaken (e.g. positive track record, provision site visits and reference checks).

## 8. SCHEDULE AND MILESTONES

- 8.1 The milestones of the CFC are given in the following table:

DATE	EVENT
23 November 2007 (Friday)	Announcement of CFC
28 November 2007 (Wednesday)	Last Day of Registration for Public Briefing
30 November 2007 (Friday)	Public Briefing
03 December 2007 (Monday)	Last Day of Registration for Networking Session
05 December 2007 (Wednesday)	Networking Session
01 February 2008 (Friday)	Last Day for Enquiries
04 February 2008 (Monday)	Proposal Submission Date
February to May 2008	Shortlisting & Evaluation
May 2008	Award of Projects
September 2008	Launch of Commercial Services
September - December 2008	Completion of Deployment
April 2011	Completion of CFC

Table 1. CFC Timeline and Milestones

### 8.2 Public Briefing

All interested companies are invited to attend the CFC Public Briefing. This briefing will be conducted by the IDA, and will cover details of the conduct and objective of the CFC, including the events leading to the final award of the project, and expectations of the proposals.

Details of the Public Briefing are as follows:

Date: 30 November 2007 (Friday)  
 Time: 0900 – 1200 hours  
 Venue: Meeting Room 203  
 Suntec Singapore International Convention & Exhibition Centre  
 1 Raffles Boulevard, Level 2, Suntec City  
 Singapore 039593

All parties interested to attend the public briefing are to register by email to [IDA\\_Grid@ida.gov.sg](mailto:IDA_Grid@ida.gov.sg) by 28 November 2007 (Wednesday). Please include the following information in your registration:

<p><u>Email Subject Title</u> "Grid Services Provisioning CFC - Public Briefing"</p> <p><u>Email Body</u> Attendee's 1. Name 2. Designation 3. Department 4. Organisation 5. Telephone Number 6. Email Address</p>
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Format 1. Registration Form for Public Briefing Session

### 8.3 Networking Session

All companies interested to submit proposals are invited to participate in the Networking Session. The session will provide opportunities for these companies to make presentations and to identify partners for collaboration. Each company will be allowed to present 3 slides on the following topics:

- Introduction of the Company
- What It Contributes to the CFC
- What Partnership It Seeks

Details of the Networking Session are as follows:

Date: 5 December 2007 (Wednesday)  
Time: 0900 – 1200 hours, 1300 – 1730 hours (if necessary)  
Venue: Infocomm Development Authority of Singapore  
8 Temasek Boulevard  
#14-00 Suntec Tower 3  
Singapore 038988

All parties interested to participate in the Networking Session are to register by email to [IDA\\_Grid@ida.gov.sg](mailto:IDA_Grid@ida.gov.sg) by 3 December 2007 (Monday). Please include the following information in your registration:

<p><u>Email Subject Title</u> "Grid Services Provisioning CFC – Networking Session"</p> <p><u>Email Body</u></p> <ol style="list-style-type: none"><li>1. Organisation</li><li>2. Intended Participation: Resource Provider / Service Provider / SaaS Provider *</li><li>3. Name of Main Contact</li><li>4. Designation of Main Contact</li><li>5. Telephone Number of Main Contact</li><li>6. Email Address of Main Contact</li><li>7. Name of Rep1</li><li>8. Designation of Rep 1:</li><li>9. Name of Rep 2:</li><li>10. Designation of Rep 2.</li></ol> <p>* please delete accordingly</p>
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Format 2. Registration Form for Networking Session

## 9. SELECTION PROCESS AND AWARD

- 9.1 An Evaluation Committee will evaluate the submitted Proposals and decide which Participants to support based on the merit of their Proposals.
- 9.2 In assessing the Proposals, the Evaluation Committee will use the following criteria:
- a. Qualification of the Participant to complete the Project;
  - b. Compliance to the Specifications listed in Section 4 of this document;
  - c. Quality and size of Compute and Storage services being provisioned;
  - d. Quality and size of ISV ecosystem associated with the Participant;
  - e. Number of SaaS;
  - f. Number of local applications using the Utility;
  - g. Involvement of local partners;
  - h. Commitment to GMH;
  - i. Commitment and focus towards SME sector;
  - j. Number of users; and
  - k. Base-load support required by the Participant.
- 9.3 IDA reserves the right to award one or more Participants to provision the compute and storage utility. Depending on the quality of the Proposals, IDA reserves the right not to award any Participant.
- 9.4 Short-listed Participants will be required to make a presentation to the Evaluation Committee and answer questions on their Proposals posed by the Evaluation Committee.

- 9.5 Selected Participants will be notified privately by IDA, and the terms of the project, including milestones and funding, will be negotiated and agreed upon among the parties prior to the award of the CFC.
- 9.6 If awarded, the Participant shall receive a commitment to an agreed base load subscription to the compute and storage utility provisioned.

**10. PROPOSAL SUBMISSION INSTRUCTIONS AND DATE**

- 10.1 Submissions shall be based on the Grid Services Provisioning Call-For-Collaboration (Proposal Template) dated 23 November 2007 that can be found on the IDA website ([www.ida.gov.sg](http://www.ida.gov.sg)) under *Infrastructure > Grid > Grid Services Provisioning Call-For-Collaboration*.
- 10.2 The terms and conditions set out in the document Annex A of Grid Services Provisioning Call-For-Collaboration (Public Document) dated 23 November 2007 will apply to all proposals submitted in relation to this CFC.
- 10.3 Only complete Proposals will be considered.
- 10.4 Four (4) hardcopies and one (1) softcopy (on CD-ROM) of the Participant's Proposal must reach IDA no later than 1700 hrs on 4 February 2008 (Monday).
- 10.5 All proposals must be clearly marked as  
  
"Grid Services Provisioning Call-For-Collaboration  
Reference Number: IDA (CFC)-GSP"  
  
and addressed to:  
  
Infocomm Development Authority of Singapore  
8 Temasek Boulevard  
#14-00 Suntec Tower 3  
Singapore 038988
- 10.6 Late submissions will not be entertained
- 10.7 Proposals may also be submitted in person at the IDA reception desk on the 14th floor of Suntec Tower 3.
- 10.8 Enquiries regarding this CFC should be addressed to [IDA\\_Grid@ida.gov.sg](mailto:IDA_Grid@ida.gov.sg).
- 10.9 No enquiries regarding this CFC will be entertained after 1730 hrs on 1 February 2008 (Friday)

## ANNEX A – TERMS AND CONDITIONS FOR GRID SERVICES PROVISIONING CALL-FOR-COLLABORATION

The following terms and conditions shall apply to companies submitting Proposals in response to Grid Services Provisioning Call-For-Collaboration.

### 1. Interpretation

The following words and expressions shall have the meanings hereby assigned to them except where the context otherwise requires:

“**Call-For-Collaboration**” or “**CFC**” shall mean the invitation issued to companies (or industry partners) by IDA on 23 November 2007 to provision software, compute and/or storage utility in Singapore.

“**CFC Public Document**” shall mean the public document of the Grid Services Provisioning public document dated 23 November 2007 available at IDA’s website.

“**Collaboration**” shall mean the partnering of different companies (or industry partners) to form the consortium required by this CFC.

“**Participant**” or “**Member**” shall mean the company (or industry partner) that has submitted a Proposal.

“**Consortium**” refers to the group of Participants that have agreed to jointly respond to the Call-For-Collaboration.

“**IP**” shall mean intellectual property, including but not limited to patents, copyright, industrial design and integrated circuit topography.

“**IDA**” shall mean the Info-communications Development Authority of Singapore, a statutory board created pursuant to the Info-communications Development Authority of Singapore Act (Chapter 137A) of the laws of the Republic of Singapore with its principal office at 8 Temasek Boulevard, #14-00 Suntec Tower 3, Singapore 038988.

“**Private Sector users**” shall mean all users in business and industry.

“**Proposal**” shall mean any and all documents and information submitted by the Participant in response to the Call-For-Collaboration.

“**Project**” shall mean the provisioning of software, compute and/or storage utility in Singapore, as described in the Call-For-Collaboration.

“**Public Sector users**” shall mean all users in government agencies of Singapore (listed in SINGOV website <http://www.gov.sg>), research institutes and institutes of higher learning i.e. universities and polytechnics.

“**Utility**” shall mean the provisioning of software, compute and storage utility in Singapore.

Words importing the singular shall also include the plural and vice versa where the content requires.

**2. Completeness of Proposal**

The Participant shall use its best efforts to ensure that the information as represented in the Proposal is true, accurate and complete at the time of its submission.

**3. Documentation**

IDA reserves the right to retain the Proposal submitted by the Participant without being liable for the costs of the Proposal, notwithstanding the fact that the Proposal is not accepted at the end of the evaluation.

**4. Organisation Background and Business Experiences**

The Proposal shall contain information about all Participant's capital resources, manpower resources, assets, production capacity which information shall be submitted as part of the Proposal to enable IDA to ascertain the Participants' capacity to fulfill the Proposal.

**5. Additional information**

Notwithstanding the provisions in clause 2, from time to time, the Participant may be requested by IDA to submit additional information with respect to the Proposal, including but not limited to the Project. If so requested, Participant shall use its best efforts to submit the information in a timely manner. Any additional information submitted will be deemed to form part of the Proposal. The Participant shall use its best efforts to ensure that all additional information submitted is true, accurate and complete at the time of submission.

**6. Canvassing**

The Participant shall not engage in any form of canvassing and in the event that any canvassing is being discovered after the Proposal has been accepted, IDA shall be entitled to rescind its acceptance of the Proposal.

**7. Confidentiality**

The Participant undertakes not to divulge or communicate to any third party any confidential information howsoever acquired in relation to or arising from this CFC without first having obtained the prior written consent of IDA.

For the purpose of this CFC, all information furnished by IDA whether jointly or individually, shall be deemed confidential unless otherwise indicated.

These obligations of confidentiality do 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 IDA.

**8. Ownership of Intellectual Property**

Unless otherwise agreed to in writing, all IP in any documents relating to the CFC and provided by IDA shall remain vested in IDA.

The ownership of any IP to be subsequently used or created in relation to the Project shall be subject to the terms and conditions of a separate written agreement between the relevant Participants, on the one hand, and IDA, on the other hand.

**9. Demonstration of claimed capabilities**

The Participant shall, at the request of IDA, conduct such demonstrations and presentations to substantiate the claims in the Proposal to IDA's reasonable satisfaction. The costs and expenses arising from or in connection with any such demonstrations and/or presentations shall be borne solely by the Participant.

**10. Agreement**

In the event the Participant is selected for the CFC, the Participant shall be required to enter into a legally binding agreement with IDA, the terms and conditions of which shall be negotiated and decided between the parties at a later date.

**11. Disclaimer**

IDA shall have the absolute discretion to accept or reject the Proposal without being liable to give any reason thereof.

The Participant acknowledges and agrees that itself and all its associated persons, bodies and organisations who participate in the Project and/or the CFC, whether directly or indirectly, do not do so as the servants or agents of IDA, and IDA shall not be responsible for any acts or omissions of them or any of them. The Participant hereby releases IDA, its servants and agents from all liability for personal injury or loss of or damage to property or any loss or damage of any other kind whatsoever which the Participant may sustain by reason of any act or omission of the Participant and its servants and agents or of such persons, bodies and organisations aforesaid their servants and agents.

**12. Limitation of Liability and Indemnity**

IDA shall not have any liability to the Participant for any cost or loss whatsoever (including loss of profit, savings, business contracts, or revenues, and all other forms of actual, direct, special, incidental, or consequential loss or damage) arising from or related to the need for Participants to work together seamlessly to respond to or provide the service required in this CFC.

IDA shall not have any liability to the Participant for any loss or damage whatsoever (including loss of profit, savings, business contracts, or revenues, and all other forms of actual, direct, special, incidental, or consequential loss or damage) arising from or related to:

- a. the Participant's Proposal (or any part thereof); or
- b. the Participant's failure to participate in or to be selected for the Project for any reason whatsoever.

The Participant shall further indemnify, keep indemnified and hold IDA, and its officers, directors, and employees, harmless against any loss, damage, costs, expenses, or liability directly or indirectly arising out of or relating to any claim based on:

- a. the Participant's Proposal (or any part thereof) and/or IDA's use or possession thereof, including but not limited to any claim that the Participant's Proposal infringes any IP; or
- b. the Participant's failure to participate in or to be selected for the Project for any reason whatsoever.

- End of Document -