

**REQUEST FOR PROPOSAL (RFP) FOR SPECTRUM  
RESEARCH COLLABORATION PROGRAM WITH  
INSTITUTIONS OF HIGHER LEARNING 2007**

**TENDER NO:  
SKMM/RPD/SRPD(2)/SRCP/TC/03/07(7)**

**20 APRIL 2007**

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# **REQUEST FOR PROPOSAL (RFP) FOR SPECTRUM RESEARCH COLLABORATION PROGRAM WITH INSTITUTIONS OF HIGHER LEARNING 2007**

## **SECTION 1 : INTRODUCTION**

### **1. PURPOSE**

- 1.1 The purpose of this RFP is to invite eligible person(s) to submit research proposal(s) on the research focus areas and theme(s) as stated in the "Guide to Spectrum Research Collaboration Program with Institutions of Higher Learning 2007" (hereinafter referred as 'SRCP guide').

### **2. DEFINITION**

- 2.1 In this RFP unless the context requires otherwise, the following terms shall have the following meanings:
- 2.1.1 "Act" shall mean the Communications and Multimedia Act 1998;
- 2.1.2 "Research" shall mean performing the research activity based on the SRCP guide, the scope of RFP specified in section 2 and the terms and conditions of this RFP;
- 2.1.3 "Lead partner" shall mean the IHL that is leading the research;
- 2.1.4 "MCMC" shall mean Malaysian Communications and Multimedia Commission;
- 2.1.5 "Eligible person" are public and private IHLs.

### **3. BACKGROUND**

- 3.1 Collaboration work between MCMC and the Institutions of Higher Learning (IHL) in spectrum related matters will occupy a unique role in developing and strengthening the capacity to generate advance level administrative, regulatory and technical expertise to address the issues on spectrum arising from the rapid advancement of wireless communications in the communication and multimedia industry.
- 3.2 Under this collaboration framework, a Spectrum Research Collaboration Program (SRCP) was formulated to facilitate the collaboration process and to promote research on spectrum related matters.

4. **OBJECTIVES OF THE SPECTRUM RESEARCH COLLABORATION PROGRAM (SRCP)**

4.1 The objectives of the strategic review are to:

4.1.1 Serve as a focal point for information, knowledge development and research and development related to spectrum matters;

4.1.2 Develop our knowledge resources in the management of spectrum; and

4.1.3 Provide platform for collaboration, sharing and exchange of knowledge and expertise.

## **SECTION 2: SCOPE OF RFP**

### **5. SCOPE OF RFP**

The scopes of RFP for the research are as follows:

- 5.1 The Proposer shall perform a complete research study based on the chosen research theme/area.
- 5.2 The Proposer shall use the application form in Appendix B for each chosen theme/area.
- 5.3 Proposer may submit proposals on any of the 3 key focus areas and/or the five identified themes (Appendix C).
- 5.4 The Proposer shall propose in detail the methodology/approach on how the research should be accomplished on the chosen research themes/areas.
- 5.5 The Proposer shall specify clearly in the proposal the Lead Partner and their collaborative partners. CVs of all the collaborative partners are required to be submitted together with the proposal.
- 5.6 The Proposer shall provide Gantt chart showing activities and expected deliverables and the milestones to achieve the research outcome. The categories of project duration are detailed in the SRCP guide.
- 5.7 The Proposer shall elaborate the technology and funding risk in performing the research project.
- 5.8 The Proposer shall propose the ownership and management of the Intellectual Property Rights (IPR) that may arise from the research outcome.
- 5.9 The Proposer shall furnish in its proposal on the quantum and schedule of disbursement of financial support needed for the accomplishment of the research project. Further, the Proposer shall include (if any) other type of support needed (i.e. Technical experts or seminar/workshop) for the research project.

### **6. WORK PROGRAM**

- 6.1 The table below outlines the proposed work program to be undertaken and the timescales for implementation.

No	Process	Date
1.	The Commission issues Request For Proposal (RFP)	20 April 2007

2.	Close of submission for application	12 noon, 1 June 2007
3.	RFP opening and evaluation process	1 June – 27 July 2007
4.	Notification of results	14 August 2007
5.	Project commencement	27 August 2007

**7. EQUIPMENT**

7.1 To refer to SRCP guide.

**8. REPORTS AND PRESENTATIONS**

8.1 To refer to SRCP guide.

## **SECTION 3 : TERMS AND CONDITIONS OF RFP**

### **9. TERMS AND CONDITIONS OF RFP**

- 9.1 This RFP is subject to the following terms and conditions:
- 9.1.1 The MCMC may engage a Proposer to provide Research covering the whole or any part of the scope of the RFP;
  - 9.1.2 The MCMC shall not be liable for any cost incurred, or work done, in relation to the RFP and any proposal submitted to the MCMC;
  - 9.1.3 The RFP document is not to be construed as a legal document, does not constitute an offer by the MCMC and has no legal effect whatsoever;
  - 9.1.4 The receipt of the Proposal by the MCMC or any clarification session held, if deemed necessary, should not give rise to any expectation whatsoever on the part of the Proposer that they will be engaged.
  - 9.1.5 The MCMC will inform all participating Proposers on the outcome of this RFP.

### **10. PRICE QUOTATIONS**

- 10.1 All the offer prices shall be **TYPE WRITTEN** and every page shall be signed by the Proposer. All erasures, amendments and deletions must be initialled.
- 10.2 The Proposer's offer price shall be in **Ringgit Malaysia [amount in words] (RM [amount in figures])** and shall be valid for a period of **six (6)** months.
- 10.3 The Proposer's offer price shall include any duties or taxes imposed by the Government of Malaysia and all anticipated disbursement (please give details).
- 10.4 The successful Proposer need not be the one who quoted the LOWEST price. Evaluation of the proposal will be based on other matters such as the adherence to the scope of work, deliverables and timelines, financial, administrative and procedural requirements of the RFP, the Proposer's prior experience and track record etc.

### **11. OFFERS RECEIVED AFTER THE CLOSING DATE OF RFP**

- 11.1 RFP offers received after the stipulated closing date and time shall be invalidated. Proposer's proof of posting or other evidence of

transmission shall not be accepted as a proof of receipt by the MCMC.

## **12. ACCEPTANCE OF RFP**

- 12.1 The MCMC reserves the right to accept the whole RFP or such part or parts thereof as the MCMC may at its absolute discretion decide.
- 12.2 The MCMC shall not be bound to assign any reasons for the rejection of any offer.

## **13. DOCUMENTATION FEES**

- 13.1 The RFP documentation and SRCP guide are free of charge and downloadable from MCMC's website at [www.mcmc.gov.my](http://www.mcmc.gov.my).

## **14. OMMISSION AND ERRORS**

- 14.1 No oral, written, telecopied or otherwise transmitted information, modification or variation of the submission received after the RFP is closed will be considered.
- 14.2 The Proposer shall be solely responsible for all such omission and errors without any additional cost chargeable to the MCMC. The MCMC shall not entertain any request for variation of prices or submission of additional quotes for items left out in the original submission on the grounds of lack of knowledge, etc.

## **15. RFP CLARIFICATION**

- 15.1 Any clarification regarding a RFP will be uploaded on the MCMC's website and all queries and clarifications will be closed two (2) weeks before the closing date of this RFP i.e. on 18 May 2007 at 5.00 p.m.
- 15.2 Proposers are advised to study all terms and conditions very carefully and to make all necessary clarification, etc., before finalizing their offers for submission. Clarification can be sought from:
  - 15.2.1 **Puan Suzana Zainuddin** for general terms and conditions of RFP or;
  - 15.2.2 **Encik Ahmad Nasruddin 'Atiqullah Fakrullah** for Research matters.

by calling +603 8688 8000 or email to [tender@cmc.gov.my](mailto:tender@cmc.gov.my).

## **16. RFP SUBMISSION**

- 16.1 The Proposer in submitting the RFP must ensure that the Proposer's official company stamp and authorized signature appear on all pages of the original set of documents.
- 16.2 The Proposer shall submit his RFP in **ONE (1) ORIGINAL AND FOUR (4) COPIES OF THE RFP DOCUMENTS** and shall enclose them in a sealed envelope(s) marked with MCMC's RFP reference (as indicated in this RFP document) at the top of right hand corner of the envelope with the following description:

**" RFP FOR THE PROVISION OF SPECTRUM RESEARCH  
COLLABORATION PROGRAM WITH INSTITUTIONS OF HIGHER  
LEARNING 2007"**

- 16.2.1 In the event of discrepancies, the document marked **"ORIGINAL"** shall prevail.
- 16.3 All schedules or prices submitted by the Proposer must bear the official stamp and signature of the Proposer. Improper endorsement and/or unendorsed sheets may invalidate the Proposer's offer.
- 16.4 All submissions shall be in the English language.
- 16.5 All corrections, changes, alteration and/or and other amendments whatsoever shall be initialed by the Proposers' duly authorised officer and endorsed with the Proposers' official stamp.
- 16.6 All documents which form part of the Proposer's submission of RFP shall be properly and securely bound in one or more ring binders with durable covers and enclosed in well sealed package. If more than one such package is submitted, the package number and the total number of such package submitted shall be marked on the outside of each package in the following manner:

PACKAGE NO X/Y (Volume)

where X is the package number and Y is the total number of such packages submitted.

- 16.7 Proposer's submission shall be deposited in the Tender Box marked TENDER No. SKMM/RPD/SRPD(2)/SRCP/TC/03/07(07) which is provided on the Ground Floor of the office of the MCMC and addressed to:

**Chairman  
Malaysian Communications and Multimedia  
Commission  
Off Persiaran Multimedia  
63000 Cyberjaya  
Selangor Darul Ehsan  
Malaysia  
(Attn.: Secretary of Tender Committee)**

- 16.8 If the Proposer's submission consists of voluminous documents which are too bulky to be deposited into the Tender Box, the Proposer may submit these documents by hand to the Secretary of Tender Committee before the RFP closing time and date specified.
- 16.9 Handbooks and other literature shall be bound in separate covers. The covers shall be marked clearly with the title of the RFP on the cover sheets.
- 16.10 Failure on the part of the Proposer to comply with the requirements specified herein may invalidate the Proposer's offer.

**17. CLOSING DATE**

- 17.1 All RFPs shall be prepared in the manner prescribed and submitted at the place stipulated in clause 16.7 herein specified, on or **before 1 June 2007 at 12.00 noon.**
- 17.2 Late submission shall be rejected.

**18. RFP DEPOSIT**

- 18.1 There shall be no RFP deposit required for this RFP.

**19. TERMS OF PAYMENT**

- 19.1 All payments shall be made in Malaysian Ringgit (RM).
- 19.2 The payment schedule shall be agreed later and reflected in the Research Collaboration Contract. The Proposer shall provide its proposed payment schedule in the proposal for MCMC consideration.

**20. RETENTION SUM**

- 20.1 Not applicable.

**21. PERFORMANCE BOND**

- 21.1 There shall be no performance bond required for this RFP. However, in the event when the contract is abandoned/terminated prematurely, the balance of the disbursed fund shall be refunded to the MCMC.

**22. RESEARCH COLLABORATION CONTRACT**

- 22.1 The successful Proposer shall be required to enter into a formal Research Collaboration Contract with the MCMC incorporating the

terms and conditions of the RFP and all other relevant correspondence between the successful Proposer and the MCMC prior to the execution of the formal agreement. Such agreement shall be prepared by the MCMC.

### **23. INDUCEMENTS**

- 23.1 The Proposer, its agent and employees shall not under any circumstance offer or make any gift, payment, loan, reward, inducement or benefit to any of the directors, officers or employees of the MCMC.
- 23.2 In the event of any such gift, payment, loan, reward, inducement or benefit being discovered after the acceptance by the MCMC of the Proposer's offer, the MCMC shall have the right to rescind any acceptance of the offer or any Agreement made and the acceptance or Agreement shall have no further effect and the Proposer shall not have any claim against the MCMC in respect of any such acceptance or Agreement.

### **24. CONFLICT OF INTERESTS**

- 24.1 Disclosure of any commercial relationships or interests the Proposer or any of its directors, partners and officers may have with any of the Service Providers or any of the forums registered under the Act in the Malaysian communications and multimedia sector.

### **25. CONFIDENTIALITY**

- 25.1 Except with prior written consent of the MCMC, the Proposer shall not at any time communicate to any person or body or entity any confidential information disclosed for the purpose of the provision of the services or discovered in the course of the provision and performance of the services, nor shall the Proposer make public any information as to the recommendations, assessments and opinions formulated in the course of or as a result of the provision and performance of the services.

**APPENDIX A: Form of RFP**

TENDER No: SKMM/RPD/SRPD(2)/SRCP/TC/03/07(07)

The Chairman  
Malaysian Communications and Multimedia Commission  
63000 Cyberjaya,  
Selangor Darul Ehsan.

Sir,

**RFP FOR SPECTRUM RESEARCH COLLABORATION PROGRAM WITH INSTITUTIONS OF HIGHER LEARNING 2007**

Under and subject to the terms and condition of the RFP document requirements, the undersigned does hereby offers to provide the **RFP for SPECTRUM RESEARCH COLLABORATION PROGRAM WITH INSTITUTIONS OF HIGHER LEARNING 2007.**

- 2. The undersigned agrees to be bound and submit to the said Terms and Conditions of the RFP document and requirements and the Price quoted.
- 3. Whereas that it is understood that you reserve the right to accept or to refuse this offer, or the same, the undersigned agrees that this RFP shall remain valid and shall not be withdrawn within six (6) months from the closing date of the RFP.

Dated this ..... day of ..... 2007

.....

Signature of Proposer                      Witness

Name in Full:                                      Name in Full:

In the capacity of:                              Occupation:

.....

.....

Address:

Address:

.....  
.....

Duly authorized to sign this RFP document for and behalf of:

**APPENDIX B**

*APPLICATION FOR SPECTRUM RESEARCH COLLABORATION*

A APPLICANT DATA		
1.	Lead Institution Name	
2.	Address	
3.	Contact Person	
4.	Designation	
5.	Contact number	(Office) (Mobile)
6.	Fax	
7.	Email address	

B PROJECT DETAILS		
8.	Project Theme	
9.	Project statement <i>(Please attach proposal and supporting documents as requested)</i>	
10.	Lead partner - person and IHL (please provide CV)	
11.	Collaborative Partners (CV of all partners)	
12.	Research Methods	
13.	Commencement date Research period or duration and its End Date	
14.	Gantt chart showing activities and expected outcome/ deliverables and the milestones	
15.	To explain risk and provide its mitigation in the following aspects:	Explanation of risk How to mitigate?
16.	Technology risk	
17.	Funding risk	
18.	IPR Proposal	
19.	Quantum and schedule of disbursement (in brief, detail disbursement to be attached)	

**C DECLARATION**

- a) I, \_\_\_\_\_ (IC no. \_\_\_\_\_) hereby declare that the information contained in this application forwarded to the Malaysian Communications and Multimedia Commission is true, accurate and complete to the best of my knowledge and belief and that I have not withheld/ distorted any material facts.
- b) I also declare that I am free from any litigation pending litigation, claims, demands or actions pertaining to the proposed project. I understand that if the grant is obtained by false or misleading statements, I may be prosecuted and in addition, the Commission may, at its discretion, withdraw the grant and recover immediately from me any amount of the grant that may have been disbursed.
- c) I also agree to abide to the terms and conditions of the SRCP.

	Signature:	Date of application:
	Designation:	Registered institution stamp:
	Name (in BLOCK letters):	

**For the Commission's use only**

**D RC Secretariat Comments**

Date: \_\_\_\_\_

Recommend to be tabled to RCP

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Reject

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## APPENDIX C: Research Focus Areas and Themes

1. Five themes (1/2007 to 5/2007) have been identified to kick start the research collaboration for 2007.
2. Themes outside the five identified may be considered based on the three key focus areas:
  - a. Emerging wireless technology;
  - b. Spectrum management; and
  - c. Spectrum and us.

Theme No.	1/2007
Source	MCMC
Start date	In 2007
Key focus area	Spectrum and us
Statement of the problem	Spectrum has been used extensively in our daily life. Wireless has allowed us to be mobile, to replace or as an alternative to use of wires to link up devices and people for communications. With the rapid development of wireless technology, spectrum will increasingly play a bigger role in how we live, work and play. We can now be connected almost anywhere and at anytime but will it lead us to be more productive and socially connected? Be happier? Or cause social ills, health problems, low productivity, etc? We need to understand the scenarios and models that may arise. Study how and to what extent it will change and impact our way of life so that we can harness its benefits and avoid or handle its pitfalls.

Theme No.	2/2007
Source	MCMC
Start date	In 2007
Key focus area	Spectrum management
Statement	<p><u>Issue of spectrum cost versus network cost.</u></p> <p>The size of spectrum needed to build a network service may be traded for a lower network cost. Lesser spectrum size may lead to the need for more network (base transceiver stations and sites) to achieve the same quality, coverage and capacity? However due to the limited spectrum resource, allocating more spectrum to achieve a lower network cost may not be the way as it may lead to efficient use of spectrum. Thus an optimum size in between both extremes may need to be found to serve a particular market or users. Besides this, will it also mean that the marginal</p>

	savings in network cost for more spectrum may be use to find the cost of the spectrum?
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Theme No.	3/2007
Source	MCMC
Start date	<b>In 2007</b>
Key focus area	<b>Spectrum management</b>
Statement	<p><u>The use of frequency adaptive HF systems</u></p> <p>Considering:</p> <ol style="list-style-type: none"> <li>1. that in recent years adaptive HF systems have been developed which can automatically select the optimum channel from an assigned group;</li> <li>2. that recent decisions of World Radiocommunication Conferences (WRCs) to allocate less spectrum for fixed services at HF could result in more difficulties for the equitable and efficient use of the allocated spectrum;</li> <li>3. that voice traffic is increasingly being replaced by data traffic, which tends to require a high quality channel for short periods;</li> <li>4. that use of adaptive HF systems, which release the channel when they have no traffic, allows frequencies to be shared between several systems or users;</li> <li>5. that Resolution 802 (WRC-03) Agenda Item 1.13 includes the consideration by WRC-07 of the use of frequency adaptive systems in the MF/HF bands in accordance with Resolution 729 (Rev. WRC-97). The latter Resolution invites ITU-R to pursue its studies on the subject with a view to achieving optimum operational performance and compatibility,</li> </ol> <p>Research may focus on :</p> <p>What technical and operational implications result from the use of adaptive HF systems within the fixed service in terms of:</p> <ol style="list-style-type: none"> <li>1.1 grade of service;</li> <li>1.2 efficient use of spectrum;</li> <li>1.3 minimization of interference;</li> <li>1.4 better access to the spectrum;</li> <li>1.5 other factors?</li> </ol>

Theme No.	4/2007
Source	MCMC
Start date	In 2007
Key focus area	Emerging wireless technology

Statement	<p><u>Issue of reliable communications at frequencies bands above 25 GHz in the tropics.</u></p> <p>Considering:</p> <ol style="list-style-type: none"> <li>1. that high demand for spectrum in the lower frequency spectrum bands;</li> <li>2. that use of frequencies in the higher bands could tap upon the large spectrum available for communication use;</li> <li>3. that high communication suffer greater propagation losses making them unsuitable for long range communication;</li> <li>4. in addition, heavy tropical rain further reduces the reliability of the link and additional link budget has to be set aside for rain fade in order to improve its reliability;</li> <li>5. high capacity communications links (&gt;1Gbps) could be realized from the large available spectrum.</li> </ol> <p>Noting that:</p> <ol style="list-style-type: none"> <li>6. Technology is now emerging in the millimeter waves that could now be used for point-to-point and point to multipoint broadband wireless systems which are ideal for backhauling applications and in last mile access.</li> </ol> <p>Research may focus on :</p> <p>What technical and operational techniques that could be applied to the use of such frequency spectrum for broadband fixed access or fixed point-to-point/repeater service in the tropics in terms of:</p> <ol style="list-style-type: none"> <li>1.1 reliability/grade of service; and</li> <li>1.2 range;</li> </ol>
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Theme No.	5/2007
Source	MCMC
Start date	In 2007
Key focus area	<b>Emerging wireless technology</b>
Statement	<p><u>Spectrum needs of IMT-Advanced in Malaysia</u></p> <p>Considering:</p> <ol style="list-style-type: none"> <li>1. that there are high demand for spectrum for</li> </ol>

	<p>higher speed data rates;</p> <ol style="list-style-type: none"><li>2. economic importance to Malaysia participating actively in R&amp;D and manufacturing in the cutting edge technology;</li><li>3. importance of coexistence of new services with existing services;</li></ol> <p>Research may focus on:</p> <ol style="list-style-type: none"><li>1. Study the IMT applications as proposed in relation to the Malaysian environment and assess if the current allocated spectrum can cater for its current and future growth.</li><li>2. Identification, evaluation (ITU) and selection of appropriate radio interface technology for Malaysia. This may need network modeling and simulation of the performance of the technology based on the above identified applications.</li><li>3. If additional spectrum is required, to study and identify spectrum suitable for the above (2) applications in the band 1 to 6 GHz. In particular if the band 3.4 – 4.2 GHz can be suitably allocated taking into account the sharing and mitigation techniques as proposed by ITU study groups.</li></ol>
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