



**MALAYSIAN COMMUNICATIONS AND MULTIMEDIA COMMISSION**

**INVITATION TO REGISTER INTEREST**

**AS**

**UNIVERSAL SERVICE PROVIDER**

Ref: MCMC/RDD/PDD(5)/T3\_Extn(P3)/TCA/12/14(13)  
Date: 2 December 2014

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## **ABBREVIATIONS**

AA	- Apparatus Assignment
AC	- Alternating Current
AFS	- Antenna Feeder System
BTS	- Base Transceiver Station
C&S	- Civil And Structure
c/w	- Complete With
CD	- Compact Disk
Cu	- Copper
Dia	- Diameter
ID	- Identification
kVA	- Kilo Volt Amps
LAT	- Latitude
LED	- Light Emitting Diode
LOA	- Letter Of Award
LONG	- Longitude
LOS	- Line Of Sight
M&E	- Mechanical And Electrical
MCMC	- Malaysian Communications And Multimedia Commission
MOCN	- Multiple Operator Core Network
MORAN	- Multiple Operator Radio Access Network
MSC	- Mobile Switch Centre
NFP(I)	- Network Facilities Provider Individual
NOC	- Network Operation Centre
NSP(I)	- Network Service Provider Individual
OMC	- Operation And Maintenance Centre
PDH	- Plesiochronous Digital Hierarchy
PE	- Professional Engineer
PLMN	- Public Land Mobile Network
PVC	- Polyvinyl Chloride
QoS	- Quality Of Service
RAN	- Radio Access Network
Ref	- Reference
RF	- Radio Frequency
RNC	- Radio Network Controller
SESB	- Sabah Electricity Sdn Bhd
SESCO	- Syarikat SESCO Berhad
SMS	- Short Message Service

SRSP	- Standard Radio System Plan
SWG	- Standard Wire Gauge
T3E	- Time 3 Extension
TNB	- Tenaga Nasional Berhad
USP	- Universal Service Provision
UST	- Universal Service Target
VSAT	- Very Small Aperture Terminal

## **INTERPRETATION**

Any terms or words used in this Invitation shall, unless expressly stated or if the context otherwise requires, shall have the same meaning as provided in the Communications and Multimedia Act 1998 (the “Act”), the regulation(s) and/or the instrument(s) made under it.

- a. “Licensee” means a person who either holds an individual licence, or undertakes activities which are subject to a class licence, granted under the Act 588.
- b. “Interested Licensees” means any person who holds an individual licence and interested to participate pursuant to this Invitation.
- c. “Designated Universal Service Providers” means any licensees designated under the Regulations pursuant to this Invitation.
- d. “Regulations” means the Communications and Multimedia (Universal Service Provision) Regulations 2002.
- e. “Work” means the entire work to be undertaken and completed by the universal service provider for Part 1 and/or Part 2.
- f. “Sites” means locations stipulated in the **Appendix 1** of this invitation for the provision of Time 3 Extension (T3E) under Phase 3 for Public Cellular Services including the spokes.

## SECTION I INTRODUCTION

### 1 BACKGROUND

- 1.1 The Universal Service Provision (USP) project is an ongoing effort to promote the widespread availability and usage of network services and applications services by encouraging the installation of tower and infrastructure and the installation of equipment and electronics and applications services in underserved areas and/or for underserved groups within the community (“universal service targets”).
- 1.2 The Malaysian Communications and Multimedia Commission (MCMC) had, pursuant to Regulation 4(1) of the Communications and Multimedia (Universal Service Provision) Regulations 2002 [*P.U.(A) 419/2002*] (as amended by *P.U (A) 258/2008*) (“the Regulations”), issued and published notifications specifying universal service targets under Notification Ref. No: NT/USP/1/04, Ref. No: NT/USP/08/01, NT/USP/2/02 and NT/USP/01/11 (“the Notifications”). The list of the universal service targets relevant to this Invitation and some relevant information in relation thereto are contained in **Appendix 1** of this Invitation.
- 1.3 This Invitation is made pursuant to regulations 3(1), 5(1) and 19(2A) of the Regulations (“this Invitation”) to invite the Interested Licensees to register their interest to be the universal service provider for the provision of Time 3 Extension (T3E) Phase 3 for the Public Cellular Services nationwide.
- 1.4 Under this Invitation, the provision of radiocommunications and transmitters links shall be operated by using Radio Access Network (RAN) Sharing network as detailed out in this Invitation and **Appendix 2** of this invitation. In addition, for several sites as listed in **Appendix 1**, the coverage objectives are extended further via the deployment of hub and spoke.

## SECTION II INVITATION TO REGISTER INTEREST

### 2 GENERAL DESCRIPTION OF THE FACILITIES AND SERVICES TO BE PROVIDED

- 2.1 This Invitation is made with respect to the universal service objectives set out in Regulation 3(1) of the Regulations. The facilities and services to be installed and provided under this Invitation are the installation of tower and infrastructure (Part 1) and the installation of equipment and electronics related to public cellular service under the concept of Radio Access Network (RAN) Sharing Technology (Part 2).
- 2.2 The scope of work pursuant to this Invitation is divided into PART 1 and PART 2 as set out in **Appendix 2** of this Invitation.
- 2.3 The details of the specifications and technical requirements for the facilities under PART 1 and PART 2 in **Appendix 2** are stipulated in **Appendix 9** of this Invitation.
- 2.4 The installation of equipment and electronics under PART 2 to be provided in **Appendix 2** shall meet the following requirements:
- (a) Service requirements:
- (i) the provision of public cellular service comprising of 2G and 3G services with the capability of providing voice and data services to meet the requirements of the general public;
  - (ii) the provision of public cellular service shall be accessible in all of the universal service targets including the rural and remote parts of the universal service targets and the spoke sites (if applicable);
  - (iii) coverage of the public cellular services must include at the minimum of coverage objectives within the universal service targets as stipulated in **Appendix 1** including the coverage objectives for the spoke sites (if applicable);
  - (iv) the quality of public cellular service including the signal level and signal quality should be consistent with the Variation to Commission Determination on Mandatory Standards for Quality of Service (Public Cellular Service), [Determination No. 2 of 2002], Determination No.1 of 2013 or such other standards for quality of service on public cellular service as may be required by MCMC;
  - (v) the network services shall enable public cellular service, under normal operating conditions, to be made available 24 hours per day, 7 days a week and shall enable interconnection with networks of other licensed service providers; and

- (vi) Interested Licensees shall undertake the measures to avoid or limit the interference to the adjacent areas and overall cellular network efficiency.
- (b) Continuity of service requirement during natural disaster :
  - (i) the provision of public cellular service shall be made available 24 hours per day, 7 days a week at the area of coverage objectives within the universal service targets included to the area that is prone to natural disasters such as flood.
- (c) Technical requirement:
  - (i) the specifications in respect of cabins, power supply and etc. as stipulated in **Appendix 9** of this Invitation.

### **3 RAN SHARING TECHNOLOGY INTRODUCTION**

- 3.1 Radio Access Network (RAN) Sharing Technology provides the most suitable, cost-effective solution with reduced operating expenditure.
- 3.2 Through shared RAN, Public Cellular Network Providers can save the initial network construction investment, accelerate network construction speed, increase the initial coverage and attract more users in the new service provided areas.
- 3.3 Besides sharing the infrastructure; RAN Sharing can also support different services and applications from different Public Cellular Network Providers to maintain good competitiveness with adopting different RAN sharing solutions by considering the frequency resources, network resources and business strategy, and supporting multiple Public Cellular Network Providers sharing network resources simultaneously by flexible software and hardware configurations.
- 3.4 The RAN Sharing technology will also facilitate Public Cellular Network Providers to satisfy their obligation in providing basic communication services to the underserved community.

### **4 RAN SHARING SCOPE OF WORK PART 2**

- 4.1 The RAN Sharing solution shall be based on the following basic principles:
  - a) The RAN sharing equipments shall have the capability to provide 2G and 3G services. It shall be configured so that it can serve a minimum of 1000 subscribers per site for 2G networks and a minimum of 1 number of carriers per sector for 3G networks;
  - b) RAN sharing equipment shall be able to cater the usage of minimum 3 Public Cellular Network Providers comprising of 2G and 3G services with the capability of providing voice and data services at broadband speed and 4G-LTE ready;



- c) The Interested Licensee shall be able to understand the overall RAN Sharing system by having either the Multi – Operator Radio Access Network (MORAN) or Multi – Operator Core Network (MOCN) for 2G or 3G services with supporting multiple PLMN broadcast;
- d) In the event of the unavailability of line of sight (LOS) and wired infrastructure, the Interested Licensees may opt to use very small aperture terminal (VSAT) as a transmission backhaul solution depending on the surrounding landscape terrain;
- e) Interested Licensees shall ensure that the transmission backhaul should be capable to cater the usage of minimum 3 Public Cellular Network Providers in supporting 2G and 3G services;
- f) In the RAN Sharing system, billing system is independently controlled by each Public Cellular Network Provider; and
- g) Any component related 2G and 3G services are required to be included among others the BSC, RNC, the associated BTS, links, NOC and associated ancillaries facilities with full connectivity to the MSC of Public Cellular Network Providers.

## 5 HUB AND SPOKE CONCEPT

- 5.1 The primary advantage of deploying the hub and spoke concept is to further extend coverage to the scattered low population areas and other suitable areas to improve the signals.
- 5.2 Furthermore, it can significantly enhance the network capacity and enabling more efficient use of shared resource.
- 5.3 The deployment of the hub and spoke concept shall be based on the following basic principles:
  - a) The capacity of transmission backhaul for the hub tower should be capable to cater usage of minimum 3 Public Cellular Network Providers in support of 2G and 3G services for the hub as well as the spoke; and
  - b) Other general description of the facilities and services to be provided by Public Cellular Network Providers are as per **Item 2.3 and 2.4**

## 6 STANDARD ACCESS OBLIGATIONS FOR FACILITIES AND SERVICES

- 6.1 The Designated Universal Service Provider for Part 2 shall make a written access request to network facilities provider and network service provider to access to their network facilities or network services to achieve the interoperability and interconnection for the RAN sharing services according to Chapter 3 of Part VI of the CMA.

- 6.2 Notwithstanding the above, the Designated Universal Service Provider for Part 2 is encourage to develop a comprehensive commercial bussines model where the basis of commercial business model should be the operating expenditure involved for this project only. This commercial model may include the following items, but not limited to:
- a) Land rental;
  - b) Utility rental and other administration;
  - c) Transmission backhaul lease;
  - d) Preventive and corrective maintenance services;
  - e) Managed services for the complete project;
  - f) Apparatus Assignment fee for transmission backhaul and radios;
  - g) Data centre lease services for hosting BSC and RNC (if applicable); and
  - h) Other necessary operating costs which are related to this project.
- 6.3 The above commercial bussines model may be the basis for Interested Licensees to determine the monthly operations and maintenance chargers to the Public Cellular Network Providers.

## **7 INTEROPERABILITY AND INTERCONNECTION FOR THE OVERALL NETWORK**

- 7.1 The Interested licensee should propose the interoperability and interconnection for the overall network. The mode of transmission from a Time 3 Extension location based on line of site, terrain and availability of infrastructure may depend and the options that most likely available will be VSAT, Microwave or Fiber.
- 7.2 The technology proposed should be flexible with different types of backhaul systems and should not be restricted to one (1). Interested Licensees must take care of the quality of service (QoS) for end-to-end system from BTS and NodeB to BSC and RNC. The BSC and RNC together with OMC should be at strategic location so that the interconnection with Public Cellular Network Providers can be easy and smooth. Public Cellular Network Providers and the Designated Universal Service Provider PART 2 should meet at common location for interconnect of the Time 3 Extension sites and BSC and RNC to Public Cellular Network Providers Core Network.
- 7.3 The proposal for interconnect and interoperability should include:
- a) Site Location for BSC and RNC;
  - b) The architecture of connectivity from different transmission modes to the MSC, BSC and RNC;

- c) Proposed design of interconnectivity from RAN Sharing BSC and RNC to MSC Public Cellular Network Provider's Core Network;
- d) Bandwidth Dimensioning from BTS and Node-B to the BSC and RNC;
- e) Proposed Network Block Diagram for RAN Sharing System;
- f) Detailed Network Topology from Time 3 Extension BTS and e-Node B to BSC and RNC and from BSC and RNC to Public Cellular Network Providers Core Network;
- g) Proposed Network Equipment; and
- h) Detailed Implementation timeline.

## **8 SPECTRUM FREQUENCY AND AA PROCEDURE**

- 8.1 The Designated Universal Service Provider for Part 2 is allowed to use the spectrum for the provision of the Work only after the issuance of the requisite Apparatus Assignment(s) in accordance with the Communications and Multimedia Act 1998 and the Communications and Multimedia (Spectrum) Regulations 2000.
- 8.2 The use of spectrum band for 2G and 3G services will be determined by MCMC or via collaboration with Public Cellular Network Providers and subject to requirements stipulated in the relevant Standard Radio System Plan or guideline issued by MCMC including any revision thereafter.

## **9 TESTING PROCEDURE**

- 9.1 The Designated Universal Service Provider for PART 2 should propose the complete test procedures to be conducted during integration of RAN Sharing infrastructure with the Public Cellular Network Providers.
- 9.2 For the smooth integration of RAN Sharing network to the Public Cellular Network Providers, the Designated Universal Service Provider for PART 2 may propose, but not limited to, the following testing procedures:
  - a) Connectivity Test;
  - b) Functionality Test;
  - c) Network Test; and
  - d) Service Test.

- 9.3 The above test will be conducted by Designated Universal Service Provider PART 2 with individual Public Cellular Network Provider and subsequently with all the Public Cellular Network Providers.
- 9.4 All related cost for the testing conducted as stated in **Item 9.2** shall be borne by the Designated Universal Service Provider for PART 2.
- 9.5 During the testing and any other procedure for the integration, the Designated Universal Service Provider for PART 2 must ensure to undertake certain precaution methods to avoid severe impact that affecting the subscribers of Public Cellular Network Providers.
- 9.6 All the Public Celullar Network Providers for each site must have given their prior written consent to the Designated Universal Service Provider for Part 2 based on the test conducted above before operation commencing the RAN sharing operation.

## **10 GREEN TECHNOLOGY**

- 10.1 The Interested Licensees are encourage to include the use of the green technology pursuant to this Invitation to achieve the following objectives in line with the National Green Technology Policy Objective:
- a) To reduce the energy usage rate and increase economic growth;
  - b) To facilitate the growth of the green technology industry and enhance its contribution to the national economy;
  - c) To increase national capability and capacity for innovation in green technology development and enhance Malaysia's competitiveness in green technology in the global arena; and
  - d) To ensure sustainable development and conserve the environment for future generations.
- 10.2 Notwithstanding the above, the proposed solution by the Interested Licensees should be proven to be feasible in provisioning the public cellular shall include but not limited to the following areas:
- a) Techniques to enable energy efficiency such as to use high efficiency devices in electronic equipments;
  - b) Green energy and green facilities such as the optimization of hybrid power or alternatives supply such as fuel cell energy especially for the site without TNB/ SESCO/SESB supply; and

- c) Providing total flooding fire suppression with automatic detection, control and eco friendly to reduce the greenhouse gas emissions e.g CO2.

## 11 ASSIGNMENT OF LOCAL CONTRACTOR

- 11.1 The Designated Universal Service Provider is encouraged to invite qualified local contractor(s) to carry out the work. This is in line with the Malaysia's Government Procurement Regime which prime objective is to obtain value for money through acquisition works, supplies and services.
- 11.2 In addition, the assignment of local contractor is to stimulate the growth of local industries through the maximum utilization of local materials and resources as well as to encourage and support the involvement of Bumiputera entrepreneurs.

## 12 REGISTRATION OF INTEREST REQUIREMENTS

- 12.1 The Interested Licensees who wish to register their interest to become the Universal Service Provider pursuant to this Invitation must hold the requisite licences that enable them to carry out the scope of work under this Invitation within the scope of their licences and meet the requirements as specified below:

(a) The Interested Licensees are required to hold:

- (i) A Network Facilities Provider Individual [NFP(I)] licence for the scope of work in PART 1, under the Communications and Multimedia Act 1998, and is authorized to own or provide **ALL** of the following network facilities under Regulation 19 of the Communications and Multimedia (Licensing) Regulations 2000, as amended:

- i. Towers, poles, ducts and pits used in conjunction with other network facilities.

- (ii) A Network Facilities Provider Individual [NFP(I)] and Network Service Provider Individual [NSP(I)] licence for the scope of work in PART 2 under the Communications and Multimedia Act 1998 with the following condition:

- i. The licensed area specified under both the [NFP(I)] licence and the NSP(I) licence of the licenses **shall be within "Malaysia"**; and
  - ii. The list of network facilities permitted in the licensees's [NFP (I)] license shall include radio communications transmitters and links.
  - iii. There shall be no last mile limitation specified in the [NFP (I)] licence.

- (b) Notwithstanding the above, the Interested Licensees are required to have at least one **(1) year** experience with good track records and/or engage in a

collaboration or Memorandum of Understanding (MOU) with other qualified contractors or Public Cellular Network Provider.

- 12.2 Notwithstanding the above, to be eligible to register an interest, the Interested Licensees shall not have any outstanding amount due to MCMC including but not limited to the following:
- (a) any license fees due to MCMC under the CMA;
  - (b) Universal Service Provision Fund (USP Fund) Contribution; and
  - (c) Apparatus Assignment fees.
- 12.3 MCMC shall have the right to forfeit the registration or to disqualify the submission of the Interested Licensees who have failed to comply with the requirement stated in **Item 12.2**.
- 12.4 For the purpose of this Invitation, MCMC has grouped the universal service targets into 31 clusters as stated in **Appendix 1** of this Invitation. The Interested Licensees may register interest to become the Universal Service Provider for:
- a) PART 1 – Installation of Tower and Infrastructure ; or / and
  - b) PART 2 – Installation of Equipment and Electronics
- for each of the cluster(s) of their choice.
- 12.5 The Interested Licensees may choose to register their interest to become the Universal Service Provider for:
- (a) any one (1) cluster; or
  - (b) two (2) or more clusters; or
  - (c) all clusters
- of the universal service targets listed in **Appendix 1**.
- 12.6 For the avoidance of doubt, MCMC will not accept registration of interest for **part of a cluster** or any combination of clusters which includes **a part of a cluster**. Similarly, in relation to the scope of work, MCMC will only accept registration of interest for **the entire of PART 1, the entire of PART 2 or both PARTs**.
- 12.7 The Interested Licensees shall register their interest with MCMC by completing the form enclosed in **Appendix 3** of this Invitation. Please note that the deadline for submitting the duly completed registration of interest form in relation to the universal service targets is stated in **Item 15.1** of this Invitation.
- 12.8 The Interested Licensees are hereby reminded that pursuant to Regulations 6(1) and 7(2) of the Regulations, those who have registered their interest will be legally obliged to submit their draft universal service plan(s) for their scope of work and cluster(s) of the universal service targets and such further information

requested by MCMC. The scope of the draft universal service plan and the manner of submission are specified in **Item 13 and Item 14** of this Invitation.

- 12.9 The Interested Licensee who fails to comply with Regulations 6(1) or 7(2) commits an offence under Regulation 39 of the Regulations and shall on conviction be liable to a maximum fine of RM300,000.00 or imprisonment for a maximum term of 3 years or both.
- 12.10 All Interested Licensees shall register their interest with MCMC by submitting the duly completed form as enclosed in **Appendix 3** of this Invitation by hand to the following address:

**Malaysian Communications and Multimedia Commission**  
**Off Persiaran Multimedia**  
**63000 Cyberjaya**  
**(Attn : Secretary of the Tender Committee)**

- 12.11 The Interested Licensees must fill up the acknowledgement form provided at the registration counter and MCMC will not accept the registration of interest by email, fax, and mail.

### **13 SUBMISSION OF DRAFT UNIVERSAL SERVICE PLAN**

- 13.1 The draft universal service plan shall be divided into two separate documents as follows:

- (a) Technical Proposal; and
- (b) Financial Proposal.

As per **Item 14.2** of this Invitation.

- 13.2 The Interested Licensees shall submit the draft universal service plan for PART 1 or PART 2 or both parts for each cluster based on their registration of interest and separate the binding of each part of the draft universal service plan.

- 13.3 The submission of draft universal service plan shall be accompanied by a One Off Document which consist of :

- (a) licensee's information and other supporting documents as detailed out in **Appendix 4** ;
- (b) company profile;
- (c) Softcopy of the completed set of draft universal service plan; and
- (d) Letter of Collaboration or MOU between the Licensee and contractor in collaborative activities (if applicable).

- 13.4 In preparing the draft universal service plan(s), the Interested Licensees shall include the appropriate information relating to the technical and financial proposal for each of the universal service target.

- 13.5 For the avoidance of doubt, MCMC will not accept submission of draft universal service plan for **part of a cluster** or any combination of **clusters which includes a part of a cluster**. Similarly, in relation to the scope of work, MCMC will only accept submission of draft universal service plan for the entire of PART 1, or PART 2 or both Parts at its entirety.
- 13.6 Each technical and financial proposal mentioned above shall be submitted in DUPLICATE and the hard copies of the draft universal service plans shall be marked as follows:
- (a) one (1) copy to be marked “**ORIGINAL**”;
  - (b) two (2) copies to be marked “**COPY**”;
  - (c) all pages of the Financial Proposal of the draft universal service plan shall be duly initialed and affixed with a rubber stamp of the Licensee;
  - (d) all pages of the Technical Proposal of the draft universal service plan shall NOT bear the Licensee’s name, logo and stamp; and
- 13.7 for ease of reference, the pages for the draft universal service plan shall be numbered in the following format: “ 1 of (total pages of draft universal service plan), 2 of ..., 3 of ...” and accordingly thereafter. The submission of draft universal service plans shall be enclosed in a separate sealed envelope(s) and superscribed as follows:
- (e) Technical Proposal: **(Cluster No. #/Scope of Work: PART #)**;
  - (f) Financial Proposal: **(Cluster No. #/ Scope of Work: PART #)**; and
  - (g) One-Off basis as per **Item 13.3**.
- 13.8 All submissions of the draft universal service plan(s) shall be prepared in the prescribed format and properly put in box(es) with A4 size label :
- (a) MCMC’s Invitation reference **(INVITATION REF. NO.: MCMC/RDD/PDD(5)/T3\_Extn(P3)/TCA/12/14(13))** at the top left hand corner of the box(es);
  - (b) the description “**SUBMISSION OF DRAFT UNIVERSAL SERVICE PLAN - (Cluster No. #)**” at the central position of two sides of the box(es); and
  - (c) “**SUBMITTED BY: (Name of Licensee)**” at the central bottom position of the box(es).
- 13.9 In the event of discrepancies, the document marked “**ORIGINAL**” shall prevail.
- 13.10 All documents mentioned above, including any appendices annexed thereto, shall be taken as mutually explanatory of each other.



- 13.11 The Interested Licensees shall be deemed to have examined and understood all information and documents comprised in this Invitation.
- 13.12 All costs and expenses associated with and necessary for the preparation and submission of the draft universal service plan shall be borne by the Interested Licensees.
- 13.13 All corrections, changes, alterations and/or any other amendments whatsoever made in the draft universal service plan shall be initialed and affixed with the Interested Licensee's company stamp.
- 13.14 All documents which form part of the draft universal service plan shall be properly and securely bound. The draft universal service plan(s) shall be deposited in the box designated by MCMC for the receipt of the documents located at:

**Malaysian Communications and Multimedia Commission**  
**Off Persiaran Multimedia**  
**63000 Cyberjaya**  
**(Attn : Secretary of the Tender Committee)**

- 13.15 Handbooks and any other literature, if any, shall be bound in separate covers.

#### **14 SCOPE OF THE DRAFT UNIVERSAL SERVICE PLAN**

- 14.1 The draft of the universal service plan to be submitted by the Interested Licensees for both scope of work, shall contain the following information (as may be applicable):
- (a) the coverage objectives (name of villages, settlement areas, plantations, highways, population etc) within the universal service target to which the universal service plan applies to;
  - (b) the exact location of the site within the universal service target, to be submitted in geographical coordinate in decimal format (Latitude/Longitude WGS84) with site name, address; and
  - (c) a detailed description of the infrastructure and/or equipments to be installed at the site including at spoke's sites (if applicable) as follows:
    - (i) a detailed description of site infrastructure and ancillaries including access road to be provided at the site (applicable to PART 1 scope);
    - (ii) the source of AC power supply for each site; i.e. TNB, SESB, SESCO, generator set etc. (applicable to PART 2 scope);
    - (iii) a detailed description of cellular and other related equipments to be installed at the site, together with Malaysian Standard Type-Approval details (applicable to PART 2 scope);
    - (iv) a detailed of network facilities and network services with contingency plan must be established to facilitate for emergency preparedness in the event of a regional, national or international disaster i.e flood;

- (v) detailed information and location of the existing network infrastructure, facilities and/or services owned or provided by the Interested Licensee within the universal service target and its adjacent areas; and
  - (vi) a detailed site design and network configuration to be deployed within the universal service target. The Interested Licensee shall have regard to maximizing the use of existing network infrastructure and facilities in a cost-effective manner; under such circumstances, this should reflect the incremental capital cost;
- (d) the project implementation timeline for the provision of the public cellular services indicating site planning, design, acquisition, approvals, procurement of materials, installation, testing and commissioning;
- (e) the capital cost for the installation of network facilities or the provision of network services within the universal service targets. Cost information must include all breakdown, complete computation and nett figure for the total costs without any form of conditional discounts or options. If discounts are indicated, MCMC will disregard the discounts in considering the total cost proposed by the Interested Licensee. If any options are provided, MCMC reserves the right to disqualify the submission of the draft universal service plan;
- (f) the arrangement of the sharing of network facilities and network services with other licensees;
- (g) the details of RAN Sharing solution for 2G and 3G services proposed by Interested Licensees with guidelines and standard principles as stated in **Item 3 and Item 4**;
- (h) the Designated service provider have to ensure that the facilities and services are continuously available for use in the universal service targets for a minimum of 3 years operation (applicable for Part 2 only) ;
- (i) information on project management team of the Interested Licensee for the universal service target which include names, designation, address, contact numbers etc;
- (j) Information on the Interested Licensee's and the collaboration partner's (if applicable) track record and relevant experience related to public cellular projects for the past 3 years. The Interested Licensee should also:
- (i) include information on its current projects;
  - (ii) distinguish their experiences as a contractor and as a network facilities provider;
  - (iii) specify the number of towers owned or provided by the Interested Licensee in the state where the universal service target is located; and

- (iv) Letter of Collaboration or MOU between the Licensee and contractor in collaborative activities (if applicable).

14.2 The format of the draft universal service plan in relation to both scope of work in PART 1 and PART 2 shall be as follows :

(a) Technical Proposal

SECTION	DESCRIPTION
<b>SECTION A</b>	<b>EXECUTIVE SUMMARY OF (CLUSTER #)</b>
	Overview of the technical proposal
<b>SECTION B</b>	<b>TECHNICAL PROPOSAL OF (CLUSTER #)</b>
B1	Summary of Technical Proposal <ul style="list-style-type: none"> <li>Refer to <b>Appendix 5</b> for summary proposal template</li> </ul>
B2	Details of Technical Proposal <ol style="list-style-type: none"> <li>Site A (Site ID &amp; Coverage Objective) <ul style="list-style-type: none"> <li>Details of Technical Proposal (as may be applicable) <ul style="list-style-type: none"> <li>Site ID</li> <li>Coverage objectives</li> <li>Site location (Long/Lat)</li> <li>Site category (collector or spur)</li> <li>Source of AC power supply</li> <li>Site footprint &amp; cabin size</li> <li>Information on existing facilities and/or services</li> <li>Equipment type, configuration &amp; capacity</li> <li>Details of supplier for materials and equipments</li> <li>Implementation timeline</li> <li>Equipment to be provided and installed as contingency plan for the natural disasters event such as flooding and etc</li> <li>.....</li> </ul> </li> </ul> </li> <li>Site B (Coverage Objective) <ul style="list-style-type: none"> <li>Details of Technical Proposal (as may be applicable) <ul style="list-style-type: none"> <li>.....</li> </ul> </li> </ul> </li> </ol>
B3	<ol style="list-style-type: none"> <li>Comprehensive details of RAN Sharing solution for 2G and 3G services. (as per <b>Item 3 and 4</b>)</li> <li>Proposed Network Block Diagram for RAN Sharing System. (as per <b>Item 3 and 4</b>)</li> <li>Network Topology of Interoperability and interconnection for the overall network (VSAT, Microwave &amp; Fiber) from BTS and Node B – BSC and RNC – Core Network (Public Cellular Network Providers) for every cluster. (as per <b>Item 7</b>) <ul style="list-style-type: none"> <li>Bandwidth Dimensioning for each link</li> <li>....</li> </ul> </li> </ol>

SECTION	DESCRIPTION
<b>SECTION C</b>	<b>OTHER INFORMATION</b>
	<ol style="list-style-type: none"> <li>1. Track record and relevant experience related to public cellular projects.</li> <li>2. Number of towers owned or provided by the Licensee in the state where the universal service target is located.</li> <li>3. Brief Information on Project Management team and the contractors/subcontractor(s) that the Licensees intend to use.</li> <li>4. Information on cooperation between licensees.</li> <li>5. Detailed maintenance and operational support plan.</li> <li>6. Other information deemed necessary.</li> </ol>

(b) Financial Proposal

SECTION	DESCRIPTION
<b>SECTION A</b>	<b>EXECUTIVE SUMMARY OF (CLUSTER #)</b>
A	Overview of financial proposal
<b>SECTION B</b>	<b>FINANCIAL PROPOSAL OF (CLUSTER #)</b>
B1	Summary of Financial Proposal Refer to <b><u>Appendix 6</u></b> for summary proposal template
B2	<ol style="list-style-type: none"> <li>1. Site A (Site ID &amp; Coverage Objective) <ul style="list-style-type: none"> <li>• Details of Financial Proposal (itemized pricing by the following components) – please refer to <b><u>Appendix 7</u></b> for detail proposal template (as may be applicable) <ul style="list-style-type: none"> <li>○ Preliminaries</li> <li>○ Tower</li> <li>○ Site Infrastructure and Ancillaries</li> <li>○ AC Power Supply</li> <li>○ Additional Works</li> <li>○ BTS Equipment</li> <li>○ Equipment Shelter</li> <li>○ Equipment to be provided and installed as contingency plan for the natural disasters event such as flooding and etc</li> <li>○ .....</li> </ul> </li> <li>• Details of Financial Proposal (itemized pricing) for maintenance and operation support plan for Part 2 only (as may be applicable) <ul style="list-style-type: none"> <li>○ Cost relevant to Part 2 scope of work and</li> </ul> </li> </ul> </li> </ol>

SECTION	DESCRIPTION
	<p>category B of Part 1 scope of work as stipulated in <b>Appendix 2</b> for maximum of 3 years only.</p> <ul style="list-style-type: none"> <li>○ The preventive and corrective maintenance includes operational checking and testing as stipulated in <b>Appendix 8</b>.</li> </ul> <p>1. Site B (Coverage Objective)</p> <ul style="list-style-type: none"> <li>• Details of Financial Proposal (itemized pricing by the following components) – please refer to <b>Appendix 7</b> for detail proposal template <ul style="list-style-type: none"> <li>○ .....</li> <li>○ .....</li> </ul> </li> </ul>
<b>SECTION C</b>	<b>OTHER INFORMATION</b>
	Other information deemed necessary

Note: Interested Licensees are required to list out details for each USP target under the Cluster(s).

- 14.3 The geographical coordinate/site locations as set out in **Appendix 1** are provided as a guide only. The Interested Licensees are responsible for the identification of actual sites and provide the geographical coordinate in decimal format when preparing their draft universal service plans. The choice of the actual sites shall reflect cost efficiency inclusive sites with flood history. Where possible, the site locations stated in **Appendix 1** should be followed by the Interested Licensees.
- 14.4 The Interested Licensees shall include in their draft universal service plans detailed information on the coverage objectives as required under **Item 14.1(a)** whether or not the site locations as set out in **Appendix 1** are followed.

## 15 CLOSING DATE

### **Registration of Interest**

- 15.1 In relation to universal service targets listed in **Appendix 1**, all Interested Licensees shall register their interest with MCMC **on 16 December 2014 from 9.00 am till 5.00 pm**.

### **Submission of Draft Universal Service Plan(s)**

- 15.2 All submissions of the draft universal service plan(s) shall be prepared in the manner prescribed and submitted at the place stipulated in **Item 13.14**.
- 15.3 All Interested Licensees who have registered their interest pursuant to the above shall submit the relevant draft universal service plan(s) **on or before 12.00 pm, 17 February 2015**.

## **16 MATTERS FOR CONSIDERATION FOR APPROVING DRAFT OF UNIVERSAL SERVICE PLAN**

- 16.1 MCMC will consider the matters specified in Regulation 7 of the Regulations and all information included in the draft universal service plans in deciding whether or not to approve the draft universal service plans.
- 16.2 In addition to those matters, MCMC will also consider factors including but not limited to the following:
  - (a) the Interested Licensee's financial capacity and capability to implement its draft universal service plan; and
  - (b) the Interested Licensee's track record and relevant experience related to public cellular projects.

### **SECTION III PAYMENT FROM THE USP FUND**

#### **17 CLAIM FOR PAYMENT**

- 17.1 A universal service provider designated pursuant to this Invitation is entitled to claim its costs pursuant to Regulation 19(2A) of the Regulations, more particularly the avoidable cost as specified in Table AA of the Schedule in the Regulations. The Designated Service Providers are advised to refer to Part V and Table AA of the Schedule in the Regulations in relation to the costing and claim for universal service provision.
- 17.2 In essence, 'avoidable cost' means the costs that a Designated Universal Service Provider would avoid if it had not been required to provide facilities and services in a universal service target and for purposes of this Invitation.
- 17.3 It is an obligation on every Designated Universal Service Provider to submit, not later than 31 March of the relevant calendar year(s), a written claim to MCMC in accordance with Regulation 20 of the Regulations for the cost of universal service provision for the previous calendar year. Interested Licensees are reminded that this obligation is applicable notwithstanding any payments that may be made by MCMC under Regulations 12 or 20A of the Regulations.
- 17.4 A Designated Universal Service Provider should submit the claims using the Claims Form that will be provided by MCMC and to be submitted together with necessary documents.
- 17.5 Payment will be made upon a duly verified claim less any payments already made under Regulations 12 or 20A of the Regulations not later than thirty (30) days from the date of the verification is completed by MCMC.

#### **18 ADVANCE PAYMENT AND QUARTERLY PAYMENT(S)**

##### Advance Payment

- 18.1 MCMC may, under Regulation 12 of the Regulations, consider making an advance payment to a Designated Universal Service Provider towards the capital cost of implementation of the universal service plan approved pursuant to this Invitation ("Advance Payment"). A Designated Universal Service Provider may submit its written application for Advance Payment to MCMC for its consideration.

##### Quarterly Payment(s)

- 18.2 MCMC may under Regulation 20A of the Regulations, consider making quarterly payments to a Designated Universal Service Provider for the capital costs of implementing the approved universal service plan ("Quarterly Payment"). A Designated Universal Service Provider may submit its written application for Quarterly Payment(s) to MCMC for its consideration.

### Obligation to refund

- 18.3 In the event that a Designated Universal Service Provider receives payment under Regulation 12 and/or 20A of the Regulations of a total amount which exceeds the cost incurred for a calendar year that it is entitled to claim pursuant to this Invitation, the Designated Universal Service Provider is required under Regulation 21A of the Regulations to refund to MCMC the monies paid in excess in accordance with the notice that MCMC may issue.
- 18.4 A Designated Universal Service Provider who fails to comply with the notice issued by MCMC commits an offence under Regulation 21A (2) of the Regulations.

## **19 PAYMENT IN CASE OF REVOCATION OF DESIGNATION OF DESIGNATED UNIVERSAL SERVICE PROVIDER**

- 19.1 The designated universal service provider revoked under sub-regulation 16(1) of the Regulations, shall not be paid any cost and expenses incurred as set out in the approved universal service plan unless the designated universal service provider has reimbursed MCMC:
- (a) Overpaid monies under regulation 21A of the Regulations;
  - (b) Any payments due under sub-regulation 16(6)(b) of the Regulations;
  - (c) All costs incurred in restoring services in the universal service target; and
  - (d) Any other costs duly incurred by MCMC.



## SECTION IV GENERAL TERMS & CONDITIONS

### 20 RIGHT TO ACCEPT ANY DRAFT UNIVERSAL SERVICE PLAN AND TO REJECT ANY OR ALL

20.1 MCMC reserves the right to accept or reject any draft universal service plan and to annul the USP tender process and reject all draft universal service plan(s) at any time prior to the notification of the MCMC's decision without thereby incurring any liability to the affected Licensee or Licensees or any obligation to inform the affected Licensee or Licensees of the grounds for the MCMC's action.

### 21 AWARD OF THE APPROVED UNIVERSAL SERVICE PLAN

21.1 MCMC may designate a Licensee as a universal service provider that submits draft universal service plan(s) offering the best value for money. The invitation to submit draft of universal service plan shall cover several universal service targets; MCMC reserves the right to award the approved universal service plan(s) for only some of the successful Licensee or Licensees.

### 22 IMPLEMENTATION OF APROVED UNIVERSAL SERVICE PLAN

22.1 The Designated Universal Service Providers are reminded that in the event that MCMC approved the draft universal service plan(s) submitted under this Invitation, the Designated Universal Service Providers will be subject to an obligation under Regulation 11(1) of the Regulations to comply with the approved universal service plan(s).

22.2 Change of site location

- (a) If the site locations and coverage objectives stated in **Appendix 1** are found by the Designated Universal Service Providers to be unsuitable, the Designated Universal Service Providers may propose a change of the site location. The Designated Universal Service Providers shall first attempt to identify a site (within 2 kilometer radius from the site location identified) which it considers suitable to meet the intended coverage objective in **Appendix 1**.
- (b) If the coverage objective based on the proposed site location differs from the coverage objective in **Appendix 1**, the Designated Universal Service Providers are required to notify MCMC on the new coverage objective based on the proposed site location.
- (c) The Designated Universal Service Providers must ensure that any new site location proposed is still within the same universal service target(s) as stated in **Appendix 1**.

22.3 The Designated Universal Service Providers are reminded that the selection of site locations and the corresponding coverage objectives shall be based on 2G and 3G network planning.

- 22.4 The Designated Universal Service Providers who fails to comply with Regulation 11(1) of the Regulations commits an offence under the Regulation 39 of the Regulations and shall on conviction be liable to a maximum fine of RM300,000.00 or imprisonment for a maximum term of 3 years or both.

## **23 ADDITIONAL SERVICES**

- 23.1 As stated earlier, this Invitation is made with respect to the installation of tower and infrastructure and installation of equipment and electronics only pursuant to this Invitation is entitled to claim only such related costs.

### **Part 1 and Part 2**

- 23.2 In the case of vandalism, the Designated Universal Service Providers for the both scope of work for PART 1 and PART 2 shall act accordingly on:
- (a) the process to investigate and verify the damage caused by vandalism and the apportionment of the cost for repair or replacement of any facilities that are vandalized; and
  - (b) the mechanism to minimize the risk of vandalism including reasonable security measures to be implemented at the affected site. The Designated Universal Service Provider for the scope of work in both PARTs may recover costs and expenses for the agreed security measures.
- 23.3 Designated Service Provider for the both scope of work Part 1 and Part 2 shall establish one agreement with the land owner for the duration of the service. During the implementation timeline for Part 1, land rental shall be borne by designated service provider Part 1. Service Provider Part 2 will only resume the land rental upon tower hand over from service provider Part 1. This condition has to be stipulated in the agreement with the land owner, Part 1 and Part 2 during implementation.

### **Part 1**

- 23.4 The Designated Universal Service Providers for the scope of work in PART 1 shall be subject to an obligation to provide, at its own costs, the following services:
- (a) Responsible for facilities in Category A and Category B as stipulated in **Appendix 2** and shall be valid within the warranty period; and
  - (b) The Designated Universal Service Provider is encouraged to invite qualified local sub-contractor(s) to carry out the work of PART 1 at the related site location.

## Part 2

23.5 The Designated Universal Service Providers for the scope of work in PART 2 shall be subject to an obligation to provide the following services:

- (a) provide maintenance and operation support services to ensure that all the facilities provided at sites for both PART 1 (Category B) and PART 2 are continuously available, accessible and in good condition for use in the universal service targets upon the commencement date of PART 2.
- (b) subject to **item 23.5 (a)** as above, the Designated Universal Service Providers shall include in their draft universal service plans the details on the provisioning of maintenance and operation support services for 3 years including but not limited to the response times, hotline numbers, contact personnel, site and compound maintenance and all other relevant information as per **Appendix 8** of the Invitation.
- (c) notwithstanding the above, the Designated Universal Service Providers for the scope of work in PART 2 have to install and maintain their equipments for the provision of network services, cabins, power supply and all its accessories such as fire extinguisher, air conditioning, and electrical system.
- (d) ensure the availability of public cellular services for 24 hours per day, 7 days a week that under normal operating conditions, include the following features at all times (unless otherwise required by the customers):
  - (i) the ability to make and receive voice and to the networks of other licensed service providers;
  - (ii) the ability to make and receive automated national and international voice;
  - (iii) the ability to make calls to emergency numbers, which gives the customer access to emergency services, free of charge;
  - (iv) the ability to make calls to operator for directory assistance, national and international call connection and reporting of service difficulties; and
  - (v) the ability to use data services which includes SMS and internet browsing within 2G and 3G networks.
  - (vi) allow the sharing of towers with other licensed service providers.

## 24 QUALITY OF SERVICE AND RATES

24.1 The Designated Universal Service Providers shall comply with the quality of service standards as provided in any mandatory standards or consumer codes registered under the Communications and Multimedia Act 1998 including but not limited to the various Commission Determinations on the Mandatory Standards for Quality of Service.

- 24.2 The Designated Universal Service Providers must ensure that the services are setup and delivered with high quality of service.
- 24.3 The Designated Universal Service Providers shall comply with the Consumer and Content Codes registered under the Communications and Multimedia Act 1998.
- 24.4 In the event, any abstraction of coverage that includes the signaling level on Quality of Service must be adhere in consistent with the Commission Determinations on the Mandatory Standards for Quality of Service (Public Cellular Service) or such other standards for quality of service on Public Cellular Service as may be required by MCMC.

## **25 TECHNICAL COMPLIANCE**

- 25.1 The Designated Universal Service Providers shall be solely responsible for the correct design and configuration of the network facilities, equipment and services offered as per the submitted Draft Universal Service Plan. Spectrum used for the equipment shall comply with the Standard Radio System Plan (SRSP) and any other relevant standards as and when required by MCMC.
- 25.2 If subsequent modifications or changes are necessary for the network facilities, equipment and services to function in accordance with the specifications, the Designated Universal Service Providers shall bear the additional cost involved in modifying the equipment and no such claims from the USP Fund shall be allowed.

## **26 AUTHORITY APPROVAL**

- 26.1 The Designated Universal Service Providers shall be responsible to obtain the necessary approvals from the state authority, local authority, electrical authority or other relevant authority (if applicable) before commencing the Work.
- 26.2 The Designated Universal Service Providers shall be solely responsible for any failure to obtain the necessary approvals including any additional costs to comply with the authority's requirements.
- 26.3 The Designated Universal Service Provider will be responsible for any additional costs incurred to ensure infrastructure and services continue to be available in the event a change of site location is required as a result of the Designated Universal Service Providers non compliance to the authority's requirements.

## **27 SAFETY**

- 27.1 The Designated Universal Service Providers shall:
  - (a) be responsible to take all reasonable steps at all times to ensure the safety of persons and property at the sites;

- (b) enforce and take all reasonable steps to cause compliance of all safety measures for workmen, contractors and all other persons at the sites as stipulated in all relevant safety-at-work legislation and regulations; and
- (c) indemnify and keep indemnified, protect and defend at its own cost and expense, MCMC and its authorized officers from and against all actions, claims and liabilities arising out of acts done, omission or breach of any conditions in this Invitation by the Designated Universal Service Providers, its employees or its agents.

## 28 IMPLEMENTATION TIMELINE

- 28.1 The maximum time frame to complete the implementation of the entire scope of work in **Appendix 2** (PART 1 and PART 2) shall not exceed a total of 7 months from the date of MCMC's approval based on the following breakdown:
  - (a) PART 1- Implementation Period: maximum of 5 months; and
  - (b) PART 2 - Implementation Period: maximum of 2 months of the Completion date of Part 1.
- 28.2 Each Interested Licensee shall include a proposed detailed implementation timetable in its draft universal service plan.
- 28.3 The Designated Universal Service Provider shall complete the entire scope of PART 1 and PART 2 work **ON** or **BEFORE** the "Date for Completion" as stated in its Approved Universal Service Draft Plan or such extended of time may be allowed under the **Item 29** of this Invitation.

## 29 EXTENSION OF TIME

- 29.1 Notwithstanding anything contained in Regulation 38 of the Regulations, where a time period is specified under these Regulations or in any request by the Commission for an act to be done or a condition to be fulfilled, the Designated Universal Service Provider for scope of PART 1 and PART 2 may request for an extension of time in writing and MCMC may grant such extension of time as it deems fit.
- 29.2 Extension of time may be given to the Designated Universal Service Provider upon requested and subject to confirmation by MCMC if the completion of the entire scope of PART 1 and PART 2 work is likely to be delayed or has been delayed beyond the date for completion as stated in its Approved Universal Service Draft Plan and **Item 28.1** of this Invitation due to any or more of the following events:
  - a) force majeure as provided in **Item 33** of this Invitation; or
  - b) exceptionally inclement weather.

- 29.3 **PROVIDED ALWAYS** that the Designated Universal Service Provider for scope of PART 1 and PART 2 has taken all reasonable steps to avoid or reduce such delay and shall do all that may reasonably required to proceed with the Work.
- 29.4 **PROVIDED THAT** all such delays are not due to any negligence, default or breach of contract at stated in the Letter of Award (LOA) by the Designated Universal Service Provider for scope of PART 1 and PART 2.
- 29.5 **PROVIDED FURTHER** that the Designated Universal Service Provider for scope of PART 1 and PART 2 shall not be entitled to any extension of time where the instructions or acts of MCMC are necessitated by or intended to remedy any default of or breach of contract.

### 30 LIQUIDATED DAMAGES

- 30.1 In the event of a delay on the part of the Designated Universal Service Provider to complete the services in the stipulated time frame, the Designated Universal Service Provider shall pay MCMC liquidated damages at the rate 5% per week, for a maximum of 2 weeks, of the value of the total cost and expenses of the approved universal service draft plan(s). In this respect, implementation time shall be of the essence.

### 31 WARRANTY PERIOD

- 31.1 A Designated Universal Service Provider for Part 1 shall be responsible to provide warranty for the items as stipulated in **Appendix 2** as follows:
- a) Category A for a period of warranty by tower manufacturer; and
  - b) Category B for a period of 12 month
- from the date of completion Work.
- 31.2 As stated in **Item 31.1** above, the obligation for a Designated Universal Service Provider for Part 1 under this warranty is to repair or replace for the items stipulated in **Appendix 2.**

### 32 PERFORMANCE BOND

- 32.1 A Designated Universal Service Provider is required to submit a performance bond upon acceptance of Letter of Award (LoA) in the form of Bank Draft or Bank Guarantee issued by a local licensed financial institution under the Banking and Financial Institutions Act 1989 prior to the execution of written notification of the approval of the universal service plan(s) with MCMC. This performance bond is equivalent in value of 10% of the approved universal service plan(s).
- 32.2 The Performance Bond **shall be kept valid** for a period of **12 months** from the date of completion of the Work.

- 32.3 In the event of a delay to complete the Work upon the expiry of the performance bond, the Designated Universal Service Provider is required to renew and submit a new performance bond with the validity period of 12 months from the date of its expiry.
- 32.4 Notwithstanding the above, in the event that the Designated Universal Service Provider is being terminated under this Invitation hereof the said Performance Bond or any balance thereof shall be forfeited.

### **33 EFFECT OF FORCE MAJEURE**

- 33.1 An “Event of Force Majeure” is an event beyond the control for the delay of scope of PART 1 and PART 2 Work which are:
- a) war (whether declared or not), hostilities, invasion, act of foreign enemies;
  - b) insurrection, revolution, rebellion, military, or usurped power, civil war, terrorism;
  - c) natural catastrophe including but not limited to earthquakes, floods, subterranean spontaneous combustion or any operation of the forces of nature against which an experienced contractor could not reasonably have been expected to take precautions;
  - d) nuclear explosion, radioactive or chemical contamination or radiation (unless caused by the negligence act, omission or default of the workmen, contractors and all other persons at all times during the execution of Works;
  - e) pressure waves caused by aircraft or other devices travelling at sonic or supersonic speeds; and
  - f) riot, commotion or disorder, unless solely restricted to employees of the workmen, contractors and all other persons for the execution of Works.

### **34 QUALITY OF MATERIALS AND EQUIPMENTS**

- 34.1 The Designated Universal Service Provider shall ensure that all items to be used in the provision of universal service in the underserved area shall be of the highest quality, fit for the purpose which they are intended and be free from defects arising out of faulty design, faulty and inferior material or faulty workmanship.

### **35 OMISSIONS OR ERRORS**

- 35.1 The Designated Universal Service Providers are advised to study all terms, conditions and specifications very carefully and to make all necessary site survey, clarification etc., before finalizing their draft universal service plan under the Communications and Multimedia (Universal Service Provision) Regulation 2002 [P.U. (A) 419/2002] (as amended by P.U (A) 258/2008).

- 35.2 The Designated Service Providers shall be solely responsible for all such omissions/errors without any additional cost chargeable to MCMC. MCMC reserves the right not to entertain any request for variation of price(s) or submission of additional quotes for items left out in the original plan on the grounds of lack of knowledge, oversight etc.

### **36 CONDITION OF EQUIPMENTS**

- 36.1 All items supplied shall be genuine, newly manufactured/factory fresh (i.e. not second hand, reconditioned and/or used items).

### **37 SOURCE OF SUPPLY**

- 37.1 The Designated Universal Service Provider shall state the country of origin, place of manufacture and the registered name and address of manufacturer in their draft universal service plans. All equipment proposed is required to be in line with the Malaysian Standards type-approved.

### **38 INSPECTION AND AUDIT**

- 38.1 MCMC shall have the right to inspect and verify that all obligations due from the Designated Universal Service Provider are fully complied with. The inspection and verification of the universal services provisioning may include:

a) Technical Audit

- (i) Conducting a physical verification at the sites that the items and services are delivered according to the quantities, locations, timelines and specifications as contained in the approved universal service plan.

b) Commercial Audit

- (ii) Verifying all relevant supporting documents submitted by the Designated Universal Service Provider in their claims for net universal service costs.

### **39 MONITORING AND REPORTING REQUIREMENT**

- 39.1 The Designated Universal Service Provider shall, from time to time or upon request by MCMC, submit a report on the progress of the implementation of the Approved Universal Service Plan.
- 39.2 Notwithstanding the above, the Designated Universal Service Provider shall submit progress as may be determined by MCMC. The average number of different photographs to be taken shall be sufficient enough to show the progress of the Works but in any case the average number per month shall not be less than five set. The digital qualities photographs in 4R size shall be all titled and dated and keep in album for safe keeping.



## **40 DECLARATION**

- 40.1 The universal service plan shall be signed by the Chief Executive Officer of the Designated Universal Service Provider or any other person authorised by the Company.

## **41 CLARIFICATIONS AND ENQUIRIES**

- 41.1 It is anticipated that some matters may have to be clarified following the evaluation of the submission and during the early stages of installation of the equipment. In this respect, MCMC reserves the right to issue written clarification on the specifications to formalize its requirements more precisely.
- 41.2 By registering its interest and submitting its draft universal service plans, the Designated Universal Service Providers is deemed to consent to the use of any of the information in the draft universal service plans or part thereof by MCMC for any purpose whatsoever.
- 41.3 Should there be a need to seek clarification and additional information regarding this Invitation, all inquiries shall be directed to Secretary of the Tender Committee via email at [tender@cmc.gov.my](mailto:tender@cmc.gov.my) or contact number: **03- 8688 8000**.
- 41.4 All relevant enquiries pertaining to this Invitation should reach MCMC at the latest by 27 January 2015 at 5.00 pm before the closing date for the submission of the relevant draft universal service plan(s).

## **SECTION V COORDINATION OF PART 1 AND PART 2**

### **42 GENERAL**

- 42.1 This section applies where MCMC designates two different Universal Service Providers for Part 1 and Part 2 scope of work for one particular cluster.
- 42.2 The Universal Service Providers for the same cluster shall cooperate in good faith and provide reasonable assistance to each other in a timely manner to enable the implementation of the universal service plans so as to ensure the universal service objective are achieved. This includes sharing relevant information, avoiding unnecessary disputes and resolving differences and disputes promptly.

### **43 CONDITIONS RELEVANT TO SCOPE OF WORK IN PART 1**

- 43.1 The Designated Universal Service Providers for the same cluster shall cooperate at all times to ensure that the facilities to be installed can enable the requirements for the provision of network services set out in **Item 2.4** to be met, particularly in the following areas:
- (a) the Designated Universal Service Provider for the scope of work in PART 1 shall:
    - (i) consult the Designated Universal Service Provider for the scope of work in PART 2 on all relevant matters before commencing the Works; and
    - (ii) promptly notify the Designated Universal Service Provider for the scope of work in PART 2 when the tower and its associated site/facilities are ready for use and allow the Designated Universal Service Provider for PART 2 to install their equipments for the provision of network services.
    - (iii) shall assist the universal service provider for the scope of work in PART 2 in all relevant matters to the commencement of any physical work related to site/access to site/towers.
- 43.2 The relevant matters include but not limited to, the confirmation of suitability of site location (for example, clarity of line of sight).

#### **44 CONDITIONS RELEVANT TO SCOPE OF WORK IN PART 2**

- 44.1 The Designated Universal Service Providers for the same cluster shall cooperate at all times to ensure that network services can be provided consistent with the requirement set out in **Item 2.4**, particularly in the following areas:
- (a) the Designated Universal Service Provider for the scope of work in PART 2 shall promptly attend to issues related to its equipments as and when notified by the universal service provider for the scope of work in PART 1.

## SECTION VI NATURAL DISASTERS

### 45 CONTINUATION OF SERVICES

- 45.1 Since the communication network is quite likely to be affected during disasters, disrupting the communication connectivity (which is the most crucial for response and relief work), this Invitation is made with respect to the Installation of Equipment and Electronics only pursuant to this Invitation subject to **Item 2.4 (b)**, is entitled to claim only such related costs.
- 45.2 The primary terms and requirement are to establish and ensure the public cellular services still **IN-SERVICE**.
- 45.3 Notwithstanding the above and **Item 33**, the Designated Universal Service Providers shall establish a contingency plan as stated in **Item 14.1 (c) (iv)** with the following:
- (a) the Designated Universal Service Providers for the scope of work in PART 1 to perform any work deemed necessary to improve resilience and to protect the infrastructure following the natural disaster such as flood, erosion due to the climate and others.
  - (b) the Designated Universal Service Providers for the scope of work in PART 2 to install and maintain the equipment or to equip with the contingency plan during natural disasters events such as flood period especially at low-lying flood prone areas;
  - (c) the Designated Universal Service Providers for the same cluster (PART 1 and PART 2) shall cooperate in good faith and provide reasonable assistance to each other in a timely manner especially when dealing with natural disasters event such as flooding etc to enable the public cellular coverage is **IN-SERVICE**.

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## APPENDICES

(Which are to be taken and construed as an essential part of this Invitation)

### APPENDIX 1 – LIST OF UNIVERSAL SERVICE TARGETS

#### Cluster 1

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0700	Kedah	Gajah Mati	Kg. Kedundong, M.K Derang	6.1537	100.5343	NA	NA	NA
2	T3_0701	Kedah	Tualang	Kg Tualang, Pokok Sena	6.1077	100.4786	NA	NA	NA
3	T3_0702	Perlis	Titi Tinggi	Kg. Baru Bukit Chabang	6.6046	100.2614	NA	NA	NA
4	T3_0703	Perlis	Titi Tinggi	Jalan Kaki Bukit - Wang Kelian (R15)	6.6443	100.2039	NA	NA	NA
5	T3_0704	Kedah	Naga	Landasan Keretapi Naga	6.2328	100.3574	NA	NA	NA
6	T3_0705	Kedah	Jeram	Landasan Keretapi Jeram	6.2683	100.3425	NA	NA	NA
7	T3_0706	Kedah	Tunjang	Landasan Keretapi Tunjang	6.3074	100.3435	NA	NA	NA
8	T3_0707	Kedah	Ah	Landasan Keretapi Ah	6.3433	100.3180	NA	NA	NA
9	T3_0708	Kedah	Pendang	Kg. Tok Dam	6.0305	100.5580	NA	NA	NA
10	T3_0709	Kedah	Pendang	Kg. Bendang Raja	6.0970	100.5920	NA	NA	NA

**Cluster 2**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0710	Kedah	Sik	Kg. Gulau	6.007191	100.834532	NA	NA	NA
2	T3_0711	Kedah	Sik	Kg. Telaga Batu	5.9186	100.7502	NA	NA	NA
3	T3_0712	Kedah	Yan	Kg. Pisang	5.9350	100.3650	NA	NA	NA
4	T3_0713	Kedah	Yan	Simpang 4 Dulang Kecil	5.8720	100.4060	NA	NA	NA
5	T3_0714	Kedah	Padang Terap	Kg. Bagan	6.1160	100.6960	NA	NA	NA
6	T3_0715	Kedah	Padang Terap	Kg. Lamdin	6.0810	100.6840	NA	NA	NA
7	T3_0716	Kedah	Padang Terap	Kg. Sungai Siput	6.0340	100.6960	NA	NA	NA
8	T3_0717	Kedah	Pendang	Kg. Baloh	5.8930	100.5200	NA	NA	NA
9	T3_0718	Kedah	Pendang	Kg. Sungai Mas	6.0180	100.6520	NA	NA	NA
10	T3_0719	Kedah	Sik	Kg. Kota Aur	6.0870	100.8240	NA	NA	NA

**Cluster 3**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0720	Kedah	Baling	Kg. Sera	5.6130	100.8970	NA	NA	NA
2	T3_0721	Kedah	Baling	Kg. Terabak	5.7650	100.8690	NA	NA	NA
3	T3_0722	Kedah	Baling	Kg. Sri Kerengga	5.9020	100.8960	NA	NA	NA
4	T3_0723	Kedah	Baling	Kg. Tanjung Pari	5.8790	100.8930	NA	NA	NA
5	T3_0724	Kedah	Baling	Kg. Bukit Sebelah	5.8630	100.8930	NA	NA	NA

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
6	T3_0725	Kedah	Baling	Kg. Telok Rambong	5.9190	100.9000	NA	NA	NA
7	T3_0726	Kedah	Baling	Kg. Rambong	5.7070	100.9460	NA	NA	NA
8	T3_0727	Kedah	Baling	Kg. Carok Bemban	5.6490	100.8580	NA	NA	NA
9	T3_0728	Kedah	Baling	Kg. Padang Che Mas	5.6940	100.8860	NA	NA	NA
10	T3_0729	Kedah	Baling	Kg. Bakong (2)	5.7040	100.7930	NA	NA	NA

#### Cluster 4

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0730	Kedah	Baling	Kg. Kejai	5.5440	100.7010	NA	NA	NA
2	T3_0731	Kedah	Baling	Kg. Paya Menora	5.6610	100.6680	NA	NA	NA
3	T3_0732	Kedah	Baling	Kg. Ambing Kuala Pegang	5.6480	100.7760	NA	NA	NA
4	T3_0733	Kedah	Baling	Kg. Padang Dan	5.5730	100.8820	NA	NA	NA
5	T3_0734	Kedah	Baling	Kg. Carok Rambai	5.5900	100.8780	NA	NA	NA
6	T3_0735	Kedah	Baling	Kg. Keledang	5.6150	100.7820	NA	NA	NA
7	T3_0736	Kedah	Baling	Kg. Seniyek Dalam	5.5590	100.9120	NA	NA	NA
8	T3_0737	Kedah	Baling	Kg. Carok Beras	5.6350	100.6910	NA	NA	NA
9	T3_0738	Kedah	Baling	Kg. Padang Setol	5.5800	100.7800	NA	NA	NA
10	T3_0739	Kedah	Baling	Kg. Kuala Kuli, Kg. Ketil	5.5690	100.6520	NA	NA	NA



**Cluster 5**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0740	Pahang	Rompin	Felda Selendang 3	2.7000	103.3710	NA	NA	NA
2	T3_0741	Pahang	Rompin	Pantai Hiburan	2.8080	103.4960	NA	NA	NA
3	T3_0742	Pahang	Rompin	Kg. Batu Tujuh	2.7340	103.5450	NA	NA	NA
4	T3_0743	Pahang	Rompin	Ladang Sawit Felda Selancar	2.6690	102.9890	NA	NA	NA
5	T3_0744	Pahang	Rompin	Felda Keratong 2	2.9150	102.8500	NA	NA	NA
6	T3_0745	Pahang	Pekan	Kg. Serul	3.0670	103.4310	NA	NA	NA
7	T3_0746	Pahang	Kuantan	Jalan Kuantan-Pekan	3.6760	103.2910	NA	NA	NA
8	T3_0747	Pahang	Pekan	Jalan Pekan Nenasi	3.4090	103.4230	NA	NA	NA
9	T3_0748	Pahang	Bera	Jalan Sebertak - Bera Selatan	3.0270	102.7440	NA	NA	NA

**Cluster 6**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0749	Pahang	Kuantan	Felda Bukit Sagu	3.9670	103.1470	NA	NA	NA
2	T3_0750	Pahang	Kuantan	Air Terjun Pandan	3.7910	103.1450	NA	NA	NA
3	T3_0751	Pahang	Pekan	Kilang Sawit Lepar Hilir	3.6440	103.0110	NA	NA	NA
4	T3_0752	Pahang	Maran	Jalan Maran - Jerantut	3.6120	102.7320	NA	NA	NA
5	T3_0753	Pahang	Maran	Kg. Merbau	3.5240	102.8230	NA	NA	NA
6	T3_0754	Pahang	Maran	Kg. Bak Bak	3.5690	102.8120	NA	NA	NA
7	T3_0755	Pahang	Maran	Kg. Pejing	3.5200	102.6950	NA	NA	NA
8	T3_0756	Pahang	Maran	Kg. Paya Pasir	3.5400	102.6230	NA	NA	NA

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
9	T3_0757	Pahang	Maran	Kg. Lubuk Gemuruh	3.4880	102.7430	NA	NA	NA
10	T3_0758	Pahang	Maran	Kg. Teluk Kertau	3.4500	102.6280	NA	NA	NA
11	T3_0759	Pahang	Maran	Laluan Bukit Gaja	3.7390	102.5930	NA	NA	NA

#### Cluster 7

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0760	Pahang	Jenderak	Kg. Dingkir	3.6320	102.4120	NA	NA	NA
2	T3_0761	Pahang	Sanggang	Kg. Lubuk Kawah	3.4870	102.4200	NA	NA	NA
3	T3_0762	Pahang	Sanggang	Kg. Sanggang	3.5280	102.4280	NA	NA	NA
4	T3_0763	Pahang	Lipat Kajang	Kg. Kerai	3.5880	102.4190	NA	NA	NA
5	T3_0764	Pahang	Jerantut	Kg. Lada	3.9610	102.4010	NA	NA	NA
6	T3_0765	Pahang	Jerantut	Kg. Bukit Ketupat	3.8060	102.4080	NA	NA	NA
7	T3_0766	Pahang	Jerantut	Kg. Sungai Juang	3.8310	102.3410	NA	NA	NA
8	T3_0767	Pahang	Lipis	Jalan Sg Koyan - Pos Batau	4.2240	101.7590	NA	NA	NA
9	T3_0768	Pahang	Lipis	Jalan Sg Koyan - Pos Batau 2	4.2230	101.7200	NA	NA	NA
10	T3_0769	Pahang	Lipis	Kg. Jolong	4.2830	101.9170	NA	NA	NA
11	T3_0770	Pahang	Lipis	Sungai Koyan	4.2190	101.8230	NA	NA	NA

**Cluster 8**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0771	Sarawak	Asajaya	Kg. Rebak, Kg. Moyan Laut, Kg. Asajaya	1.5820	110.5900	NA	NA	NA
2	T3_0772	Sarawak	Kuching	Kg. Tanju, Kg. Beliong	1.5790	110.4880	NA	NA	NA
3	T3_0773	Sarawak	Padawan	Kg. Landeh	1.4010	110.2720	NA	NA	NA
4	T3_0774	Sarawak	Kuching	Kg. Loba	1.6950	110.1690	NA	NA	NA
5	T3_0775	Sarawak	Bau	Kg. Kopid, Plaman Segah	1.4230	110.2400	NA	NA	NA
6	T3_0776	Sarawak	Bau	Kg. Padang Pan, Plaman Tupa, Kg. Gumbang	1.3120	110.0560	NA	NA	NA
7	T3_0777	Sarawak	Bau	Kg. Musi, Lebuhraya Bau-Lundu	1.4740	110.1940	NA	NA	NA
8	T3_0778	Sarawak	Bau	Kg. Skibang	1.4170	109.9990	NA	NA	NA
9	T3_0779	Sarawak	Bau	Kg. Suba Buan, Bidi, Taiton	1.3970	110.1190	NA	NA	NA
10	T3_0780	Sarawak	Lundu	Kg. Selampit	1.5450	109.8510	NA	NA	NA

**Cluster 9**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0781	Sarawak	Simunjan	Jalan Utama Tebelu - Sebangsan, Kg. Sungai Ramah	1.5590	110.8150	NA	NA	NA
2	T3_0782	Sarawak	Asajaya	Kg. Jemukan, Kg. Jaie, Kg. Setok	1.5500	110.6930	NA	NA	NA
3	T3_0783	Sarawak	Serian	Gumpey, Tanjung Paoh	1.2640	110.6520	Kg. Tanah Putih	1.21716	110.6278
							Kg. Benat	1.3013	110.6751

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
4	T3_0784	Sarawak	Simunjan	Kg. Pentik, Kg. Batu Mumong	1.3570	110.8040	NA	NA	NA
5	T3_0785	Sarawak	Serian	SK Tanah Merah, Kg. Merang, Kg. Turong	1.3130	110.4920	NA	NA	NA
6	T3_0786	Sarawak	Serian	Kg. Pengkalan Amo, Kg. Kujang Tembawang	0.9810	110.4470	NA	NA	NA
7	T3_0787	Sarawak	Sri Aman	Jalan Rumah Nata, Pantu-Lachau	1.0760	111.1360	NA	NA	NA
8	T3_0788	Sarawak	Sri Aman	Lebuhraya Pan Borneo	1.0680	110.9480	NA	NA	NA

#### Cluster 10

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0789	Sarawak	Betong	Rumah Lubau, Maribong, Batu Linang	1.4990	111.5900	NA	NA	NA
2	T3_0790	Sarawak	Betong	Nanga Padeh, Rumah Maja, Pedanom	1.4180	111.5720	NA	NA	NA
3	T3_0791	Sarawak	Betong	Kg. Bungin, Kg. Sebeban, Kg. Serembang	1.4750	111.4390	NA	NA	NA
4	T3_0792	Sarawak	Lubok Antu	Geligau Ulu, Emplam	1.1850	111.6080	NA	NA	NA
5	T3_0793	Sarawak	Lubok Antu	Pedali Ili, Rumah Lidam	1.2080	111.5410	NA	NA	NA
6	T3_0794	Sarawak	Lubok Antu	Paoh, Langgir	1.0660	111.7010	NA	NA	NA
7	T3_0795	Sarawak	Lubok Antu	Lebuhraya Lubok Antu - Pan Borneo	1.1630	111.7750	NA	NA	NA
8	T3_0796	Sarawak	Sri Aman	Lebuhraya Pan Borneo , RnR Jelukong	1.1730	111.6600	NA	NA	NA
9	T3_0797	Sarawak	Sri Aman	Kg. Stumbin, Kg. Pangkat	1.2870	111.9350	NA	NA	NA

**Cluster 11**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0798	Sarawak	Kanowit	SK Rantau Dilang, Nanga Poi	2.0660	112.2580	NA	NA	NA
2	T3_0799	Sarawak	Kanowit	Rumah Banyan, Kanowit	2.1570	112.1960	NA	NA	NA
3	T3_0800	Sarawak	Kanowit	Jalan Machan - Kanowit	2.0260	112.0750	NA	NA	NA
4	T3_0801	Sarawak	Kanowit	Jalan Julau Sibu, SK Nanga Maong	2.0610	111.9680	NA	NA	NA
5	T3_0802	Sarawak	Kanowit	Nanga Mam, Batu Luking	2.0680	112.2010	NA	NA	NA
6	T3_0803	Sarawak	Kapit	Pelagus-Merit Riverine	2.2000	113.1710	NA	NA	NA
7	T3_0804	Sarawak	Song	Nanga Temalat	2.0240	112.4810	NA	NA	NA
8	T3_0805	Sarawak	Julau	Kg. Entabai	1.7930	111.9240	NA	NA	NA

**Cluster 12**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0806	Sarawak	Dalat	Jalan Oya - Igan	2.8600	111.8000	NA	NA	NA
2	T3_0807	Sarawak	Daro	Kg. Sebako	2.4780	111.3060	NA	NA	NA
3	T3_0808	Sarawak	Daro	Kg. Penipah, Jalan Utama Kg. Penipah-Kampung Salak	2.7000	111.2960	NA	NA	NA
4	T3_0809	Sarawak	Daro	Kg. Jerijih	2.1436	111.1837	NA	NA	NA
5	T3_0810	Sarawak	Daro	Kg. Saai	2.4870	111.3730	NA	NA	NA
6	T3_0811	Sarawak	Daro	Tanjung Pandan	2.4600	111.5890	NA	NA	NA
7	T3_0812	Sarawak	Matu	Kg. Tian, Kg. Bawang, Jalan Matu-Daro	2.6370	111.5240	NA	NA	NA
8	T3_0813	Sarawak	Matu	Kg. Beruan	2.7680	111.5650	NA	NA	NA

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
9	T3_0814	Sarawak	Saratok	SK Engkabang, Jalan Kabong - Gerigat Main	1.9910	111.1980	NA	NA	NA
10	T3_0815	Sarawak	Sarikei	Kg. Muara Selalang	2.0938	111.2102	NA	NA	NA
11	T3_0816	Sarawak	Sibu	Rumah Liang, Rumah Egat, Rumah Jawa	2.3170	111.6390	NA	NA	NA

#### Cluster 13

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0817	Sarawak	Sibu	Lebuhraya Pan Borneo (2)	2.4120	112.1590	NA	NA	NA
2	T3_0818	Sarawak	Sibu	Jalan Bintangor - Sibu	2.1890	111.7600	NA	NA	NA
3	T3_0819	Sarawak	Sibu	Junaco, Jalan Sibu - Selangau	2.2890	112.0330	NA	NA	NA
4	T3_0820	Sarawak	Sibu	Kg. Sebedil	2.5620	111.8170	NA	NA	NA
5	T3_0821	Sarawak	Sibu	Kg. Sawai	2.5040	111.7080	NA	NA	NA
6	T3_0822	Sarawak	Sibu	Kg. Passin	2.6340	111.7060	NA	NA	NA
7	T3_0823	Sarawak	Dalat	Jalan Oya - Dalat	2.8780	111.9400	NA	NA	NA
8	T3_0824	Sarawak	Dalat	Kg. Narub, Kg. Klid	2.6490	112.0530	NA	NA	NA
9	T3_0825	Sarawak	Dalat	Nanga Baoh, Rumah Janting, Rumah Wan	2.5840	112.0480	NA	NA	NA
10	T3_0826	Sarawak	Dalat	Kg. Tanam, Jalan Utama Kg. Tanam - Dalat	2.7730	111.9360	NA	NA	NA

**Cluster 14**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0827	Sarawak	Bintulu	Lebuhraya Bintulu - Samalaju	3.3040	113.1840	NA	NA	NA
2	T3_0828	Sarawak	Tatau	SK Kuala Muput, Rumah Agek, Gawan	2.6220	112.9730	NA	NA	NA
3	T3_0829	Sarawak	Tatau	Rumah Nyandang, Rumah Geron seng, Rumah Jobin	2.8610	112.9300	NA	NA	NA
4	T3_0830	Sarawak	Tatau	Kg. Sangan, Rumah Jepon	2.7650	112.9720	NA	NA	NA
5	T3_0831	Sarawak	Mukah	Rumah Empaling, Rumah Ason, Rh Embi	2.6890	112.2160	NA	NA	NA
6	T3_0832	Sarawak	Mukah	Rumah Menggong, Rh Radin, Ming, Sg Taroh	2.6110	112.2740	NA	NA	NA
7	T3_0833	Sarawak	Mukah	Kg. Teh, Kg. Sisuk, Kg. Tabau	2.8640	112.1610	NA	NA	NA
8	T3_0834	Sarawak	Mukah	Jalan Mukah - Selangau	2.8730	112.3410	NA	NA	NA
9	T3_0835	Sarawak	Mukah	Matadeng, Lebuhraya Mukah-Matadeng	2.9960	112.4690	NA	NA	NA

**Cluster 15**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0836	Sarawak	Marudi	Jalan Sungai Entulang, Bakong	4.1260	114.0210	NA	NA	NA
2	T3_0837	Sarawak	Marudi	Kg. Lubok Nibong	4.1450	114.3130	NA	NA	NA
3	T3_0838	Sarawak	Marudi	Kg. Benawa	4.0320	114.3450	NA	NA	NA
4	T3_0839	Sarawak	Marudi	Long Maro, Ladang Sawit	4.0180	114.3110	NA	NA	NA
5	T3_0840	Sarawak	Marudi	Long Tisam, Rumah Malina	3.4800	114.0410	NA	NA	NA

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
6	T3_0841	Sarawak	Niah Suai	Kg. Keluru Jaya	4.1030	113.9220	NA	NA	NA
7	T3_0842	Sarawak	Niah Suai	Kg. Opak	4.1250	113.8740	NA	NA	NA
8	T3_0843	Sarawak	Niah-Suai	Kg. Sulap Lada, Lebuhraya Coastal	3.9580	113.7640	NA	NA	NA
9	T3_0844	Sarawak	Niah-Suai	Lebuhraya Coastal, Depo Tahanan Imigresen, Kg. Angus	4.0900	113.8190	NA	NA	NA

#### Cluster 16

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0845	Sarawak	Marudi	Kg. Long Luteng	3.5340	114.7510	NA	NA	NA
2	T3_0846	Sarawak	Marudi	Kg. Ba Muboi	3.1790	115.0430	NA	NA	NA
3	T3_0847	Sarawak	Marudi	Apau Nyaring	3.3350	114.8660	NA	NA	NA
4	T3_0848	Sarawak	Limbang	Kg. Tanjung, Loagan Piasau, Jalan Nanga Medamit	4.6070	114.8860	NA	NA	NA
5	T3_0849	Sarawak	Limbang	Long Rayah	4.1500	115.2150	NA	NA	NA
6	T3_0850	Sarawak	Lawas	Kg. Tang Sango A, Sango B, Jalan UtamaTengoa-Trusan	4.6550	115.3300	NA	NA	NA
7	T3_0851	Sarawak	Lawas	Kg. Meragang, Jalan Lawas - Merapok	4.8720	115.4460	NA	NA	NA
8	T3_0852	Sarawak	Lawas	Kg. Long Tengoa	4.6270	115.3300	NA	NA	NA
9	T3_0853	Sarawak	LawaS	Buduk Aru, Buduk Bui, Pa Tawing, Long Langai	4.0270	115.6190	NA	NA	NA
10	T3_0854	Sarawak	Lawas	Jalan Utama Sundar Trusan	4.8530	115.2440	NA	NA	NA
11	T3_0855	Sarawak	Marudi	Bario	3.7420	115.4610	Pa Lungan	3.8079	115.5306
							Pa Umor	3.7314	115.5172



**Cluster 17**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0856	Johor	Pogoh	Kg. Sri Dagang	2.4170	102.9060	NA	NA	NA
2	T3_0857	Johor	Labis	Jalan Labis-Bkt Kepong	2.3600	102.9840	NA	NA	NA
3	T3_0858	Johor	Bekok	Kg. Kudong, Kg. Sri Tembayan	2.3200	103.1910	NA	NA	NA
4	T3_0859	Johor	Paloh	Landasan Keretapi Bekok / Jagoh	2.2460	103.1530	NA	NA	NA
5	T3_0860	Johor	Jementah	Kg. Tebing Tinggi, Kg. Tanah Banjir	2.4630	102.7690	Felcra Tebing Tinggi	2.4402	102.7691
							Kg. Batu Tunggal	2.4722	102.7366
6	T3_0861	Johor	Labis	Kg. Sawah Baru	2.4730	103.0170	NA	NA	NA
7	T3_0862	Johor	Paloh	Kluang - Paloh, Jalan Station (2)	2.1593	103.2290	NA	NA	NA
8	T3_0863	Johor	Niyor	Kluang - Paloh, Jalan Station (1)	2.1047	103.2700	NA	NA	NA

**Cluster 18**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0864	Johor	Sungai Punggor	Jalan Rejo Sari	1.7560	103.1530	NA	NA	NA
2	T3_0865	Johor	Sungai Punggor	Jalan Utama - Kg Simpang 6	1.7880	103.1450	NA	NA	NA
3	T3_0866	Johor	Kulaijaya	Jalan Sengkang-Inas	1.7290	103.5960	NA	NA	NA
4	T3_0867	Johor	Layang-Layang	Ladang Pekan	1.8540	103.5850	NA	NA	NA

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
5	T3_0868	Johor	Kampong Bahru	Jalan Senggarang-Sri Gading Kg. Lukut	1.7800	103.0740	NA	NA	NA
6	T3_0869	Johor	Kota Tinggi	Ulu Sg Rengit	1.8030	103.8960	NA	NA	NA
7	T3_0870	Johor	Sri Gading	Sri Badak	1.8240	103.1660	NA	NA	NA
8	T3_0871	Johor	Chaah Bahru	Jalan Yong Peng - Ladang Paloh	2.0370	103.0140	NA	NA	NA
9	T3_0872	Johor	Chaah Bahru	Ulu Sg Rengit	2.0490	103.0520	NA	NA	NA

#### Cluster 19

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0873	Sabah	Beluran	Pulau Tetabuan	6.0210	117.7060	NA	NA	NA
2	T3_0874	Sabah	Beluran	Jalan Sapi Nangoh-Paitan (1)	6.0110	117.3270	NA	NA	NA
3	T3_0875	Sabah	Beluran	Jalan Sapi Nangoh-Paitan (2)	6.1140	117.2090	NA	NA	NA
4	T3_0876	Sabah	Beluran	Jalan Sapi Nangoh-Paitan (3)	6.4360	117.3410	NA	NA	NA
5	T3_0877	Sabah	Beluran	Jalan Sapi Nangoh-Paitan (4)	6.5080	117.2520	NA	NA	NA
6	T3_0878	Sabah	Beluran	Jalan Sapi Nangoh-Paitan (5)	6.3180	117.3660	NA	NA	NA
7	T3_0879	Sabah	Beluran	Kg. Bukit Besi	5.9840	117.5250	NA	NA	NA
8	T3_0880	Sabah	Beluran	Kg. Klagan	5.9700	117.4500	NA	NA	NA
9	T3_0881	Sabah	Beluran	Kg. Kulampas	6.3090	117.1530	NA	NA	NA
10	T3_0882	Sabah	Beluran	Kg. Obah	5.7180	117.4370	NA	NA	NA
11	T3_0883	Sabah	Beluran	Kg. Ranpek	5.8290	117.5490	NA	NA	NA

**Cluster 20**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0884	Sabah	Semporna	Kg. Larapan Hujung	4.5560	118.5990	Pulai Bait	4.5790	118.5797
2	T3_0885	Sabah	Semporna	Pulau Selakan	4.5760	118.6960	Kg. Lok Allam	4.6239	118.7336
3	T3_0886	Sabah	Semporna	Pulau Matakang	4.5810	118.9480	NA	NA	NA
4	T3_0887	Sabah	Tawau	Menggaris Estate (Sfi Tomani)	4.5050	117.5090	NA	NA	NA
5	T3_0888	Sabah	Nabawan (Pensiangan)	Sapulut Nursery	4.6240	116.7800	NA	NA	NA
6	T3_0889	Sabah	Nabawan (Pensiangan)	Aksi Jaya Bantul Camp	4.3470	116.4280	NA	NA	NA
7	T3_0890	Sabah	Nabawan (Pensiangan)	Batu Punggul	4.5900	116.8560	NA	NA	NA
8	T3_0891	Sabah	Nabawan (Pensiangan)	Kg. Katalirus	4.4550	116.4340	Kg. Sapalian	4.4708	116.5047
9	T3_0892	Sabah	Nabawan	Kg .Seliku	4.4690	116.6070	NA	NA	NA
10	T3_0893	Sabah	Lahad Datu	Embara Budi Mill Sahabat	5.1330	119.0910	NA	NA	NA

**Cluster 21**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0894	Kelantan	Bachok	Kg. Alor Pulai	5.9690	102.3950	NA	NA	NA
2	T3_0895	Kelantan	Pasir Puteh	Kg. Bukit Awang	5.7930	102.4620	NA	NA	NA
3	T3_0896	Kelantan	Pasir Puteh	Kg. Air Tawar	5.9050	102.4620	NA	NA	NA
4	T3_0897	Kelantan	Pasir Puteh	Kg. Gong Betik	5.8270	102.4960	NA	NA	NA
5	T3_0898	Kelantan	Pasir Puteh	Kg. Permatang Gading	5.8420	102.3160	NA	NA	NA

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
6	T3_0899	Kelantan	Peringat	Kg. Tegayong	5.9850	102.3150	NA	NA	NA
7	T3_0900	Kelantan	Pasir Puteh	Kg. Baroh Derham	5.8480	102.4500	NA	NA	NA
8	T3_0901	Kelantan	Pasir Puteh	Kg. Baharu	5.9340	102.2780	NA	NA	NA
9	T3_0902	Kelantan	Pasir Mas	Sg. Keladi	5.9200	102.1510	NA	NA	NA
10	T3_0903	Kelantan	Tanah Merah	Landasan Keretapi Tanah Merah	5.8860	102.1520	NA	NA	NA
11	T3_0904	Kelantan	Pasir Mas	Kg. Guntong	6.0280	102.0500	NA	NA	NA

#### Cluster 22

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0905	Kelantan	Machang	Pacat	5.7380	102.2480	NA	NA	NA
2	T3_0906	Kelantan	Machang	Kg. Temangan Lama	5.6890	102.1470	NA	NA	NA
3	T3_0907	Kelantan	Machang	Kg. Pangkal Mak Wan	5.7980	102.1840	NA	NA	NA
4	T3_0908	Kelantan	Tanah Merah	Kg. Bukit Durian	5.7100	102.0520	NA	NA	NA
5	T3_0909	Kelantan	Machang	Kg. Lalok	5.6810	102.1940	NA	NA	NA
6	T3_0910	Kelantan	Tanah Merah	Kg. Tok Che Dol	5.7760	102.0430	NA	NA	NA
7	T3_0911	Kelantan	Machang	Kg. Kuala Hau	5.6500	102.1160	NA	NA	NA
8	T3_0912	Kelantan	Machang	Banggol Kemian	5.7320	102.1860	NA	NA	NA
9	T3_0913	Kelantan	Tanah Merah	Kg. Air Ralek	5.8330	101.9250	NA	NA	NA
10	T3_0914	Kelantan	Tanah Merah	Kg. Kelisar	5.7860	101.9890	NA	NA	NA
11	T3_0915	Kelantan	Tanah Merah	Kg. Rahmat Dalam	5.7910	101.9020	NA	NA	NA
12	T3_0916	Kelantan	Kuala Krai	Kg. Sg. Bedal	5.6420	102.1550	NA	NA	NA

**Cluster 23**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0917	Kelantan	Kuala Krai	Landasan Keretapi Kuala Krai (1)	5.2810	102.0060	NA	NA	NA
2	T3_0918	Kelantan	Kuala Krai	Kg. K. Setong	5.3140	102.0170	NA	NA	NA
3	T3_0919	Kelantan	Kuala Krai	Landasan Keretapi Kuala Krai (2)	5.3480	102.0090	NA	NA	NA
4	T3_0920	Kelantan	Kuala Krai	Kg. Gris	5.3860	102.0720	NA	NA	NA
5	T3_0921	Kelantan	Kuala Krai	Landasan Keretapi Kuala Krai (3)	5.3600	102.0930	NA	NA	NA
6	T3_0922	Kelantan	Kuala Krai	Landasan Keretapi Kuala Krai (4)	5.3230	102.1770	NA	NA	NA
7	T3_0923	Kelantan	Kuala Krai	Landasan Keretapi Kuala Krai (5)	5.3360	102.2110	NA	NA	NA
8	T3_0924	Kelantan	Kuala Krai	Kg. Tg Batu	5.4070	102.2280	NA	NA	NA
9	T3_0925	Kelantan	Kuala Krai	Landasan Keretapi Kuala Krai (6)	5.4440	102.2320	NA	NA	NA
10	T3_0926	Kelantan	Kuala Krai	Kg Jenal	5.4123	102.0421	NA	NA	NA

**Cluster 24**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0927	Kelantan	Kuala Krai	Landasan Keretapi Kuala Krai (7)	5.2120	102.0140	NA	NA	NA
2	T3_0928	Kelantan	Kuala Krai	Landasan Keretapi Kuala Krai (8)	5.2460	102.0070	NA	NA	NA
3	T3_0929	Kelantan	Gua Musang	Landasan Keretapi Gua Musang (1)	4.7390	102.0110	NA	NA	NA

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
4	T3_0930	Kelantan	Gua Musang	Kg. S. Tupai	4.7750	102.0110	NA	NA	NA
5	T3_0931	Kelantan	Gua Musang	Landasan Keretapi Gua Musang (2)	4.8070	102.0140	NA	NA	NA
6	T3_0932	Kelantan	Gua Musang	Landasan Keretapi Gua Musang (3)	4.9220	101.9790	NA	NA	NA
7	T3_0933	Kelantan	Gua Musang	Landasan Keretapi Gua Musang (4)	5.0830	102.0680	NA	NA	NA
8	T3_0934	Kelantan	Gua Musang	Landasan Keretapi Gua Musang (5)	5.1180	102.0610	NA	NA	NA
9	T3_0935	Kelantan	Gua Musang	Kg. Bertam Baru	5.1490	102.0450	NA	NA	NA
10	T3_0936	Kelantan	Gua Musang	Landasan Keretapi Gua Musang (6)	5.1750	102.0130	NA	NA	NA

#### Cluster 25

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0937	Perak	Ulu Perak	Kg. Orang Asli, Kg Kejar	5.8190	101.4390	NA	NA	NA
2	T3_0938	Perak	Ulu Perak	Kg. Orang Asli Kg Sg. Tiang	5.6910	101.4330	NA	NA	NA
3	T3_0939	Perak	Ulu Perak	Songhoi	5.8180	101.5270	NA	NA	NA
4	T3_0940	Perak	Ulu Perak	Kg. Orang Asli Kg Semelor	5.5020	101.4610	NA	NA	NA
5	T3_0941	Perak	Ulu Perak	Kg. Orang Asli Kg Pulau Tujuh	5.4590	101.4650	NA	NA	NA
6	T3_0942	Perak	Ulu Perak	Kg. Orang Asli Sg. Chiong	5.4260	101.5050	NA	NA	NA
7	T3_0943	Perak	Ulu Perak	Kg. Orang Asli Kg Sg. Tekam	5.4510	101.5390	NA	NA	NA
8	T3_0944	Perak	Ulu Perak	RPS Banun	5.5240	101.4790	NA	NA	NA

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
9	T3_0945	Perak	Ulu Perak	Kg. Semelor, RPS Banun	5.5570	101.4090	NA	NA	NA
10	T3_0946	Perak	Ulu Perak	Kg. Sungai Tebang, RPS Banun	5.4090	101.4930	NA	NA	NA
11	T3_0947	Perak	Ulu Perak	Kg. Selaor, RPS Banun	5.5640	101.6110	NA	NA	NA

#### Cluster 26

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0948	Perak	Ulu Perak	Jalan Gerik-Pasir Puteh	5.5350	101.2710	NA	NA	NA
2	T3_0949	Perak	Ulu Perak	Bukit Asu	5.5790	101.0060	NA	NA	NA
3	T3_0950	Perak	Ulu Perak	Lebuhraya Baling-Grik	5.5030	100.9520	NA	NA	NA
4	T3_0951	Perak	Ulu Perak	Nenering	5.6900	101.0820	NA	NA	NA
5	T3_0952	Perak	Ulu Perak	Belukang Semang	5.5280	100.9950	NA	NA	NA
6	T3_0953	Perak	Kamunting	Landasan Keretapi Kamunting	4.9500	100.7250	NA	NA	NA
7	T3_0954	Perak	Gunong Semanggol	Landasan Keretapi Gunong Semanggol	5.0370	100.6960	NA	NA	NA
8	T3_0955	Perak	Bagan Serai	Landasan Keretapi Bagan Serai	5.0360	100.5750	NA	NA	NA

#### Cluster 27

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0956	Perak	Kampung Buaya	Landasan Keretapi Kg. Buaya (2)	4.7750	100.8960	NA	NA	NA

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
2	T3_0957	Perak	Bidor	Landasan Keretapi Bidor (1)	4.1230	101.2370	NA	NA	NA
3	T3_0958	Perak	Batang Padang	Landasan Keretapi Batang Padang	4.1440	101.2070	NA	NA	NA
4	T3_0959	Perak	Chenderiang	Landasan Keretapi Chenderiang (1)	4.1980	101.1820	NA	NA	NA
5	T3_0960	Perak	Chenderiang	Landasan Keretapi Chenderiang (2)	4.2350	101.1760	NA	NA	NA
6	T3_0961	Perak	Teja	Landasan Keretapi Teja (1)	4.3810	101.0930	NA	NA	NA
7	T3_0962	Perak	Teja	Landasan Keretapi Teja (2)	4.4150	101.0730	NA	NA	NA
8	T3_0963	Perak	Teja	Kopisan Baru	4.4640	101.1590	NA	NA	NA

#### Cluster 28

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0964	Perak	Ulu Bernam Timor Dan Barat	Landasan Keretapi Ulu Bernam	3.7967	101.4241	NA	NA	NA
2	T3_0965	Perak	Sungkai	Landasan Keretapi Sungkai (1)	3.8607	101.3771	NA	NA	NA
3	T3_0966	Perak	Sungkai	Landasan Keretapi Sungkai (2)	3.8889	101.3607	NA	NA	NA
4	T3_0967	Perak	Sungkai	Landasan Keretapi Sungkai (3)	3.9476	101.3287	NA	NA	NA
5	T3_0968	Perak	Sungkai	Landasan Keretapi Sungkai (4)	3.9862	101.3095	NA	NA	NA
6	T3_0969	Perak	Sungkai	Landasan Keretapi Sungkai (5)	4.0148	101.2919	NA	NA	NA
7	T3_0970	Perak	Bidor	Landasan Keretapi Bidor (2)	4.0495	101.2833	NA	NA	NA
8	T3_0971	Perak	Bidor	Landasan Keretapi Bidor (3)	4.0809	101.2703	NA	NA	NA



**Cluster 29**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0972	Negeri Sembilan	Batu Hampar	Kg. Orang Asli Ulu Chembong	2.5800	102.0950	NA	NA	NA
2	T3_0973	Negeri Sembilan	Pasir Panjang	Kg. Orang Asli Bukit Kepong Pasir Panjang	2.4320	101.9180	NA	NA	NA
3	T3_0974	Negeri Sembilan	Pasir Panjang	Kg. Orang Asli Sunggala	2.4270	101.8660	NA	NA	NA
4	T3_0975	Negeri Sembilan	Gadong	Kg. Ulu Kendong	2.4970	102.1950	NA	NA	NA
5	T3_0976	Negeri Sembilan	Pedas	Kg. Anak Ayer Kundur	2.5980	102.0660	NA	NA	NA
6	T3_0977	Negeri Sembilan	Chengkau	Kg. Api-Api	2.5357	102.1709	NA	NA	NA
7	T3_0978	Negeri Sembilan	Kundur	Kg. Kundur Hulu	2.5380	102.0360	NA	NA	NA
8	T3_0979	Negeri Sembilan	Repah	Kg. Tanjung Pisang	2.4930	102.2370	NA	NA	NA
9	T3_0980	Negeri Sembilan	Repah	Kg. Repah	2.5010	102.2410	NA	NA	NA

**Cluster 30**

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0981	Negeri Sembilan	Johol	Kg. Tering Simpang Dangi Johol	2.6350	102.2870	NA	NA	NA
2	T3_0982	Negeri Sembilan	Johol	Kg. Dusun	2.5960	102.2900	NA	NA	NA

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
3	T3_0983	Negeri Sembilan	Kepis	Jalan Kg Ayer Taling	2.6680	102.3500	NA	NA	NA
4	T3_0984	Negeri Sembilan	Gemas	Kampung Londah	2.6208	102.5927	NA	NA	NA
5	T3_0985	Negeri Sembilan	Ayer Kuning	Batang Melaka	2.4800	102.4343	NA	NA	NA
6	T3_0986	Negeri Sembilan	Johol	Kg. Orang Asli Langkap Dangi	2.6280	102.3330	NA	NA	NA
7	T3_0987	Negeri Sembilan	Johol	Kg. Kuala Johol	2.6200	102.2820	NA	NA	NA
8	T3_0988	Negeri Sembilan	Johol	Kg. Tulang Rimau	2.6220	102.3090	NA	NA	NA
9	T3_0989	Negeri Sembilan	Johol	Kg. Kabong	2.6340	102.2500	NA	NA	NA
10	T3_0990	Negeri Sembilan	Pilah	Bukit Perah	2.7060	102.2810	NA	NA	NA

#### Cluster 31

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
1	T3_0991	Negeri Sembilan	Terachi	Hutan Lipur Jeram Toi	2.8110	102.0720	NA	NA	NA
2	T3_0992	Negeri Sembilan	Lenggeng	Kg. Beranang Lenggeng	2.8880	101.9280	NA	NA	NA
3	T3_0993	Negeri Sembilan	Seremban	Kg. Kedat Mantin	2.8080	101.8620	NA	NA	NA

No.	Site ID	State	UST	Coverage Objective 1 /Hub	Latitude	Longitude	Coverage Objective 2 (Spoke)	Latitude	Longitude
4	T3_0994	Negeri Sembilan	Pantai	Kg. Sungai Ngongoi Pantai	2.7780	101.9950	NA	NA	NA
5	T3_0995	Negeri Sembilan	Beranang	Kg. Sg Kembong Hilir	2.8926	101.8053	NA	NA	NA
6	T3_0996	Negeri Sembilan	Labu	Labu (1)	2.7540	101.8231	NA	NA	NA
7	T3_0997	Negeri Sembilan	Labu	Labu (2)	2.7390	101.8756	NA	NA	NA
8	T3_0998	Negeri Sembilan	Labu	Kg. Orang Asli Pelebar Labu	2.7460	101.8230	NA	NA	NA
9	T3_0999	Negeri Sembilan	Terachi	Kg. Ulu Mampas Terachi	2.7540	102.1390	NA	NA	NA

## **APPENDIX 2 – SCOPE OF WORK**

### **A) PART 1**

#### **Installation of Tower and Monopole**

A1. The facilities to be provided shall include the following components:

NO.	CATEGORY	ITEM
1	A	Self Supporting Tower
2		Fall Arrest System
3		Aviation Light
4		Lightning Protection System
5		Anti Climb System
6		Tower Vertical Cable Gantry
7		Tower Structure Foundation
8	B	Concrete Plinth for Cabin / Outdoor BTS and Genset System
9		Basic Grounding and Earthing Systems
10		Civil Works and Drainage System
11		Fencing System & Entrance Gate
12		Access Road

### **B) PART 2: Installation Of Equipment and Electronics ( Radio Access Network (RAN) Sharing Approach)**

B1. The equipment to be provided shall include the following components:

NO.	ITEM
1	Base Transceiver Station (BTS) Equipment
2	Backhaul via Microwave, VSAT or Fiber
3	Antenna and Feeder System
4	Antenna Support System
5	AC Power Supply
6	Feeder Pillar with Meter Panel
7	AC Main Distribution Board Systems – Outdoor or Indoor Type
8	DC Power System Including Back Up Batteries
9	Outdoor Cabinet or Cabin Complete With Accessories
10	Alarm Monitoring System
11	Any Necessary Upgrades or Additional Equipment As Required In The Core Network Inclusive For The Contingency Plan for Natural Disasters Situation Like Flooding and Etc.
12	Horizontal Cable Gantry

B2) Cabin shall be deployed only at collector site. As for spur site, outdoor cabinet shall be used.

- B3) As for the antenna, the required configuration is 3 sector panel antennas with a separation of 60 to 120 degrees between the antennas.
- B4) For satellite links, technical measures must be implemented to handle customer expectation with respect to propagation delay and latency.

## **APPENDIX 3 - REGISTRATION OF INTEREST FORM**

*[To be printed on Interested Licensee's Letterhead]*

### **REGISTRATION OF INTEREST**

To: **Malaysian Communications and Multimedia Commission  
Off Persiaran Multimedia  
63000 Cyberjaya  
(Attn: Secretary of the Tender Committee)**

Date:

Dear Sir,

#### **UNIVERSAL SERVICE PROVISION - REGISTRATION OF INTEREST TO BE UNIVERSAL SERVICE PROVIDER FOR THE PROVISION OF PUBLIC CELLULAR SERVICE UNDER TIME 3 EXTENSION (PHASE 3)**

We refer to the "*Invitation To Register Interest As Universal Service Provider – Ref. no. "MCMC/RDD/PDD(5)/T3\_Extn(P3)/TCA/12/14(13)"*" ("the Invitation") issued by MCMC on [ to insert date ].

We hereby register our interest to be the universal service provider pursuant to Regulation 5(1) of the Communications and Multimedia (Universal Service Provision) Regulations 2002 ("the Regulations") in the following universal service targets :

<b>Cluster</b>	<b>Scope of Work</b>
1. [ Insert the Cluster No.]	[PART 1 and / or PART 2]
2. [ Insert the Cluster No.]	[PART 1 and / or PART 2]
3. [ Insert the Cluster No. ]	[PART 1 and / or PART 2]
4. ....	

We are also aware that pursuant to Regulation 6(1) of the Regulations, we are legally obliged to submit the draft universal service plan(s) for the universal service targets chosen above on or before the time frame specified in the Invitation.

Signed for and on behalf of

.....  
by [ to be signed by the Chief Executive Officer or  
any other person authorized by the Company]

## **APPENDIX 4 – SUMMARY OF LICENSEE INFORMATION**

1. Full Company's Name:
2. Full Address:
3. E-Mail Address:
4. Homepage/Website:
5. Status of Incorporation: Sole Proprietor / Partnership / Enterprise /Sendirian Berhad / Berhad / Private Limited / Limited
6. Date Incorporated:
7. Date of Operation:
8. Paid up Capital (RM):
9. Status of Licences:
  - a) NFP(I): Yes / No
  - b) NSP(I): Yes / No
  - c) ASP(I): Yes / No
10. Collaboration Partner (If applicable) :
11. Number of Employees:
12. Bumiputera Status: Yes / No
13. Financial Details:
  - a) Asset (RM):
  - b) Liability (RM):
  - c) Worth (Asset – Liability) (RM):

### **Note:**

The Interested Licensee is required to enclose :

- the financial statement and audited account for the last 2 or 1 financial year in order to support the above information;
- a copy of individual license and it's conditions;
- track records (Interested Licensees and Collaboration Partner (if applicable)).

## **APPENDIX 5- SUMMARY OF TECHNICAL PROPOSAL**

### **PART 1 - Cluster # (\* If Applicable)**

SITE ID	UST	SITE LOCATIONS (LAT/LONG)		*SPOKE LOCATIONS (LAT/LONG)		SITE CATEGORY FOR TOWER OR HUB (COLLECTOR / SPUR/ STANDALONE)	CABIN SIZE		COMPLETION DATE
							HUB	*SPOKE	

### **PART 2 - Cluster # (\* If Applicable)**

SITE ID	UST	SITE LOCATION (LAT/LONG)		*SPOKE LOCATIONS (LAT/LONG)		AC & DC POWER SUPPLY	SITE CATEGORY (COLLECTOR / SPUR/ STANDALONE)	SITE CAPACITY (BANDWIDTH)		RAN SHARING SOLUTION	INTER OPERABILITY & INTER CONNECTION	NECESSARY UPGRADES OR ADDITIONAL EQUIPMENT (IF REQUIRED)	COMPLETION DATE
								HUB	*SPOKE				



## **APPENDIX 6(A) - SUMMARY OF FINANCIAL PROPOSAL PART 1**

### **PART 1 – Cluster # (\* If Applicable)**

SITE ID	UST	GENERAL & PRELIMINARIES		TOWER/POLE & ANCILLARIES		SITE INFRASTRUCTURE AND ANCILLARIES		ADDITIONAL WORKS (if any)		NATURAL DISASTER (if any)		TOTAL (RM)
		HUB	SPOKE	HUB	SPOKE	HUB	SPOKE	HUB	SPOKE	HUB	SPOKE	
<b>TOTAL FOR CLUSTER #</b>												
<b>TOTAL AMOUNT (INCLUDING TAXES)</b>												

We hereby conclude this is the final cost for Part 1 Cluster # :

\_\_\_\_\_  
CFO / Authorized Board of Members  
Company stamp

*\*Please do not change template of Summary.*

## **APPENDIX 6(B) - SUMMARY OF FINANCIAL PROPOSAL PART 2**

### **PART 2 – Cluster # (\* If Applicable)**

SITE ID	UST	GENERAL & PRELIMINARIES	EQUIPMENT & SYSTEM	BACKHAUL		ANTENNA SYSTEM		DC POWER SUPPLY		UPGRADING / ADDITIONAL EQUIPMENT	EQUIPEMENT SHELTER & ALARM SYSTEM		AC POWER SUPPLY		INTEROPERABILITY COST	TOTAL (RM)
				HUB	*SPOKE	HUB	*SPOKE	HUB	*SPOKE		HUB	*SPOKE	HUB	*SPOKE		
<b>AMOUNT FOR CLUSTER #</b>																
<b>TOTAL AMOUNT (INCLUDING TAXES)</b>																

We hereby conclude this is the final cost for Part 2 Cluster # :

\_\_\_\_\_  
CFO / Authorized Board of Members  
Company stamp

*\*Please do not change the template of Summary.*

## **APPENDIX 7 - DETAILS OF FINANCIAL PROPOSAL (PER SITE)**

### **PART 1**

**CLUSTER:**

**UST:**

**SITE ID:**

### **Bill of Quantity for Tower**

ITEM	DESCRIPTION		UNIT	QTY	UNIT COST	TOTAL (RM)
TOWER - 76m Height Tower (20m x 18m footprint)						
1. GENERAL & PRELIMINARIES						
A	Insurance					
	1	Provision for Insurance (during construction and warranty period)	LS			
B	Site Planning & Design					
	1	Site Survey	LS			
	2	Services of licensed surveyor for setting out of the Site Boundary	LS			
	3	Soil investigation	LS			
	4	C&S, M&E Consulting Engineer Services & Design including PE Endorsement	LS			
C	Site Acquisition					
	1	Deposits and preliminary rental charges to landowner during implementation period (prior to official site handover to PART 2)	LS			
D	Permitting & Authority Fees					
	1	OSA Fees, local authority fees/charges, permit fees, assessment fees and other fees deemed necessary.	LS			
E	Project Management and others					
	1	Monthly Reporting & Meetings	LS			
	2	Site Management including Site Monitoring and Inspection	LS			
	3	Signboard (Material to be made from wood as per JKR specifications, 3 ft height above ground)	Nos			
TOTAL ITEM 1: GENERAL& PRELIMINARIES						

ITEM	DESCRIPTION		UNIT	QTY	UNIT COST	TOTAL (RM)
2. TOWER & ACCESSORIES						
A	Tower Supply					
	1	Supply, Delivery & Install 3 Legged Tower inclusive of:	LS			
	a	Vertical Gantry				
	b	Fall Arrest System				
	c	Stainless Steel Lightning Arrestor (3m x 16mm dia)				
	d	Anti-Climb devices consisting of cage & barb wire				
	e	Brackets for Aviation lights & Lightning Arrestor				
	f	Tower Erection				
	g	Paint				
	h	Delivery				
	i	PE Endorsement				
B	Tower Earthing & Plates					
	1	To supply, install and commission tower grounding system:				
	a	Cu ground plate size 1200mm x 1200mm x 3mm thick at each leg	pc			
	b	Supply and install 355mm x 100mm x 6mm Cu busbar c/w 50mm pvc cable in 50mm diameter GI pipe at 3 levels of the tower	pc			
	c	70mm Cu Cable with one end cadweld to tower leg with expose cable run in 50mm diameter galvanised iron pipe and the other and cadweld to the cu plate	LS			
	d	Inspection Pit Type C	Nos			
C	Tower Foundation					
	Reinforced Concrete Pad Foundation.To supply manpower, machineries, necessary tools and equipments for normal foundation excavation up to 3m deep, place formworks, timbering(if necessary), anchor bolt setting as per requirement, supply and placing of minimum G30 concrete complete with reinforcement bars, dewatering, back filling, compaction including all necessary works.					
	1	Excavation for foundation maximum depth not exceeding 4m deep, backfill and remove surplus spoil and deposit, spread and level on site as specified	m3			
	2	Concrete:				
	a	Lean Concrete Grade 15P for foundation base - 75mm	M2			

ITEM	DESCRIPTION		UNIT	QTY	UNIT	TOTAL
					COST	(RM)
	b	Concrete Grade 30P as specified in Foundation, Stump & Tie Beam	m3			
	3	Steel Bars in reinforcement to concrete works generally including all cutting, bending and placing in position				
	a	High Tensile - Pad Footing, Stump & Tie Beam	Kg.			
	b	Mild Steel - Stump & tie Beam	Kg.			
	4	Sawn Formwork				
	a	To sides of foundation, stump & tie beam	M2			
<b>TOTAL ITEM 2: TOWER &amp; ACCESSORIES</b>						
<b>3. SITE INFRASTRUCTURE AND ANCILLARIES</b>						
<b>A</b>	<b>Site Clearance</b>					
	1	Excavate oversite average 150mm deep to level off formation or reduce level.	M2			
<b>B</b>	<b>Concrete Base</b>					
	1	200mm thk hardcore, one layer BRC A7 and 100mm thk grade 25 concrete over site - platform 20m x 18m				
	2	200mm Hardcore	M3			
	3	100mm Concrete Grade 25P	M3			
	4	BRC A7	M2			
	5	Inspection Pit Type C	Nos			
<b>C</b>	<b>Concrete Plinth For</b>					
	1	<b>Cabin / Outdoor base (size: 5.4m x 4.8m x 0.60m thk)</b>				
	a	50mm thk lean Concrete Grade 15P for foundation base – 5.4 x 4.8 x 0.05	M2			
	b	400mm thk reinforced concrete (G30) – from platform level	M3			
	c	To supply and lay 1 layer BRC A7 reinforcement for concrete platform	M2			
	d	Sawn formwork	M2			
	e	100m Dia, 1W PVC Duct	Nos			
	f	Inspection Pit Type A	Nos			
	g	450mm x 450mm Electrical Pit c/w retractable lifting handle (outdoor with hinges), inclusive necessary 100mm diameter PVC duct	Nos			

ITEM	DESCRIPTION		UNIT	QTY	UNIT	TOTAL
					COST	(RM)
	2	<b>2 x Genset c/w skid tank (7m x 3m x 0.6m thk)</b>				
	a	50mm thk lean Concrete Grade 15P for foundation base	M2			
	b	200mm thk.Reinforced concrete (G30) – from platform level	M3			
	c	To supply and lay 1 layer BRC A7 reinforcement for concrete platform	M2			
	d	Sawn formwork	M2			
	e	Inspection Pit Type B	Nos			
D	<b>Premix Area / Rc Concrete (*To fill either Item 1 or Item 2)</b>					
	*1	1st 30m Premix Access Road - 3m wide (1st 6m = 4.8m wide)				
	a	50mm thick sand spread, levelled and compacted to falls and chambers with an 8-ton roller	M2			
	b	200mm (finished) thick crusher run base course	M2			
	c	50mm asphaltic concrete wearing course	M2			
	d	Bituminous binder	M2			
	e	75mm thick premix	M2			
	*2	1st 30m RC Concrete Road - 3m wide				
	a	100mm hardcore	M2			
	b	50mm lean concrete Grade 15P	M2			
	c	100mm Concrete Grade 20P	M2			
	d	1 layer mesh fabric A6	M2			
E	<b>Perimeter Drainage</b>					
	1	300mm width block drain thk including all necessary excavation	m			
	2	To supply, excavate and construct 450mm x 450mm brickwall sump at as per drawings at suitable discharge point. The rate include lean concrete, concrete base complete with 1 layer cement mortar rendering to exposed brickwall as per drawings	Nos			

ITEM	DESCRIPTION		UNIT	QTY	UNIT	TOTAL
					COST	(RM)
	3	Soakway pit 1200mm dia 1500mm deep c/w retractable cover (where necessary)	Nos			
F	<b>Fence And Gate</b>					
	1	Supply and install 2600mm high 50mm x 50mm x 3.3/2.8mm PVC coated galvanised mesh chain link fencing with 75mm x 75mm x 5mm thick angle and 50mm x 50mm x 5mm thick bracing post both embedded in and including 450mm x 450mm x 600mm deep concrete footing	m			
	2	Extra Over for 4 strands barb wire on top	m			
	3	Supply and install 2600mm (H) x 4000mm (W) 50 x 50 SWG 10 galvanised mild steel chain link fencing gate in two leaf complete, including 2 bolts with PVC pocket sleeves, stainless steel h/duty padlocks, hinges, concrete foundation, 500mm high bard wire and ets including all other related items.	LS			
	4	Supply and install 3600mm (H) x 150mm (ø) x 6mm (thk) steel pipe gate post both embedded in infill with concrete	LS			
G	<b>Turfing</b>					
	1	1500mm closed turfing to surrounding fencing at site level (75mm thk)	M2			
H	<b>Basic Grounding And Earthing System</b>					
	1	To supply and install common earthing system (compound area) c/w copper tape, copper rod, G.I pipe 50mm and cadweld jointing	Nos			
	2	To supply and install common earthing system (plinth) c/w copper tape, 3 units of MGB, vertical G.I pipe 50mm infill with concrete and cadweld jointing	Nos			
	3	300mm x 300mm Heavy Duty Earth Chamber	Nos			
	4	To supply and install earthing system for feeder c/w vertical 50mm GI pipe infill with concrete, copper cable, MGB and proper connection to the common earthing system using copper clamp with hidrolic cramping	Nos			
I	<b>Compound Lighting</b>					
	1	Supply and install 6m hot dipped Galvanised column c/w 250W floodlight 2nos per each c/w accessories) and u/g cable 6mm².	Nos			

ITEM	DESCRIPTION		UNIT	QTY	UNIT	TOTAL
					COST	(RM)
J	<b>Aircraft Warning Light</b>					
	1	Supply and install Solar LED Aircraft Warning Lights c/w ultra high intensity 100,000 hours life expectancy, equipped with built-in back battery.	Nos			
<b>TOTAL ITEM 3: SITE INFRASTRUCTURE AND ANCILLARIES</b>						
<b>4. ADDITIONAL WORKS (to fill if necessary)</b>						
A	<b>Site Clearance</b>					
	1	Excavate oversite average 150mm deep to level off formation or reduce level.	M2			
B	<b>RC Piling</b>					
	1	Allow for provision of all necessary piling equipment	LS			
	2	Supply 200mm x 200mm RC pile	M			
	3	Handle, transport, pitch and drive	M			
	4	12.7mm (overall) butt weld connection 1.0m girth between edges of mild steel extension head and based cap plates including coated heavily with bituminous compound.	Nos			
	5	Cut off and remove surplus length of 200mm x 200mm precast concrete pipe and strip off pile head, bend back reinforcement for connection as specified.	Nos			
C	<b>Earthwork - Cutting and Filling</b>					
	1	Excavation and removal of unsuitable material to contractor's own dumping ground within 10km from site - by mechanical equipment.	M3			
	2	Imported Earthfill from contractor's own source within 10km from site including unloading in filling areas	M3			
	3	Imported sandfill ditto	M3			
	4	Spread level and compact excavated earth/imported earth in layers as specified in filling areas.	M3			
D	<b>Access Road Beyond 30m length from gate</b>					
	1	Crusher Run Road				
	a	300mm thk crusher run spread, levelled and compacted with 8-ton roller	M2			
	2	Premix Road				
	a	50mm thick sand spread, levelled and compacted to falls and chambers with an 8-ton roller	M2			
	b	200mm (finished) thick crusher run base course	M2			
	c	Tack coat	M2			



ITEM	DESCRIPTION		UNIT	QTY	UNIT	TOTAL
					COST	(RM)
	d	60mm thick binder course	M2			
	e	50mm thick wearing course	M2			
	3	Reinforced Concrete Road				
	a	100mm hardcore	M2			
	b	50mm lean concrete Grade 15P	M2			
	c	100mm Concrete Grade 20P	M2			
	d	1 layer mesh fabric A6	M2			
E	<b>Rock Excavation which requires the use of wedges, level or compressor drills and removal of unsuitable material to contractor's own dumping ground within 10km from site.</b>					
	1	Rock excavation	M3			
F	<b>Slope Protection</b>					
	1	Close turfing	M2			
	2	Gabion Wall	M3			
	3	RC Retaining Wall.	M3			
G	<b>Cutting Tree</b>					
	1	Cut down and clear away from site trees exceeding 300mm but not exceeding 600mm girth at 1m above ground level including grubbing up roots and filling up holes with approved earth.	Nos			
	2	Ditto exceeding 600mm but not exceeding 1200mm girth ditto	Nos			
	3	Ditto exceeding 1200mm but not exceeding 1800mm girth ditto	Nos			
H	<b>Drainage (Access road)</b>					
	1	300mm (W)x 300mm (D) precast or cast in situ concrete V shape block drain Grade 20	M			
	2	Cattle trap	Nos			
	3	To supply, excavate and construct 450mm (W) x 450mm (D) brickwall sump (where necessary)	Nos			
I	<b>Culvert</b>					
	1	300mm diameter precast concrete pipe culvert type "S" and jointing with and including precast concrete collars in cement mortar (1:1) including forming fillet all around at each end of collars.	M			
	2	600mm ditto	M			
	3	900mm ditto	M			
	4	1200mm ditto	M			
J	<b>Double handing charges - subject to site condition</b>					
	1	only applicable for sites not accessible by land				
<b>TOTAL ITEM 4: ADDITIONAL WORKS</b>						

ITEM	DESCRIPTION	UNIT	QTY	UNIT	TOTAL
				COST	(RM)
SUMMARY (HUB)					
1	TOTAL PRELIMINARIES				
2	TOTAL TOWER AND ACCESSORIES				
3	TOTAL SITE INFRASTRUCTURE AND ANCILLARIES				
4	TOTAL ADDITIONAL WORK				
	FINAL TOTAL PART 1 (HUB) (INCLUDING TAXES)				

### Bill of Quantity for Spoke (To Fill If Applicable)

ITEM	DESCRIPTION		UNIT	QTY	UNIT	TOTAL
					COST	(RM)
SPOKE - 24m Monopole Antenna Support Structure (12m x 12m footprint)						
1. GENERAL & PRELIMINARIES						
A	General					
	1	Provision for Insurance during construction period	LS	1		
B	Site Planning & Design					
	1	Site Survey	LS	1		
	2	Services of licensed surveyor for setting out of the Site Boundary	LS	1		
	3	Soil investigation	LS	1		
	4	C&S, M&E Consulting Engineer Services & Design including PE Endorsement	LS	1		
C	Site Acquisition					
	1	Deposits and Preliminary rental charges to landowner (prior to official site handover to PART 2) - maximum 3 months + 2 months deposit	LS	1		
D	Project Management & Others					
	1	Monthly Reporting & Meetings	LS	1		
	2	Site Management Including Site Monitoring and Inspection	LS	1		
	3	Signboard ((Material to be made from wood as per JKR specifications, 3 ft height above ground)	Nos	1		

ITEM	DESCRIPTION		UNIT	QTY	UNIT COST	TOTAL (RM)
E	<b>Permitting &amp; Authority Fees</b>					
	1	OSA Fees, Local Authority fee/charges, permit fees, assessment fees and other fees deemed necessary.	LS	1		
<b>TOTAL ITEM 1: GENERAL &amp; PRELIMINARIES</b>						
<b>2. POLE &amp; ACCESSORIES</b>						
A	<b>Pole Supply</b>					
	1	Supply, Delivery & Install 24m monopole structure inclusive of:	LS	1		
	a	Vertical Gantry				
	b	Fall Arrest System				
	c	Stainless Steel Lightning Arrestor (4m x 16mm dia)				
	d	Anti-Climb devices consisting of cage & barb wire				
	e	Brackets for Aviation lights & Lightning Arrestor				
	f	Pole Erection				
	g	Paint (HDG)				
	h	Delivery				
	i	PE Endorsement				
B	<b>Pole Earthing &amp; Plates</b>					
	1	To supply, install and commission pole grounding system:				
	a	Cu ground plate size 1200mm x 1200mm x 3mm thick at each leg	pc	1		
	b	Supply and install 355mm x 100mm x 6mm Cu busbar c/w 50mm pvc cable in 50mm diameter GI pipe at 3 levels of the pole	pc	3		
	c	70mm Cu Cable with one end cadweld to tower leg with expose cable run in 50mm diameter galvanised iron pipe and the other and cadweld to the cu plate	LS	1		
	d	Inspection Pit Type C	Nos	1		

ITEM	DESCRIPTION		UNIT	QTY	UNIT	TOTAL
					COST	(RM)
C	<b>Pole Foundation</b>					
	Reinforced Concrete Pad Foundation.To supply manpower, machineries, necessary tools and equipments for normal foundation excavation up to 3m deep, place formworks, timbering(if necessary), anchor bolt setting as per requirement, supply and placing of minimum G30 concrete complete with reinforcement bars, dewatering, back filling, compaction including all necessary works.					
	1	Excavation for foundation maximum depth not exceeding 4m deep, backfill and remove surplus spoil and deposit, spread and level on site as specified	m3			
	2	Concrete:				
	a	Lean Concrete Grade 15P for foundation base - 75mm	M2			
	b	Concrete Grade 30P as specified in Foundation, Stump & Tie Beam	m3			
	3	Steel Bars in reinforcement to concrete works generally including all cutting, bending and placing in position				
	a	High Tensile - Pad Footing, Stump & Tie Beam	Kg.			
	b	Mild Steel - Stump & tie Beam	Kg.			
	4	Sawn Formwork				
	a	To sides of foundation, stump & tie beam	M2			
<b>TOTAL ITEM 2: POLE &amp; ACCESSORIES</b>						
<b>3. SITE INFRASTRUCTURE AND ANCILLARIES</b>						
A	<b>Site Clearance</b>					
	1	Excavate oversite average 150mm deep to level off formation or reduce level.	M2			
B	<b>Concrete Base</b>					
	1	200mm thk hardcore, one layer BRC A7 and 100mm thk grade 25 concrete over site - platform 12m x 12m				
	2	200mm Hardcore	M3			
	3	100mm Concrete Grade 25P	M3			
	4	BRC A7	M2			
	5	Inspection Pit Type C	Nos			

ITEM	DESCRIPTION		UNIT	QTY	UNIT	TOTAL
					COST	(RM)
C	<b>Concrete Plinth For</b>					
	1	<b>Outdoor base (size: 3m x 5m x 0.40m thk)</b>				
	a	50mm thk lean Concrete Grade 15P for foundation base – 3 x 5 x 0.4	M2			
	b	400mm thk reinforced concrete (G25) – from platform level	M3			
	c	To supply and lay 1 layer BRC A7 reinforcement for concrete platform	M2			
	d	Sawn formwork	M2			
	e	100m Dia, 1Way PVC Duct	Nos			
	f	Inspection Pit Type A	Nos			
	g	450mm x 450mm Electrical Pit c/w retractable lifting handle (outdoor with hinges), inclusive necessary 100mm diameter PVC duct	Nos			
	2	<b>2 x Genset c/w skid tank (7m x 3m x 0.4m thk)</b>				
	a	50mm thk lean Concrete Grade 15P for foundation base	M3			
	b	200mm thk. Reinforced concrete (G25) – from platform level	M3			
	c	To supply and lay 1 layer BRC A7 reinforcement for concrete platform	M2			
	d	Sawn formwork	M2			
	e	Inspection Pit Type B	Nos			
D	<b>Premix Area / Rc Concrete (*To fill either Item 1 or Item 2)</b>					
	*1	1st 30m Premix Access Road - 3m wide (1st 6m = 4.8m wide)				
	a	50mm thick sand spread, levelled and compacted to falls and chambers with an 8-ton roller	M2			
	b	200mm (finished) thick crusher run base course	M2			
	c	50mm asphaltic concrete wearing course	M2			
	d	Bituminous binder	M2			
	e	75mm thick premix	M2			
	*2	1st 30m RC Concrete Road - 3m wide (1st 6m = 4.8m wide)				
	a	100mm hardcore	M2			
	b	50mm lean concrete Grade 15P	M2			
	c	100mm Concrete Grade 20P	M2			
	d	1 layer mesh fabric A6	M2			

ITEM	DESCRIPTION		UNIT	QTY	UNIT	TOTAL
					COST	(RM)
E	<b>Perimeter Drainage</b>					
	1	300mm width block drain thk including all necessary excavation	m			
	2	To supply, excavate and construct 450mm x 450mm brickwall sump at as per drawings at suitable discharge point. The rate include lean concrete, concrete base complete with 1 layer cement mortar rendering to exposed brickwall as per drawings	Nos	1		
	3	Soakway pit 1200mm dia 1500mm deep c/w retractable cover (where necessary)	Nos	1		
F	<b>Fence And Gate</b>					
	1	Supply and install 2700mm high 50mm x 50mm x 3.3/2.8mm PVC coated galvanised mesh chain link fencing with 75mm x 75mm x 5mm thick angle and 50mm x 50mm x 5mm thick bracing post both embedded in and including 450mm x 450mm x 600mm deep concrete footing	m			
	2	Extra Over for 4 strands barb wire on top	m			
	3	Supply and install 2600mm (H) x 4000mm (W) 50 x 50 SWG 10 galvanised mild steel chain link fencing gate in two leaf complete, including 2 bolts with PVC pocket sleeves, stainless steel h/duty padlocks, hinges, concrete foundation, 500mm high bard wire and ets including all other related items.	LS	1		
	4	Supply and install 3600mm (H) x 150mm (ø) x 6mm (thk) steel pipe gate post both embedded in infill with concrete	LS	1		
G	<b>Turfing</b>					
	1	1500mm Wide closed turfing to surrounding fencing at site level (75mm thk)	M2			
H	<b>Basic Grounding And Earthing System</b>					
	1	To supply and install common earthing system (compound area) c/w copper tape, copper rod, G.I pipe 50mm and cadweld jointing	Nos			
	2	To supply and install common earthing system (plinth) c/w copper tape, 3 units of MGB, vertical G.I pipe 50mm infill with concrete and cadweld jointing	Nos			
	3	300mm x 300mm Heavy Duty Earth Chamber ( 5 tone)	Nos			
	4	To Supply and Install 100mm dia G.I pipe buried underground at compound area	m			

ITEM	DESCRIPTION		UNIT	QTY	UNIT	TOTAL
					COST	(RM)
	5	To supply and install earthing system for feeder c/w vertical 50mm GI pipe infill with concrete, copper cable, MGB and proper connection to the common earthing system using copper clamp with hidrolic cramping	Nos	1		
I	<b>Compound Lighting</b>					
	1	Supply and install 6m hot dipped Galvanised column c/w 250W floodlight 2nos per each c/w accessories) and u/g cable 6mm <sup>2</sup> .	Nos	2		
J	<b>Aircraft Warning Light</b>					
	1	Supply and install Solar LED Aircraft Warning Lights c/w ultra high intensity 100,000 hours life expectancy, equipped with built-in back battery.	Nos	2		
<b>TOTAL ITEM 3: SITE INFRASTRUCTURE AND ANCILLARIES</b>						
<b>4. ADDITIONAL WORKS (to fill if necessary)</b>						
A	<b>Site Clearance</b>					
	1	Excavate oversite average 150mm deep to level off formation or reduce level.	M2			
B	<b>RC Piling</b>					
	1	Allow for provision of all necessary piling equipment	LS			
	2	Supply 200mm x 200mm RC pile	M			
	3	Handle, transport, pitch and drive	M			
	4	12.7mm (overall) butt weld connection 1.0m girth between edges of mild steel extension head and based cap plates including coated heavily with bituminous compound.	Nos			
	5	Cut off and remove surplus length of 200mm x 200mm precast concrete pipe and strip off pile head, bend back reinforcement for connection as specified.	Nos			
C	<b>Earthwork - Cutting and Filling</b>					
	1	Excavation and removal of unsuitable material to contractor's own dumping ground within 10km from site - by mechanical equipment.	M3			

ITEM	DESCRIPTION		UNIT	QTY	UNIT	TOTAL
					COST	(RM)
	2	Imported Earthfill from contractor's own source within 10km from site including unloading in filling areas	M3			
	3	Imported sandfill ditto	M3			
	4	Spread level and compact excavated earth/imported earth in layers as specified in filling areas.	M3			
D	<b>Access Road Beyond 30m length from gate</b>					
	1	Crusher Run Road				
	a	300mm thk crusher run spread, levelled and compacted with 8-ton roller	M2			
	2	Premix Road				
	a	50mm thick sand spread, levelled and compacted to falls and chambers with an 8-ton roller	M2			
	b	200mm (finished) thick crusher run base course	M2			
	c	Tack coat	M2			
	d	60mm thick binder course	M2			
	e	50mm thick wearing course	M2			
	3	Reinforced Concrete Road				
	a	100mm hardcore	M2			
	b	50mm lean concrete Grade 15P	M2			
	c	100mm Concrete Grade 20P	M2			
	d	1 layer mesh fabric A6	M2			
E	<b>Rock Excavation which requires the use of wedges, level or compressor drills and removal of unsuitable material to contractor's own dumping ground within 10km from site.</b>					
	1	Rock excavation	M3			
F	<b>Slope Protection</b>					
	1	Close turfing	M2			
	2	Gabion Wall	M3			
	3	RC Retaining Wall.	M3			
G	<b>Cutting Tree</b>					
	1	Cut down and clear away from site trees exceeding 300mm but not exceeding 600mm girth at 1m above ground level including grubbing up roots and filling up holes with approved earth.	Nos			
	2	Ditto exceeding 600mm but not exceeding 1200mm girth ditto	Nos			
	3	Ditto exceeding 1200mm but not exceeding 1800mm girth ditto	Nos			



ITEM	DESCRIPTION		UNIT	QTY	UNIT	TOTAL
					COST	(RM)
H	Drainage (Access road)					
	1	300mm (W)x 300mm (D) precast or cast in situ concrete V shape block drain Grade 20	M			
	2	Cattle trap	Nos			
	3	To supply, excavate and construct 450mm (W) x 450mm (D) brickwall sump (where necessary)	Nos			
I	Culvert					
	1	300mm diameter precast concrete pipe culvert type "S" and jointing with and including precast concrete collars in cement mortar (1:1) including forming fillet all around at each end of collars.	M			
	2	600mm ditto	M			
	3	900mm ditto	M			
	4	1200mm ditto	M			
J	Double handing charges - subject to site condition					
	1	only applicable for sites not accessible by land				
TOTAL ITEM 4 : ADDITIONAL WORK						
SUMMARY (SPOKE)						
	1	TOTAL PRELIMINARIES				
	2	TOTAL TOWER AND ACCESSORIES				
	3	TOTAL SITE INFRASTRUCTURE AND ANCILLARIES				
	4	TOTAL ADDITIONAL WORK				
FINAL TOTAL PART 1 (SPOKE) (INCLUDING TAXES)						

**Bill of Quantity for Site Infrastructure for Natural Disaster for Tower (To Fill If Applicable)**

ITEM	DESCRIPTION		UNIT	QTY	UNIT COST	TOTAL (RM)	
TOWER							
A	Concrete Plinth For						
	1	Cabin / Outdoor base (size: 5.4m x 4.8m x 0.60m thk)					
	A	50mm thk lean Concrete Grade 15P for foundation base – 5.4 x 4.8 x 0.05	M2				
	B	600mm thk reinforced concrete (G30) – from platform level	M3				
	C	To supply and lay 1 layer BRC A7 reinforcement for concrete platform	M2				
	D	Sawn formwork	M2				
	E	100m Dia, 1W PVC Duct	Nos				
	F	Inspection Pit Type A	Nos				
	G	To supply and install “I” beam base (size: 4m x 0.2m x 0.2m x 0.01m thk)	Nos				
	H	Concrete steps	Nos				
	I	450mm x 450mm Electrical Pit c/w retractable lifting handle (outdoor with hinges), inclusive necessary 100mm diameter PVC duct	Nos				
	2	2 x Genset c/w skid tank (7m x 3m x 0.6m thk)					
	A	50mm thk lean Concrete Grade 15P for foundation base	M2				
	B	600mm thk.Reinforced concrete (G30) – from platform level	M3				
	C	To supply and lay 1 layer BRC A7 reinforcement for concrete platform	M2				
	D	Sawn formwork	M2				
	E	Inspection Pit Type B	Nos				
	B	Basic Grounding And Earthing System					
		1	To supply and install common earthing system (compound area) c/w copper tape, copper rod, G.I pipe 50mm and cadweld jointing	No			
		2	300mm x 300mm Heavy Duty Earth Chamber	No			
3		To supply and install earthing system for feeder c/w 50mm GI pipe, copper cable, MGB and proper connection to the common earthing system	No				
TOTAL SITE INFRASTRUCTURE FOR NATURAL DISASTERS (TOWER) (INCLUDING TAXES)							

**Bill of Quantity for Site Infrastructure for Natural Disaster for Spoke (To Fill If Applicable)**

ITEM	DESCRIPTION		UNIT	QTY	UNIT COST	TOTAL (RM)
SPOKE						
A	Concrete Plinth For					
	1	Outdoor base (size: 3m x 5m x 0.40m thk)				
	A	50mm thk lean Concrete Grade 15P for foundation base – 3 x 5 x 0.4	M2			
	B	600mm thk reinforced concrete (G30) – from platform level	M3			
	C	To supply and lay 1 layer BRC A7 reinforcement for concrete platform	M2			
	D	Sawn formwork	M2			
	E	100m Dia, 1W PVC Duct	Nos			
	F	Inspection Pit Type A	Nos			
	G	To supply and install “I” beam base (size: 4m x 0.2m x 0.2m x 0.01m thk)	Nos			
	H	Concrete steps	Nos			
	I	450mm x 450mm Electrical Pit c/w retractable lifting handle (outdoor with hinges), inclusive necessary 100mm diameter PVC duct	Nos			
B	2 x Genset c/w skid tank (7m x 3m x 0.6m thk)					
	A	50mm thk lean Concrete Grade 15P for foundation base	M2			
	B	600mm thk.Reinforced concrete (G30) – from platform level	M3			
	C	To supply and lay 1 layer BRC A7 reinforcement for concrete platform	M2			
	D	Sawn formwork	M2			
	E	Inspection Pit Type B	Nos			
C	Basic Grounding And Earthing System					
	A	To supply and install common earthing system (compound area) c/w copper tape, copper rod, G.I pipe 50mm and cadweld jointing	Nos			
	B	300mm x 300mm Heavy Duty Earth Chamber	Nos			
	C	To supply and install earthing system for feeder c/w 50mm GI pipe, copper cable, MGB and proper connection to the common earthing system	Nos			
TOTAL FOR SITE INFRASTRUCTURE FOR NATURAL DISASTERS (SPOKE) (INCLUDING TAXES)						

**PART 2****CLUSTER :****UST:****SITE ID:****SITE CATEGORY: (SPUR / COLLECTOR)****Bill of Quantity For Tower**

NO	DESCRIPTION	UNIT	QTY	UNIT COST	TOTAL (RM)
HUB / TOWER					
1. GENERAL & PRELIMINARIES					
A	Insurance				
	1. Provision for Insurance during construction period	LS			
B	Planning & Design				
	1. Techical Site Survey	LS			
	2. RF & TX Audit	LS			
	3. Network Design	LS			
C	Project Management				
	1. Monthly Reporting & Meetings	LS			
	2. Site Management including Site Monitoring and Inspection	LS			
D	Double handling charges - If applicable	LS			
E	Deposit / Contribution Charges for incoming power supply	LS			
TOTAL ITEM 1 : GENERAL & PRELIMINARIES					
2. EQUIPMENT & SYSTEMS					
A	Supply of Complete BTS Equipment (2G and 3G)	per site	1		
B	Installation, Commissioning, Integration & Optimisation	per site	1		
	TOTAL ITEM 2 : EQUIPMENT & SYSTEMS				

NO	DESCRIPTION	UNIT	QTY	UNIT COST	TOTAL (RM)
<b>3. BACKHAUL (*To fill either Item a or Item b)</b>					
<b>*A</b>	<b>PDH Microwave System</b>				
	1. Supply of Complete PDH Microwave System for Complete Link including necessary feeder cable, brackets and jumper.	per link	1		
	2. Frequency Scanning, physical LOS check, installation, commissioning & Integration of PDH Microwave System for complete link	per link	1		
	3. Supply and install complete antenna support system	set	1		
<b>*B</b>	<b>VSAT Transmission System including plinth</b>	per link	1		
<b>TOTAL ITEM 3 : BACKHAUL</b>					
<b>4. ANTENNA SYSTEM</b>					
<b>A</b>	Supply of Complete Antenna	set	3		
<b>B</b>	Supply of Complete antenna feeder system (AFS) including necessary feeder Cable, brackets and jumper	set	1		
<b>C</b>	Supply and install complete antenna support system	set	3		
<b>D</b>	Installation and Testing of complete antenna system	set	1		
<b>TOTAL ITEM 4 : ANTENNA SYSTEM</b>					
<b>5. DC POWER SUPPLY</b>					
<b>A</b>	Supply of Complete Rectifier System and Battery Backup System	LS			
<b>B</b>	Installation and Commissioning of rectifier and battery system including necessary power and grounding cables.	LS			
<b>TOTAL ITEM 5 : DC POWER SUPPLY</b>					

NO	DESCRIPTION	UNIT	QTY	UNIT COST	TOTAL (RM)
<b>6. UPGRADING / ADDITIONAL EQUIPMENT</b>					
(*To fill either Item A or Item B)					
<b>A</b>	<b>New equipment</b>				
1	RNC	LS			
2	BSC	LS			
<b>B</b>	<b>Upgrade</b>				
1	RNC upgrade	LS			
2	BSC Upgrade	LS			
3	Backhaul (Link Transmission Upgrade)	LS			
4	MSC Upgrade / EMS	LS			
<b>TOTAL ITEM 6: UPGRADING / ADDITIONAL EQUIPMENT</b>					
<b>7. EQUIPMENT SHELTER &amp; ALARM SYSTEM (*To fill either Item a or Item b)</b>					
<b>A*</b>	Supply & Install Cabin complete with all necessary accessories	set	1		
<b>B*</b>	Supply & Install Outdoor Cabinet c/w outdoor	set	1		
<b>C</b>	Supply & Install horizontal cable gantry	set	1		
<b>D</b>	Supply & Install MGB at the edge of horizontal gantry	Nos	1		
<b>E</b>	Supply and install of Intruder System	LS			
	*Note: To choose either Item a or Item b				
<b>TOTAL ITEM 7 : EQUIPMENT SHELTER &amp; ALARM SYSTEM</b>					
<b>8. AC POWER SUPPLY</b>					
<b>A</b>	<b>AC Main Distribution Board System (* To fill either Item 1 or Item 2)</b>				
1*	To supply and install 3phase 60A TPN ACPDB indoor type (for Cabin)				
2*	To supply and install 3phase 60A TPN Power Distribution Unit (PDU) Weather proof Outdoor Type (for Outdoor BTS)				
3	EL-4C x 35mm (u/g)PVC/SWA/PVC cable from meter box	LS			

NO	DESCRIPTION	UNIT	QTY	UNIT COST	TOTAL (RM)
4	To supply and install metering panel / meter box	LS			
<b>B</b>	<b>Sourcing of Permanent Power Supply (To fill any one (1) item only)</b>				
1	Power Supply sourced from National grid (3phase 60Amps) - overhead including concrete poles 35mm overhead cable, staywires and all necessary labour	Lot	1		
2	Supply and Install Hybrid Power System	Lot			
3	Supply & Install Generator Set System: 2 x15kVA Genset c/w 1,000L skid tank	Lot			
4	Supply & Install Generator Set System: 2 x20kVA Genset c/w 2,000L skid tank	Lot			
<b>TOTAL ITEM 8 : AC POWER SUPPLY</b>					
<b>9. INTEROPERABILITY COST</b>					
<b>A</b>	<b>Interoperability cost for RAN Sharing purpose</b>	LS			
<b>TOTAL ITEM 9 : INTEROPERABILITY COST</b>					
<b>SUMMARY</b>					
<b>HUB / TOWER</b>					
1	TOTAL ITEM 1: GENERAL & PRELIMINARIES				
2	TOTAL ITEM 2: EQUIPMENT & SYSTEM				
3	TOTAL ITEM 3: BACKHAUL				
4	TOTAL ITEM 4: ANTENNA SYSTEM				
5	TOTAL ITEM 5: DC POWER SUPPLY				
6	TOTAL ITEM 6 : UPGRADING / ADDITIONAL EQUIPMENT				
7	TOTAL ITEM 7: EQUIPMENT SHELTER & ALARM SYSTEM				
8	TOTAL ITEM 8 : AC POWER SUPPLY				
9	TOTAL ITEM 9 : INTEROPERABILITY COST				
<b>FINAL TOTAL PART 2 (TOWER) (INCLUDING TAXES)</b>					

**Bill of Quantity for Spoke (To Fill If Applicable)**

ITEM	DESCRIPTION	UNIT	QTY	UNIT COST	TOTAL (RM)
<b>SPOKE</b>					
<b>1. GENERAL &amp; PRELIMINARIES</b>					
<b>A</b>	<b>Insurance</b>				
	1. Provision for Insurance during construction period	LS			
<b>B</b>	<b>Planning &amp; Design</b>				
	1. Technical Site Survey - Pre and Post Award	LS			
	2. RF & TX Audit	LS			
	3. Network Design	LS			
<b>C</b>	<b>Project Management</b>				
	1. Monthly Reporting & Meetings	LS			
	2. Site Management Including Site Monitoring and Inspection	LS			
<b>D</b>	<b>Double handling charges - If applicable</b>	LS			
	only applicable for sites not accessible by land				
<b>E</b>	<b>Deposit / Contribution Charges for incoming power supply</b>	LS			
<b>TOTAL ITEM 1 : PRELIMINARIES</b>					
<b>2. ANTENNA SYSTEM</b>					
<b>A</b>	Supply of Complete RF Antenna	set	3		
<b>B</b>	Supply of Complete antenna feeder system (AFS) including necessary feeder Cable, brackets and jumper	set	3		
<b>C</b>	Supply and install complete antenna support system	set	3		
<b>D</b>	Installation and Testing of complete antenna system	set	3		
<b>E</b>	Supply , Install and Testing of Transmission backhaul Microwave Or VSAT	set	1		
<b>TOTAL ITEM 2 : ANTENNA SYSTEM</b>					



ITEM	DESCRIPTION	UNIT	QTY	UNIT COST	TOTAL (RM)
<b>3.BACKHAUL</b>					
<b>A</b>	Sourcing and securing sufficient Network Backhaul / Transmission / Carrier for 2G and 3G services implementation and integration.	LS			
<b>B</b>	Design, Dimension, Supply, Install, Testing and Commissioning of Fiber Optic Backhaul System.	Lot			
<b>C</b>	Design, Dimension, Supply, Install, Testing and Commissioning of Transmission backhaul Microwave Or VSAT	Lot			
<b>TOTAL ITEM 3 : BACKHAUL</b>					
<b>4. DC POWER SUPPLY</b>					
<b>A</b>	Supply of Complete Rectifier System and Battery Backup System	LS			
<b>B</b>	Installation and Commissioning of rectifier and battery system including necessary power and grounding cables.	LS			
<b>TOTAL ITEM 4 : DC POWER SUPPLY</b>					
<b>5. EQUIPMENT SHELTER &amp; ALARM SYSTEM</b>					
<b>A</b>	Supply & Install Outdoor Base	set	2		
<b>B</b>	Supply & Install horizontal cable gantry	set	2		
<b>C</b>	Supply & Install MGB at the edge of horizontal gantry	Nos	2		
<b>D</b>	Supply and install of Intruder System	LS			
<b>TOTAL ITEM 5 : EQUIPMENT SHELTER &amp; ALARM SYSTEM</b>					
<b>6. AC POWER SUPPLY</b>					
<b>A</b>	<b>AC Main Distribution Board System (* To fill either Item 1 or Item 2)</b>				
<b>1*</b>	To supply and install 3phase 60A TPN ACPDB indoor type (for Cabin)	LS			
<b>2*</b>	To supply and install 3phase 60A TPN Power Distribution Unit (PDU) Weather proof Outdoor Type (for Outdoor BTS)	LS			

ITEM	DESCRIPTION	UNIT	QTY	UNIT COST	TOTAL (RM)
3	EL-4C x 35mm (u/g)PVC/SWA/PVC cable from meter box	LS			
4	To supply and install metering panel / meter box	LS			
<b>B</b>	<b>Sourcing of Permanent Power Supply (To fill any one (1) item only)</b>				
1*	Power Supply sourced from National grid (3phase 60Amps) – including submission and obtaining approval from TNB/SESB/SESCO,	Lot			
2*	Supply and Install Hybrid Power System	Lot			
3	Supply & Install Generator Set System: 2 x15kVA Genset c/w 1,000L skid tank	Lot			
4	Supply & Install Generator Set System: 2 x20kVA Genset c/w 2,000L skid tank	Lot			
<b>TOTAL ITEM 6 : AC POWER SUPPLY</b>					
<b>SUMMARY</b>					
1	TOTAL ITEM 1: GENERAL & PRELIMINARIES				
2	TOTAL ITEM 2: ANTENNA SYSTEM				
3	TOTAL ITEM 3: BACKHAUL				
4	TOTAL ITEM 4: DC POWER SUPPLY				
5	TOTAL ITEM 5:EQUIPMENT SHELTER & ALARM SYSTEM				
6	TOTAL ITEM 6: AC POWER SUPPLY				
<b>FINAL TOTAL PART 2 (SPOKE) (INCLUDING TAXES)</b>					

## **APPENDIX 8 - MAINTENANCE AND OPERATION SUPPORT PLAN (where applicable)**

The preventive and corrective maintenance includes operational checking and testing as well as cleanliness and tidiness of the site and equipment.

### **A. Preventive Maintenance**

NO	ITEM	MANPOWER PER SITE	FREQUENCY	DESCRIPTION

### **B. Corrective Maintenance**

NO	ITEM	MANPOWER PER SITE	RESPONSE TIME	OPERATING CENTER (OPERATING HOUR)

**C. Contact Personnel** :

**D. Hotline/Contact No.** :

**E. Others** :

## **APPENDIX 9 – TOWER AND SITE TECHNICAL SPECIFICATIONS**

Please refer to separate documents provided.