



19 November 2018

SUPPLEMENTAL / BID BULLETIN

Addendum No. 2018-014-04

Subject: “Supply, Delivery, Installation, Testing and Commissioning of End to End Telecommunication Network Using IP Over VSAT” (Reference: PR No. 2018-09-0650 / IB 2018-014; ABC Php 402,000,000.00)

This Bid Bulletin is being issued to all prospective bidders to clarify, amend and/or modify certain provisions in the Terms of Reference (TOR) and to answer the written clarificatory questions submitted by prospective bidders, to wit:

A. Queries from SMSGT

QUESTIONS	PAGASA-BAC ANSWERS
<p>1. May we request that the contracts completed within five (5) years from date of submission and receipt of bids be accepted?</p> <p>May we request that the completed contract be an aggregate of multiple contracts of similar nature and the aggregate contract amounts must at least be equivalent to fifty percent (50%) of the ABC, the largest of which must be at least equivalent to twenty five percent (25%) of the ABC?</p> <p>May you also consider including in the definition of similar project to involve satellite network (uplink system).</p>	<p>Yes. Completed contracts from within five (5) years from date of submission and receipts of bids is accepted.</p> <p>With regard to the compliance to the requirement of Single Largest Completed Contract that is similar in nature, prospective bidders may be allowed to submit at least two (2) similar completed contracts the aggregate amount of which should be equivalent to at least fifty percent (50%) of the ABC of the Project; Provided that, the largest similar contract must be equivalent to at least twenty five (25%) of the ABC of the Project; and the business/company of the prospective bidder willing to participate in the bidding has been in existence for at least three (3) consecutive years prior to the advertisement and/or posting of the ITB.</p> <p>We will only consider similar projects that involves satellite telecommunications with data transfer.</p>
<p>2. May we request for a copy of Section VII. Compliance Matrix?</p> <p>May we request for a copy of Section VI. Schedule of Requirements?</p>	<p>A copy of these two sections are included in the bid documents and you can avail them upon purchase of our bidding documents.</p>
<p>3. Is fiber link between hubs in QC and Cebu available?</p> <p>In the absence of fiber, can Single Channel Per Carrier (SCPC) via satellite be used?</p>	<p>Yes, there is an existing IPVPN link but the project calls for another configuration.</p> <p>Please refer to Annex B.</p>
<p>4. For Camera and HFR, can satellite systems like Inmarsat, Thuraya,</p>	<p>We will accept any other VSAT technology except BGAN and</p>

<p>Iridium, Orbcomm, M2M etc, be used?</p> <p>For Camera and HFR stations, is there any room or shelter for indoor modem?</p> <p>What is the power sourced for HFR?</p>	<p>kindly refer to the TOR item 1.4 under System Specification of the Technical Specification.</p> <p>The winning bidder shall provide all the necessary equipment and peripherals for the camera station. For HFR stations, there are shelters that can provide for the indoor modem.</p> <p>Currently, there are different source of power for the HRF. Some are powered by solar power and other ate powered by 220v AC commercial power.</p>
<p>5. Will be there be a required antenna size for Hub?</p> <ul style="list-style-type: none"> • Is a 3.8-4.5 meter antenna hub acceptable? 	<p>The antenna size for the hub shall be limited from 3.8 to 4.5m.</p>
<p>6. Can PAGASA confirm the file size and frequency (how often) will be transmitted from each station?</p> <p>May we request for a copy of Annex A (Preliminary bandwidth allocation per site).</p>	<p>Refer to Annex A.</p>
<p>7. Please specify the technical compliance of integrating with PAGASA's Systems.</p>	<p>The technical compliance regarding the integration with PAGASA's system will be the successful transmission to and from the hub/remote station of all data required in accordance with all parameters set.</p>

B. Queries from INVENTIV MEDIA INC.

QUESTION	PAGASA-BAC ANSWER
<p>1. If the Single Largest Completed Contract (SLCC) that is similar in nature to the project to be bid is divided into two (2) phases, each of which has a corresponding purchase order, would PAGASA BAC consider it as a Single Contract?</p>	<p>PAGASA BAC won't consider a project which is divided into two (2) phases and has a separate corresponding purchase order as a Single Completed Contract.</p>
<p>2. The Annex A of the Terms of Reference (TOR) which would specify the preliminary bandwidth allocation per site, as indicated in Item 1.11, is not attached or included in the Bidding Documents.</p>	<p>This Annex A is an attachment in this Supplemental Bid/Bulletin (SBB).</p>
<p>3. It is stated in item 1.4, under Section F. Technical Specifications "The proposed VSAT solution shall operate most in C-band except for the Camera and HFR Stations." We have noticed that the cameras and HFR stations are included in the non-C-band operations. Based on our experience, mission critical services like those provided by the HFR and camera mostly operate in C-band due to its high reliability and availability. In this regard, we would like to clarify this matter.</p>	<p>Refer to Item 1.4 under Section F of the Technical Specification. (Self-Explanatory)</p>
<p>4. Inventive Media Inc. would like to clarify if the Authenticated Certificate of</p>	<p>Yes, Authenticated Certificate of Sole/Exclusive Distributorship issued to the bidder by the manufacturer only apply to this</p>

Sole/Exclusive Distributorship to be issued to the Bidder by the manufacturer applies to this particular PAGASA project only.	particular PAGASA project.
5. Under Item 2.4 CAMERA specifications of the TOR, it is stated that the configured transmission shall be 1 snapshot per minute. We would like to clarify the resolution or quality of the image to be transmitted every minute.	The proposed transmission is "One (1) snapshot/picture every five (5) minutes with a resolution of 640 X 480.
6. Lastly Inventiv Media, Inc. would like to request to the Bids to give us sufficient time to prepare the documents.	Refer to SBB No. 3 (another re-scheduling of Submission and Opening of Bids).

C. Queries from GLOBE AND ENHANCED ELECTRONICS

QUESTIONS	PAGASA-BAC ANSWERS
1. The project's name is " Supply, delivery, installation, testing and commissioning of end to end telecommunication network using IP over VSAT ", which at its face value is classified as procurement of Goods. Letter F – Technical Specification 1.1 states that PAGASA requires the implementation of fully-managed broadband IP and VSAT connectivity solution and 1.2.3 item 4 states that service of qualified local manpower who shall support PAGASA's NOC operation ... - our clarification is what is the extent of the managed service the winning bidder will perform, will they be required to provide a full time manpower to managed the NOC (both at QC and Cebu) or is this tender be limited to the purchase of goods to include the training of PAGASA personnel who will operate and manage the NOC and VSAT system?	Pls. refer to the TOR under # 1.2.3 System Specification under Technical Specification
2. The VSAT network will be mostly C band but with other frequency for non-critical system – our clarification is what is the other frequency, is this KU band? If we use two frequency, we need two hub antennas one for C band and one for the other frequency. Can't we just use one frequency so that we will only use one big hub antenna for each NOC. Using two hub antennas will be difficult to maintain and operate in the long run.	The area of the Camera and HFR sites, the subscription rate of C-band VSAT and the criticality of the camera and HFR data were taken into consideration.

<p>3. Letter F 1.2.1 the bid shall include a command center for monitoring and control of satellite network and network equipment – our clarification is what is the composition of the command center and will it be located both at QC and Cebu?</p>	<p>The NOC shall have the following; the hub for the satellite, network management server (NMS), application server and two high end workstations with 42” monitor. This set should both be made available at QC and Cebu.</p>
<p>4. Letter F 1.5 the proposal for providing the service mentioned shall cover a minimum of 12 months with a possibility of extension for an additional period of one year twice – our clarification is, will the extension be for two years and what is the ABC for each extension and the scope of work, service or deliverables?</p>	<p>Only one (1) year of service will be provided for this project. So far, there is no presumption for extension of service.</p>
<p>5. Letter F 1.7 new equipment will be installed to all stations – our clarification is what the equipment that need to be replaced are, can a list be provided for each station?</p>	<p>There is no equipment to be replaced or shall be used. The project calls for a new equipment as deliverables.</p>
<p>6. 2.1 satellite transponder item 3, the bidder must be able to provide an additional transponder capacity on the same transponder and satellite for possible future requirement – our clarification is, how big will be the anticipated future requirement and will there be an additional budget for it? This info is critical when we negotiate with the satellite provider on the submission of the initial bid and to determine the existing capacity of the satellite to be used.</p>	<p>Since the satellite is relatively new, it is presumed that there is enough transponder space for future requirements whatever the capacity. This requirement is an assurance that the winning bidder would be able to provide the necessary transponder space preferably on the same satellite when the said requirements surfaced.</p>
<p>7. 2.1 satellite transponder item 4 the bidder should agree to reduce the subscribed bandwidth upon the request at any time in the future due to the revision of the link budget, new technology and network resizing – our clarification is will the reduction be effected during the initial twelve month</p>	<p>Definitely, this pertains to AFTER the duration of the contract and not during the contract period.</p>

period / duration of the bid, because the minimum period for the subscription of the bandwidth is for one year and also we if this reduction will be effected during duration of the contract what will be its effect on the bid price that will be submitted.	
8. 2.1 satellite transponder item 4 satellite orbital slot location +/-30 deg of 120 deg east – can't we just not limit the orbit slot from 90 deg to 150 deg east because it will lessen the choice on the available satellite providers to be considered which will be disadvantageous to PAGASA.	The satellite orbital slot location +/-30 deg of 120 deg east means satellite that has an orbital slot of 90 deg to 150 deg East.
9. H. Warranties item 2 scheduled maintenance, choice are quarterly, semi-annual, annually – our clarification is which among these 3 will be required to be performed be the bidder.	All three (3) schedules (quarterly, semi-annually and annually) are to be considered. However, a proposal shall be drafted by the winning bidder regarding the program for each schedule maintenance for approval of PAGASA.
10. On the total data size what percentage would be the downlink and the uplink for example on the 1mb-3mb data size, how much is the DI and UL, will the usual percentage ratio of 1 UL and 4 DL be applicable.	Refer to Annex A
11. It is assumed that the QC is the primary and the facility at Mactan as the back-up – our clarification is how will be the back-up facility at Mactan be connected to QC, is it through lease line, kindly define how will it be connected. Is the updating of the back-up facility one real time or through scheduled updating?	Refer to Annex B
12. Can we use C-band instead of KU band? Reason being is that the biggest satellite operators have already agreed to free up 200 MHZ of the C Band Satellite frequency for 5G use. Please see attached article from Via Satellite magazine dated October 4, 2018. Thus in the future there will already be a limited C band satellite frequency for use.	Refer to Item 1.4 of the Terms of Reference (TOR).
13. May we ask for an extension of 4 weeks to submit the bid.	Refer to SBB No. 3 (another re-scheduling of Submission and Opening of Bids).

D. Queries from We are IT (WIT)

QUESTIONS	PAGASA-BAC ANSWERS
1. In the CD given to us by the BAC Secretariat after we Purchased for the Bid Documents last Friday, it contains a Folder named "other SAMPLE Form", upon checking its contents, we noticed that there are forms that are not listed in	Kindly use the forms that were discussed during the Pre-bid Conference. These forms can be found in the bidding documents you purchased under the file folder of the Eligibility and Technical Requirements and Financial Componen.t

<p>the “Checklist of Requirements” and it was not discussed during the pre-bid conference last October 18. Do we need to still accomplish and submit all of these forms?</p> <ul style="list-style-type: none"> • SF-GOOD-20 (Registration Certification) • SF-GOOD-21 (Supplier's Profile) • TAB (B-3 (a))_List of Qualified Key Personnel • TAB (B-3 (c))_Certificate of Employment • TAB (B-3 (d))_Supplier’s Letter of PE 	
<p>2. May we request for additional details on the VSAT sites listed in A.2 Project Purpose, item #3. It only says the name and the number of remote sites. We would need the following information:</p> <ol style="list-style-type: none"> a. Complete Address or Location of each site. Latitude and Longitude if possible. b. File size of data to be transmitted and received c. Frequency of number of times that each remote will transmit and receive data d. Will all the hub locations has enough space of at least 3m x 3m space for a 1.8m VSAT Antenna installation? 	<p style="text-align: center;">} Refer to Annex A</p> <p>Yes.</p>
<p>3. Can you Specify what type of lightning protection you need? Is it per site for all sites including the camera stations? Please specify also the type of lightning protection you need.</p>	<p>Refer to Annex D</p>
<p>4. Does the mode of transmission from remote to hubs simultaneously or with interval? From the hub going to the remote simultaneously also?</p>	<p>There is a 15 minutes window interval for every schedule transmission time.</p>
<p>5. Can we request for a network and transmission flow diagram for better understanding?</p>	<p>Refer to the attached network and transmission flow diagram. (Annex B and C)</p>
<p>6. For the cameras, are they going to send pictures, videos or both? It's in the TOR also that it will send snapshot per minute, will it be for 24hours?</p>	<p>The cameras will be sending a snapshot/ picture every five (5) minutes 24/7 in 640 x 480 resolution.</p>
<p>7. What is the manner of sending the data from remote to hub and vice versa? Does PAGASA have a separate application for this? If yes, kindly provide details.</p>	<p>Refer to Annex A.</p>
<p>8. Will you require storage of data? Where will the data be stored? Will this data storage be provided by the winning bidder?</p>	<p>We are not requiring storage system because PAGASA has an existing storage system.</p>
<p>9. For section 1.6, what do you mean by</p>	<p>DNS caching and TCP IP acceleration are features that should</p>

DNS caching and TCP-IP acceleration? Is it a separate appliance?	be presented in the network system.
10. Explain the concept/operations of the 2 Hubs. Is PAGASA expecting that the transmission coming from all the remote stations will be received simultaneously by the 2 hubs? Will the hubs act as a primary and the other a backup? Who will be sending back (via multicast) the processed data back to the remote sites? Will it be the hub in QC or Cebu?	The C-band system is designed in star topology where the hubs reside inside PAGASA network and premises. Data will almost simultaneously be sent into the two hubs. However, products will be sent by the primary hub to the remote only therefore Mactan will be on receive mode until such time QC hub breaks down will Mactan be on transmit/receive mode. (Refer to Annex B)
11. Can PAGASA describe the HUB locations? Can the 2 Hub sites accommodate at least 4.5m to 7m Hub Antenna and for the remote locations, at least 1.8m antenna?	Due to area limitations, antenna hub size shall be limited to 3.8 to 4.5m only.
12. For the sites that has transmit function only (weather cameras and HFR stations), can we use other transmission media other than c-band vsat? If yes, is it okay to use terrestrial connectivity and the internet will be the mode of connectivity? If not, can we use Ku Band or BGAN? If Ku band and BGAN is allowed, can the hub for this solution will be located outside of PAGASA?	As referred to #1.4 of the System specification under Technical Specification of the TOR, as long as it is justified and supported highly by documents.
13. Can PAGASA elaborate the implementation period, it only says in the TOR, ~300 calendar days. Will the bidder propose the implementation strategy?	The proposal for the implementation strategy and schedule should be part of the submission by the prospective bidders.
14. On section 1.2.2 Will the winning bidder be responsible for the pull-out of the old camera equipment? Who and how inventory will be handled if to be used as a spare?	Yes, the winning bidder should be responsible for the pull-out of the old camera system to be brought back from the station to PAGASA main. Other relative matters shall be discussed during the kick-off meeting and on the implementation of the project.
15. On section 1.2.3 Where will the inventory of spares and service units be located? Is there a minimum % spares and service unit required?	Ten (10) new complete set for remote stations and Two (2) new sets on the hub shall be provided as spares to be used for the repair and maintenance. Only active components such as LNBS and BUCs including network equipment but not the antenna system are included as spares. For the HFR and Camera stations, eight (8) sets of complete spares for the active and networking components. Five (5) new complete sets of camera system including power supply system must also be provided. It will be provided prior to commissioning and completion and will be stored at the Main office of PAGASA.
16. On section 1.2.3 Will the basic operations training be on-site or for select number of PAGASA employees? Where and how many is required to attend the training? If onsite, who will be trained for the unmanned locations?	Factory Acceptance Testing (FAT) shall be conducted at the factory site of the C-Band equipment manufacturer. The purpose of the test is to verify the performance of the system in accordance with the specifications and functional requirements. Any defect or deviation discovered during the factory acceptance test shall be rectified by the winning bidder immediately or within a maximum period of one (1) month from the completion of the test. After such rectification, another testing shall be made to verify the rectification.

Perpetual license on all software licenses shall be provided upon completion and acceptance. Before shipment of equipment for deployment in the Philippines, the FAT shall be conducted. All test procedures and required inspections shall be defined in a draft FAT Protocol to be provided to PAGASA no later than 60 days prior to the planned data of the FAT.

The FAT shall be witnessed and accepted by seven (7) PAGASA personnel and shall be conducted within a total of seven (7) calendar days. All related expenses, such as, round trip air fare, transportation, lodging/accommodation and daily allowances amounting to the prevailing UNDP DSA Rate for each participant shall be shouldered by the winning bidder.

Factory and Site Training

The winning bidder shall conduct a 7-day Factory Technical Training to be attended by ten (10) qualified technical personnel of PAGASA that will be trained on the telecommunication network software- hardware configuration/setup. All related expenses, such as, but not limited to the training materials, round trip airfare, local transportation, lodging/accommodation and daily allowance amounting to the prevailing UNDP DSA Rate for each participant shall be borne by the winning bidder. Training materials and meals shall be provided to the participants by the winning bidder.

Five-day On-Site Training will be conducted in every PRSD. Participants will be coming from all stations covered by the project. One (1) participant will join per station, four (4) participants from PRSD and two (2) technical personnel from the main office. Participants in the remote stations and PRSD will attend in their respective area while the participants from main office will differ in every PRSD training. The lecture venue will be conducted where the participants will be booked/lodged while the hands-on training will be conducted on the appropriate PRSD. Training courses shall cover operation and maintenance, technology, systems, services, installation, electronics trouble shooting and standard operating procedures.

Local transportation, lodging/accommodation, daily allowance, meals (breakfast, during training and dinner) and training materials shall be provided to the participants by the winning bidder. The lecture site/venue shall be selected and approved by PAGASA. All travel expenses shall be in accordance with existing PAGASA rates and standards and shall be borne by the winning bidder. The winning bidder can provide additional training subjects as deemed necessary and shall form part of the training syllabus. All training materials must be provided for by the winning bidder.

- Meals shall be served during the course of the program, morning and / afternoon coffee breaks and lunch. These will be borne by the winning bidder.
- The winning bidder shall provide the appropriate certificate to

	<p>the participants.</p> <ul style="list-style-type: none"> • The winning bidder must secure a certificate of compliance as proof of the trainings conducted. <p>This certificate of compliance shall form part of deliverables prior to the issuance of Certificate of Acceptance and Completion.</p> <ul style="list-style-type: none"> • Detailed hand-out for each training topics especially interpretation and analysis of different products shall be provided.
17. On section 1.3 Managing BW resources? By manage, does it mean freehand or control in allocating or reallocating resources to any sites?	Pls. refer to #1.9 from System Specification under Technical specification of the TOR
18. On section 1.12 MTTR max of 1 Hour. What about for sites that are difficult to reach?	For sites that are difficult to reach, the winning bidder can propose MTTR max for approval of PAGASA.
19. On section 2.1 Network resizing, will this happen after the initial 12 months contract?	This will be determined during the implementation of the project.
20. On section 2.2 All antenna should be certified by the partner satellite operator. Are we required to submit a certification issued by the satellite operator?	Yes, all prospective bidders shall submit a certification issued by the satellite operator. This is one assurance that the bidder is supported by the satellite operator of choice who will be responsible for the subscription part of the project.
21. On section 2.4 Power/Back-up Power. Solars, UPS, AVR. Does it pertain to the power source compatibility of the camera or is it a requirement to provide power source for the camera stations?	The deliverables for the camera station include the power supply system uninterruptible for continuous 24/7 use.
22. On section 3.4 The tool should also have the capability of automated bandwidth and capacity management and generating summarized and detailed report. Please elaborate on the highlighted portion of this paragraph.	This is in connection with our answer from question #17: Since the system is configured with the approved Bandwidth allocation plan and utilizes DSCPC among others, traffic should automatically change and return to its default setting. All traffic changes and link status shall be reported by the network management system (NMS) provided in the NOCs.
23. On section H. Schedule Maintenance. Quarterly /Semi-Annually/Annually. Is this for all Stations.	All three (3) schedules (quarterly, semi-annually and annually) are to be considered. A proposal shall be drafted by the winning bidder regarding the program for each scheduled maintenance for approval of PAGASA.
24. Can we request a building plan for all stations so we will be able to identify where to position or design the position of our equipment?	Due to time constraint, building plans shall be provided when requested prior or during the implementation stage of the project to the winning bidder.
25. On section 2.1 Satellite Orbital Loc: +/- 3-0 means that we choose any satellite that has an orbital slot from 90 deg to 150 deg East?	The satellite orbital slot location +/-30 deg of 120 deg east means satellite that has an orbital slot of 90 deg to 150 deg East.
26. On section 2.2 RF: Full Redundant ---- Automatic failover of ODU, meaning 2 BUCs and LNBS installed with a failover switch? Hub/ B-Hub: Single ---- What is a B-Hub?	Yes, full redundancy means automatic failover of ODU which means 2 BUCs and LNBS installed with a failover switch. B-hub means Backup Hub
27. On section 2.4 Camera: Viewing Angle ---- Is it PTZ?	No, this is a fixed camera station. Viewing Angle of the Camera means the maximum angle coverage of the fixed

<p>Image Tagging: GPS Location ----- is it a Built-in GPS on the camera for tagging?</p>	<p>camera. The camera station shall provide details such as coordinate and elevation together with the snapshot sent. The GPS tagging may come from the camera or the communication module.(</p>
<p>28. On section 1.3 Both the hub station and remote sites will be fully managed by the PAGASA main NOC and the 2nd NOC will have access to monitor the network and manage resources such as the bandwidth. Cebu Hub will just access/monitor the QC Hub only in order to manage the whole network, no direct management/connectivity to the remote?</p>	<p>PAGASA QC NOC will have an active monitor and resources management capability being the primary hub. In the event that QC NOC breaks down, Cebu NOC will work as the primary hub and should have full monitoring and resource management capabilities until switchover to QC.</p>
<p>29. Who will do the configuration/provide the image/file or data transfer software/applications/server from remote to hub and vice-versa?</p>	<p>Since everything is IP based, the interface between the data transport equipment and workstation will have no problem. Hardware interface and peripherals incl. drivers bet. The communication equipment and the workstations shall be provided by the winning bidder. PAGASA will assist in the configuration and integration of application systems that will be used in the file and data transfer process from remote to hub and vice-versa.</p>
<p>30. In line with the numerous information we need from PAGASA, and the complexity and magnitude of the Project we would respectfully request for an extension of submission of the Bid Proposal for at least another 10 working days to give us local bidders to carefully study and prepare our solution with our partners.</p>	<p>Refer to SBB No. 3 (another re-scheduling of Submission and Opening of Bids).</p>
<p>31. On the submission of "Statement of All Government and Private Contracts", are we going to attach the supporting documents being required to all contracts listed or the Supporting Documents will only be required to the Single Largest Completed Contract?</p>	<p>Kindly refer to the Checklist of Requirements (TAB C).</p>
<p>32. On the Project Implementation, can PAGASA provide us the Project Implementation Schedule? It is stated in the TOR that the delivery will be 310 calendar days. Will the implementation be in one shot? Or will it be in phases? Does PAGASA has priority sites to be implemented ahead of the others?</p>	<p>The prospective bidders shall submit as part of their proposal a chart in whatever form as appropriate.</p>
<p>33. On payment method, can bidder request for advance payment for mobilization? If yes, may we know the maximum percentage we can collect? May we also know the process and requirement that we need to comply for this advance payment?</p>	<p><u>(This answer is applicable to queries no. 33 to 35)</u> Payment method shall be governed by the terms and conditions set forth under items 10 (10.1 to 10.5) and 11 (11.1 to 11.3) of the General Conditions of the Contract (GCC), Philippine Bidding Documents. In view of the foregoing, below is payment schedule that will be imposed for purposes of the smooth implementation of the instant Project, to wit:</p>

	<p>a. On Contract Signature: <u>Fifteen Percent (15%)</u> of the Contract Price shall be paid within sixty (60) days from signing of the Contract and upon submission of a claim and a bank guarantee for the equivalent amount valid until the Goods are delivered</p> <p>b. On Delivery, Installation, Testing and Commissioning of all the Goods/Equipment on site: <u>payment shall be made according to the Price Schedule of the Goods delivered but not to exceed Sixty-five percent (65%) of the Contract Price</u> within sixty (60) days and upon submission of the complete documentary requirements.</p> <p><i>Note: Costs for the monthly subscription of telecommunication network shall be indicated by the bidders as separate pay item in their respective bid proposals.</i></p> <p>c. On Acceptance of the Project: The remaining twenty percent (20%) of the Contract Price (less the cost of the 12-month subscription) shall be paid to the Supplier within sixty (60) days after the date of submission of the acceptance and inspection certificate for the respective delivery issued by the Procuring Entity's authorized representative.</p> <p>Rules governing the deduction of Retention Money shall likewise be applied.</p>
<p>34. If the project will be done in phases, can the bidder ask for mobilization fee for every phase of the project?</p>	<p>Refer to answer no. 33</p>
<p>35. On Acceptance. Once a certain stage or phase of the project is complete, can the bidder ask for acceptance per phase so that we can start to bill PAGASA for the One-Time Charges and Monthly recurring Charges for the satellite Subscription?</p>	<p>Refer to answer no. 33</p>
<p>36. On the Satellite Transponder, will PAGASA allow bidders to offer satellite system that is yet to be operational but already has a firm timeline of its launched date in 2019?</p>	<p>Yes, the newer the transponder the better. However if the said transponder will not launched on the said date, the winning bidder should find a provider that will comply with the TOR set.</p>
<p>37. Lastly, since the response to the initial request for clarification has yet to be released, may we again request for another postponement of the submission for another week to give us prospective bidders time to study the PAGASA response and consult with our principals?</p>	<p>Refer to Supplemental Bid Bulletin (SBB) No. 2018-014-03</p>

E. Queries from iONE

QUESTIONS	PAGASA-BAC ANSWERS
<p>1. We would like to request for some items to be change to the following:</p> <p>1. IB: Page 1 item 3. 3. Bidders should have completed within ten (10) years from the date of submission and receipt of bids, a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section 2. Instructions to Bidders and Checklist of Eligibility Requirements.</p> <p>2. ITB: Eligible Bidders – Item 5 of 5.4; Unless otherwise provided in the BDS, the Bidder must have completed a Single Largest Completed Contract (SLCC) similar to the Project and the value of which adjusted, if necessary, by the Bidder to current prices using the Philippine Statistics Authority (PSA) consumer price index, must be at least one (1) single contract of similar nature amounting to at least twenty five percent (25%) of the ABC. or: Aggregate of multiple contracts of similar nature and the aggregate contract amounts must at least be equivalent to twenty-five percent 25% of the 46C, the largest of which must be at least equivalent to twelve point five percent (12.5%) of the ABC of the lot being bid for. *Similar" contract shall refer to contracts pertaining to the supply. implementation of IP Network or VSAT Network and/or Managed Network Services, Any of the following documents must be submitted attached corresponding to the listed completed largest contracts per Annex I-A: (a) Copy of End User's Acceptance or (b) Copy of Official Receipts; or (c) Copy of Collection Receipt with Sales invoice</p>	<p>Only within five (5) years is allowed as completed project from the date of submission and receipt of bids which is similar to the project.</p> <p>With regard to the compliance to the requirement of Single Largest Completed Contract that is similar in nature, prospective bidders may be allowed to submit at least two (2) similar completed contracts the aggregate amount of which should be equivalent to at least fifty percent (50%) of the ABC of the Project; Provided that, the largest similar contract must be equivalent to at least twenty five (25%) of the ABC of the Project; and the business/company of the prospective bidder willing to participate in the bidding has been inexistence for at least three (3) consecutive years prior to the advertisement and/or posting of the ITB.</p>
<p>2. We would like to request for some items to be change to the following:</p> <p>TOR a. Qualifications of Bidders under Additional Qualifications of Bidders; Additional Bidder's Qualification:</p> <p>Must be in the systems integration and IT (Information Technology) business in the field of IP Networking or Satellite</p>	<p>Due to the magnitude of the project, the additional qualifications for prospective bidders set in the TOR assures PAGASA that the prospective bidders are well experienced in the handling of satellite telecommunications. Furthermore, PAGASA will have a basis on reputation and the financial stability of the company in the handling of relatively similar projects of this magnitude. The submitted documents through verification shall give proof to the claims.</p>

<p>telecommunications and/or IT solution services for at least five (5) years.</p> <p>Must be a well experienced Telecommunications Operator, Internet Service Provider or Network Solution Provider. The bidder is expected to possess a strong background and experiences in broadband connectivity services provisioning</p> <p>Should have an excellent knowledge and understanding of satellite technology, Systems, Network and relevant experience in IP Networks (Wireless and Wired) integrated network design and implementation.</p> <p>Shall have successfully implemented as a principal contractor, at least two Large network projects implemented in a multiple locations environment within the last five years.</p> <p>Must be a registered legal company for at least five (5) years.</p> <p>Must have at least two (2) IT service contracts or more that include IT Communications Telecommunications and IT services contract deployment with reputable firms in the Philippines or abroad.</p> <p>in the case of joint ventures (JV), the qualifications and experience of all firms in the JV will be considered as if the JV was a single Bidder. Each firm in the JV must be a legally registered commercial enterprise established in the business</p> <p>Ans: The end-user specified this additional bidders' qualification due to the scope of the project. All the additional qualifications will ensure PAGASA that all prospective bidders are qualified and capable to provide the necessary technical support for the completion and maintenance support needed to sustain the project. Furthermore, such additional requirements will provide the necessary information on the amount of experience of the prospective bidders.</p>	
<p>3. We would like to request for some items to be change to the following:</p> <p>b. Item F. Technical Specifications, *No. 1.4, 1.5 and 1.12:</p> <p>1.4. The proposed VSAT solution shall operate most in C-band or Ku-Band or combination including the Camera and HFR Stations. The bidder shall provide</p>	<p>Item/No.1.4 of the Terms of Reference (TOR) should be maintained.</p>

<p>technical justification which may include calculations, white paper or any binding document that will ensure high link performances minimizing attenuation on the system used for HFR and Camera stations</p>	
<p>4. TOR 1.5. The proposal for providing the services mentioned shall cover a minimum period of twelve (12) months with a possibility for extension for an additional period of one year twice. The preferred access technology protocol should be multicast outbound while the inbound traffic can be TOMA or dynamic SCPC whichever one justified being the best user experience within the delay environment of satellite communications, deleted this portion)</p>	<p>Pls. refer to #1.4 of the System Specification from the Terms of Reference (TOR) under Technical Specification.</p>

This shall form an integral part of the Bid Documents.

Please be guided accordingly.

SGD.
ENGR. CATALINO L. DAVIS
Chairperson, PAGASA-BAC

ANNEX A"
Detailed List of Sites

	Sites	Locations		Data Type	Total Data Size	TRANSMIT/RECEIVE	
		LAT	Long			TRANSMISSION TYPE	Interval
Regional Stations							
1	TUGUEGARAO, CAGAYAN	17.647678	121.758469	doc, pdf, txt, csv, image , binary	1mb-3mb	T/R	3 hourly/hourly
2	SCIENCE GARDEN, QUEZON CITY	14.645072	121.044282	doc, pdf, txt, csv, image , binary	1mb-3mb	T/R	3 hourly/hourly
3	LEGASPI CITY, ALBAY	13.150937	123.728605	doc, pdf, txt, csv, image , binary	1mb-3mb	T/R	3 hourly/hourly
4	MACTAN INT'L AIRPORT, CEBU	10.322329	123.980118	doc, pdf, txt, csv, image , binary	1mb-3mb	T/R	3 hourly/hourly
5	EL SALVADOR CITY, MISAMIS OR.	8.535701	124.557946	doc, pdf, txt, csv, image , binary	1mb-3mb	T/R	3 hourly/hourly
6	DAVAO CITY, DAVAO DEL SUR	7.127577	125.654969	doc, pdf, txt, csv, image , binary	1mb-3mb	T/R	4 hourly/hourly
7	TACLOBAN CITY, LEYTE	11.22555556	125.025	doc, pdf, txt, csv, image , binary	1mb-3mb	T/R	5 hourly/hourly
8	LA UNION			doc, pdf, txt, csv, image , binary	1mb-3mb	T/R	5 hourly/hourly
Synoptic Stations							
1	PORT AREA (MCO), MANILA	14.58841	120.967866	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
2	BAGUIO CITY, BENGUET	16.403992	120.60147	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
3	DAGUPAN CITY, PANGASINAN	16.086784	120.352045	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
4	LAGAO CITY, ILOCOS NORTE	18.183016	120.534723	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
5	SINAIT, ILOCOS SUR	17.89019	120.459762	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
6	APARRI, CAGAYAN	18.360059	121.630454	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
7	BASCO, BATANES (RADAR & SYNOP)	20.427284	121.970536	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
8	CALAYAN, CAGAYAN	19.2630	121.4670	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
9	ITBAYAT, BATANES	20.786967	121.838378	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
10	BALER, AURORA (RADAR & SYNOP)	15.748809	121.632028	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
11	CABANATUAN, NUEVA ECUIA	15.470387	120.951143	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
12	CASIGURAN, AURORA	16.265083	122.128888	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
13	CLARK AIRPORT, PAMPANGA	15.1717	120.5616666667	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
14	CUBI PT., SUBIC BAY OLONGAPO	14.787679	120.266619	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
15	IBA, ZAMBALES	15.328408	119.965661	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
16	ALABAT, QUEZON	14.105384	122.017598	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
17	AMBULONG, BATANGAS	14.0900805556	121.0552444444	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
18	INFANTA, QUEZON	14.7466361111	121.6490333333	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
19	SANGLEY POINT, CAVITE	14.494953	120.906838	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
20	TANAY, RIZAL (SYNOP)	14.581167	121.36927	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
21	TAYABAS, QUEZON	14.018428	121.596575	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
22	CALAPAN, ORIENTAL MINDORO	13.409775	121.1896666667	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
23	CORON, PALAWAN	12.003544	120.200018	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
24	CUYO, PALAWAN	10.85411	121.008167	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
25	PAGASA ISLAND, PALAWAN	11.0521	114.285	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
26	PUERTO PRINCESA, PALAWAN	9.740134	118.758613	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
27	ROMBLON, ROMBLON	12.578649	122.270347	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
28	SAN JOSE, OCC. MINDORO	12.359602	121.04788	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
29	DAET, CAMARINES NORTE	14.128689	122.982559	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
30	JUBAN, SORSOGON	12.839231	123.997147	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
31	MASBATE, MASBATE	12.36632	123.629218	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
32	VIRAC SYNOP, CATANDUANES	13.576558	124.209834	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
33	ROXAS CITY, CAPIZ	11.600265	122.749621	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
34	DAUIS, BOHOL	9.5842	123.816	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
35	DUMAGUETE CITY, NEGROS OR.	9.335443	123.303342	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
36	BORONGAN, EASTERN SAMAR	11.660048	125.442282	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
37	CATARMAN, NORTHERN SAMAR	12.505372	124.628514	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
38	CATBALOGAN, WESTERN SAMAR	11.775024	124.88425	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
39	GUIUAN, EASTERN SAMAR	11.04558	125.755495	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
40	MAASIN, SOUTHERN LEYTE	10.1390083333	124.8604	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
41	TACLOBAN CITY, LEYTE	11.22555556	125.025	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
42	DIPOLOG, ZAMBOANGA DEL NORTE	8.599571	123.34372	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
43	ZAMBOANGA, ZAMBOANGA DEL SUR	6.917099	122.06631	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
44	MALAYBALAY, BUKIDNON	8.151421	125.133852	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
45	GENERAL SANTOS, ST. COTABATO	6.057342	125.103143	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
46	BUTUAN CITY, AGUSAN DEL NORTE	8.947081	125.482294	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
47	HINATUAN, SURIGAO DEL SUR	8.367467	126.338501	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
48	SURIGAO, SURIGAO DEL NORTE	9.782797	125.48935	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
49	COTABATO CITY, MAGUINDANAO	7.161722	124.214806	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
50	KALIBO, AKLAN	11.686933	122.381463	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
51	EL SALVADOR CITY, MISAMIS OR.	8.535701	124.557946	pdf, txt, csv, binary	1mb-2mb	T/R	3 hourly/hourly
Agromet Station							
1	BSU (MSAC) LA TRINIDAD, BENGUET	16°27'01.25" N	120°35'36.74" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
2	STO. TOMAS (BAGUIO RADAR)	16°20' N	120°34' E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
3	MMSU, BATAK, ILOCOS NORTE	18°03'18" N	120°33'48" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
4	ISU, ECHAGUE, ISABELA	16°42'18" N	121°39'59.99" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
5	NVISIT, BAYOMBONG, NUEVA VISCAYA (NVSU)	16°28'53.40" N	121°08'34.80" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
6	TCA CAMILING, TARLAC	15°38'13.79" N	120°24'57.47" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
7	CLSU, MUNOZ, NUEVA ECUIA	15°44'08.11" N	120°56'12.46" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
8	HACIENDA LUISITA, SAN MIGUEL, TARLAC	15°25'48" N	120°39'06" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
9	CABANATUAN SYNOP-AGRO STATION	15°29'18" N	120°57'42" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
10	NAS, UPLB, LOS BANOS, LAGUNA	14°10'20.36" N	121°13'48.74" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
11	PNAC, ABORLAN, PALAWAN (PSPC)	09°26'12" N	118°33'00" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
12	CavSU, INDANG CAVITE	14°11'52.50" N	120°53'7" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
13	BUCAF, GUINOBATAN, ALBAY	13°11'35.50" N	123°35'43" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
14	CSAC, PILI, CAMARINES SUR (CBSUA)	13°34'49" N	123°15'44" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
15	LA GRANJA, LA CARLOTA, NEGROS OCC.	10°22'36.50" N	122°32'35.22" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
16	PSPC, MAMBUSAO, CAPIZ	11°26'00" N	122°35'42" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
17	UEP, CATARMAN	12°30'34.50" N	124°44'01.74" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
18	VISCA, BAYBAY, LEYTE (VSU)	10°40'48" N	124°47'30" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
19	DUMANGAS, ILOILO	10°49" N	122°42" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
20	CMU, MUSUAN, BUKIDNON	07°56'36" N	125°04'36" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
21	PCA, BAGO OSHIRO, DAVAO DEL SUR	07°02'12" N	125°31'18" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
22	TWIN RIVERS, TAGUAM, DAVAO DEL NORTE (USEP-PAGASA)	07°20'48" N	125°43'30" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly
23	MSU, MARAWI CITY, LANAO DEL SUR	08°00" N	124°18" E	pdf, txt, csv, binary	500kb-1mb	T/R	8 hourly/hourly

High Frequency Radars

1	NETC	14°57'34"N	120°03'38"E	txt/csv	1mb-2mb	T	5min-15min
2	MASINLOC	15°34'16"N	119°54'57"E	txt/csv	1mb-2mb	T	5min-15min
3	BERONG, PALAWAN	9°28'29"N	118°12'13"E	txt/csv	1mb-2mb	T	5min-15min
4	PUNTA BAJA, RIZAL	9°02'34"N	117°37'55"E	txt/csv	1mb-2mb	T	5min-15min
5	LOBO, BATANGAS	13°35'55"N	121°15'45"E	txt/csv	1mb-2mb	T	5min-15min
6	CALAPAN	13°22'30"N	121°15'00"E	txt/csv	1mb-2mb	T	5min-15min
7	SAN RICARDO, SURIGAO	9°54'49"N	125°17'22"E	txt/csv	1mb-2mb	T	5min-15min
8	SAN FRANCISCO, SOUTHERN LEYTE	9°46'44"N	125°25'16"E	txt/csv	1mb-2mb	T	5min-15min
9	ZAMBOANGUITA	9°05'42"N	123°12'09"E	txt/csv	1mb-2mb	T	5min-15min
10	SAN JUAN, SIKUJIOR	9°09'29"N	123°29'32"E	txt/csv	1mb-2mb	T	5min-15min
11	STA MAGDALENA, SORSOGON	12°38'49"N	124°06'32"E	txt/csv	1mb-2mb	T	5min-15min
12	CALARAYAN, ALLEN, NORTHERN SAMAR	12°33'12"N	124°15'49"E	txt/csv	1mb-2mb	T	5min-15min
13	CARCAR	10°05.017' N	123°40.133' E	txt/csv	1mb-2mb	T	5min-15min
14	ARGAO	09°52.886' N	123°36.559' E	txt/csv	1mb-2mb	T	5min-15min
15	BUGUEY	18°17.397' N	121°50.066' E	txt/csv	1mb-2mb	T	5min-15min
16	BALLESTEROS	18°24.836' N	121°31.060' E	txt/csv	1mb-2mb	T	5min-15min
17	BACOLOD	10°38'29.88"N	122°55'22.79"E	txt/csv	1mb-2mb	T	5min-15min
18	SILAY	10°49'39.48"N	122°56'58.80"E	txt/csv	1mb-2mb	T	5min-15min
19	SAN ANDRES	13°36'0.66"N	124° 3'11.12"E	txt/csv	1mb-2mb	T	5min-15min
20	GUIJALO	13°44'6.55"N	123°52'14.26"E	txt/csv	1mb-2mb	T	5min-15min
21	JONOP(MALINAO)	13°25'33.60"N	123°42'20.40"E	txt/csv	1mb-2mb	T	5min-15min
22	PANGLAO	9°33'42.63"N	123°48'32.98"E	txt/csv	1mb-2mb	T	5min-15min
23	VALENCIA	9°35'55.09"N	124°14'8.49"E	txt/csv	1mb-2mb	T	5min-15min
24	SIKUJIOR	9°14'4.70"N	123°39'47.11"E	txt/csv	1mb-2mb	T	5min-15min
25	DILASAG			txt/csv	1mb-2mb	T	5min-15min
26	DINAPIGUS			txt/csv	1mb-2mb	T	5min-15min
27	JAGNA, BOHOL			txt/csv	1mb-2mb	T	5min-15min
28	MAMBAJAO, CAMUIGIN			txt/csv	1mb-2mb	T	5min-15min
29	MALIMONO, SURIGAO SEL NORTE			txt/csv	1mb-2mb	T	5min-15min

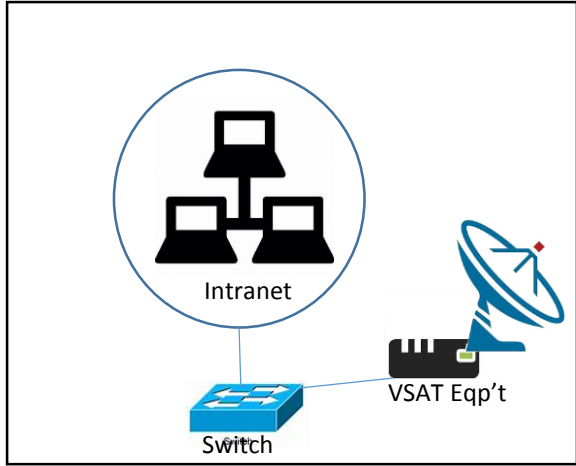
Flood Forecasting and Weather Centers

1	Abra River Center	17.563826	120.371778	doc, pdf, txt, csv, image	1mb-3mb	T/R	15min
2	Abulog River Center	18.35973	121.6302	doc, pdf, txt, csv, image	1mb-3mb	T/R	15min
3	Agusan River Center	8.674491 8.674491	125.9429	doc, pdf, txt, csv, image	1mb-3mb	T/R	15min
4	Aklan River Center		122.3636	doc, pdf, txt, csv, image	1mb-3mb	T/R	15min
5	Bicol River Center	13.62097	123.1614	doc, pdf, txt, csv, image	1mb-3mb	T/R	15min
6	Cotabato River Center	7.196361	124.2342	doc, pdf, txt, csv, image	1mb-3mb	T/R	15min
7	Ilog Hilabangan River Center	9.962063	122.840036	doc, pdf, txt, csv, image	1mb-3mb	T/R	15min
8	Jalaur River Center	10.77284	122.57945	doc, pdf, txt, csv, image	1mb-3mb	T/R	15min
9	Mandulog River Center	8.535722	124.557889	doc, pdf, txt, csv, image	1mb-3mb	T/R	15min
10	Tagoloan River Center	8.535722	124.557889	doc, pdf, txt, csv, image	1mb-3mb	T/R	15min
11	Tagum-Libuganon River Center	7.45214	125.7796	doc, pdf, txt, csv, image	1mb-3mb	T/R	15min
12	Agus River Center			doc, pdf, txt, csv, image	1mb-3mb	T/R	15min

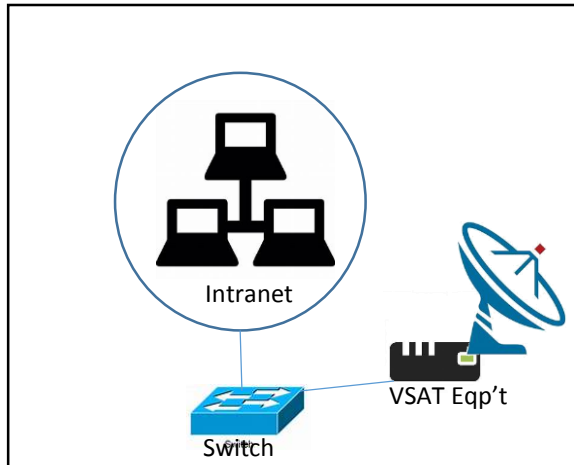
Weather Camera

1	SCIENCE GARDEN	14.6437N	121.0443E	image	100kb-500kb	T	5min-15min
2	TUGUEGARAO	17.6476055555555	121.75896944444445E	image	100kb-500kb	T	5min-15min
3	MACTAN	10.3221416666666	123.9797222222222E	image	100kb-500kb	T	5min-15min
4	LEGAZPI	13.1508N	123.72864166666668E	image	100kb-500kb	T	5min-15min
5	EL SALVADOR	8.53573611111111	124.5578861111111E	image	100kb-500kb	T	5min-15min
6	NAIA	14.5086N	121.0194E	image	100kb-500kb	T	5min-15min
7	BULAN	12.664847N	123.872956E	image	100kb-500kb	T	5min-15min
8	PILAR	12.921842N	123.675011E	image	100kb-500kb	T	5min-15min
9	MATNOG	12.585389N	124.085553E	image	100kb-500kb	T	5min-15min
10	TABACO	13.360667N	123.736128E	image	100kb-500kb	T	5min-15min
11	DINGALAN	15.381028N	121.395917E	image	100kb-500kb	T	5min-15min
12	BALER	15.760722N	121.635833E	image	100kb-500kb	T	5min-15min
13	DINALUNGAN	16.136N	121.959472E	image	100kb-500kb	T	5min-15min
14	PAGBILAO QUEZON	13.9658333333	121.7086111111	image	100kb-500kb	T	5min-15min
15	MASBATE CITY	12.3713888889	123.6302777778	image	100kb-500kb	T	5min-15min
16	BALUD MASBATE	12.0375	123.1911111111	image	100kb-500kb	T	5min-15min
17	VALENCIA BOHOL	9.6066666667	124.1986111111	image	100kb-500kb	T	5min-15min
18	ORMOC CITY	11.0038888889	124.6086111111	image	100kb-500kb	T	5min-15min
19	LILOAN SOUTHERN LEYTE	10.1591666667	125.1244444444	image	100kb-500kb	T	5min-15min
20	MAASIN LEYTE	10.1355555556	124.8375	image	100kb-500kb	T	5min-15min

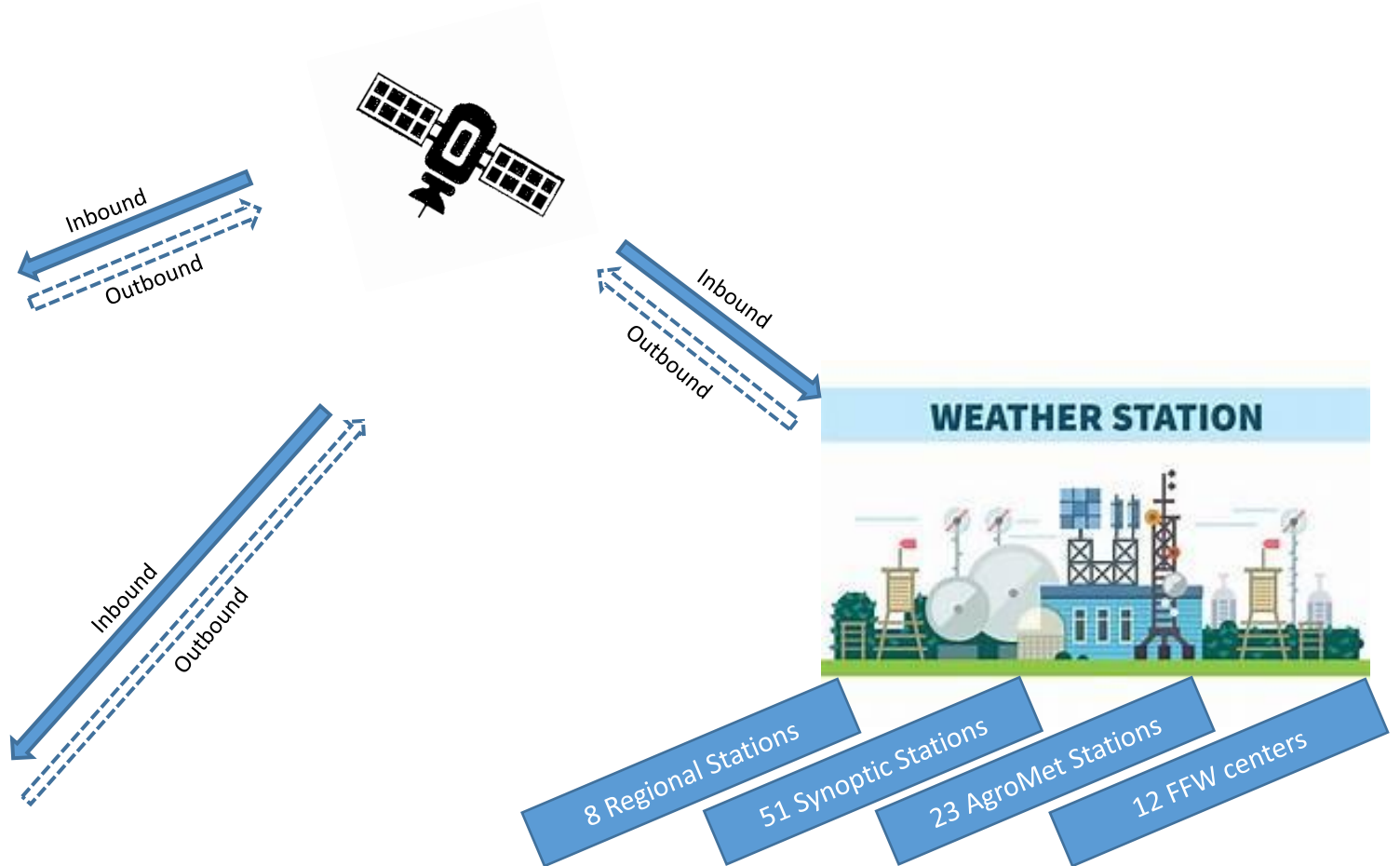
21	GUIAN SAMAR	11.0452777778	125.7555555556	image	100kb-500kb	T	5min-15min
22	MASINLOC ZAMBALES	15.5361111111	119.9466666667	image	100kb-500kb	T	5min-15min
23	APARRI CAGAYAN	18.3602777778	121.6305555556	image	100kb-500kb	T	5min-15min
24	STA ANA CAGAYAN	18.5088888889	122.1497222222	image	100kb-500kb	T	5min-15min
25	TAGBILARAN CITY	9.65	123.85	image	100kb-500kb	T	5min-15min
26	UBAY BOHOL	10.05	124.47	image	100kb-500kb	T	5min-15min
27	BISLIG SURIGAO DELSUR	8.1833	126.35	image	100kb-500kb	T	5min-15min
28	TANDAG SURIGAO DELSUR	9.0667	126.1833	image	100kb-500kb	T	5min-15min
29	HINATUAN SURIGAO DELSUR	8.3667	126.3333	image	100kb-500kb	T	5min-15min
30	BORONGAN SAMAR	11.6	125.4333	image	100kb-500kb	T	5min-15min
31	TACLOBAN LEYTE	11.24	125	image	100kb-500kb	T	5min-15min
32	MERCEDES CAMARINES NORTE	14.1	123.0167	image	100kb-500kb	T	5min-15min
33	ROXAS PALAWAN	10.3333	119.3333	image	100kb-500kb	T	5min-15min
34	CORON PALAWAN	12	120.2	image	100kb-500kb	T	5min-15min
35	HONDA BAY PALAWAN	9.9	118.7833	image	100kb-500kb	T	5min-15min
36	GUSA CAGAYAN	8.478751	124.671921	image	100kb-500kb	T	5min-15min
37	BOLINAO PANGASINAN	16.3333	119.8833	image	100kb-500kb	T	5min-15min
38	ANTIQUÉ	11.2333	122.1	image	100kb-500kb	T	5min-15min
39	SIPALAY CITY	9.75	122.4	image	100kb-500kb	T	5min-15min
40	BAYAWAN CITY	9.3667	122.8	image	100kb-500kb	T	5min-15min
41	ZAMBOANGA CITY	6.9167	122.0833	image	100kb-500kb	T	5min-15min
42	DAAN BANTAYAN CEBU	11.25	124	image	100kb-500kb	T	5min-15min
43	BAGAC BATAAN	14.6	120.4	image	100kb-500kb	T	5min-15min
44	SAN FERNANDO LA UNION	16.6167	120.3167	image	100kb-500kb	T	5min-15min
45	SAN JOSE MINDORO	12.35	121.0667	image	100kb-500kb	T	5min-15min
46	CATICLAN AKLAN	11.8978	121.9094	image	100kb-500kb	T	5min-15min
47	SUBIC AIRPORT	14.33N	120.46E	image	100kb-500kb	T	5min-15min
48	PALAWAN AIRPORT	9.7403806	118.7564956	image	100kb-500kb	T	5min-15min
49	BUTUAN AIRPORT	8.946111N	125.4825E	image	100kb-500kb	T	5min-15min
50	LAOAG AIRPORT	18.183056	120.533611	image	100kb-500kb	T	5min-15min
51	DUMAGUETE AIRPORT	9.333056	123.299167	image	100kb-500kb	T	5min-15min
52	ZAMBOANGA AIRPORT	6.9197309	122.0623655	image	100kb-500kb	T	5min-15min
53	ROXAS AIRPORT	11.6017255	122.7499021	image	100kb-500kb	T	5min-15min
54	CLARK AIRPORT	15.182222	120.550833	image	100kb-500kb	T	5min-15min
55	DAVAO AIRPORT	7.1275	125.654722	image	100kb-500kb	T	5min-15min



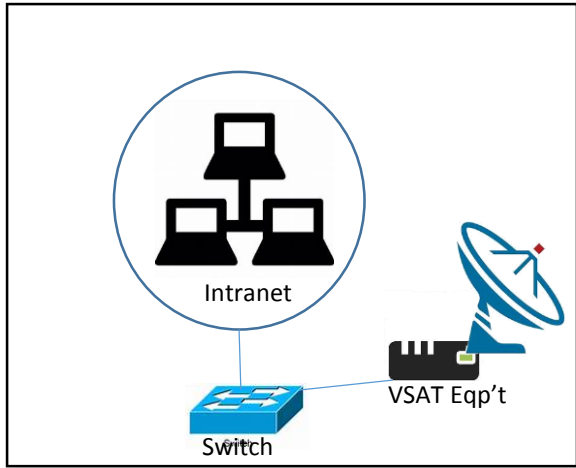
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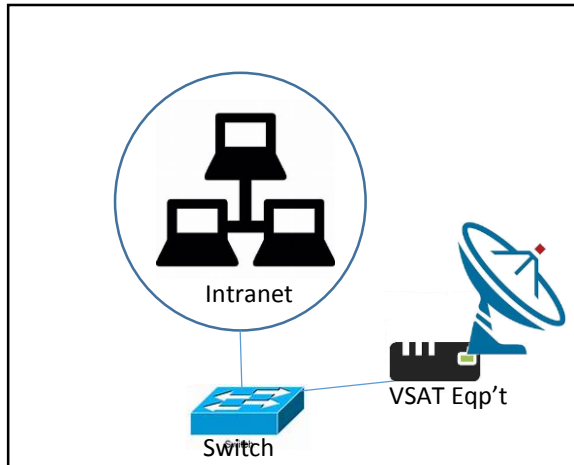
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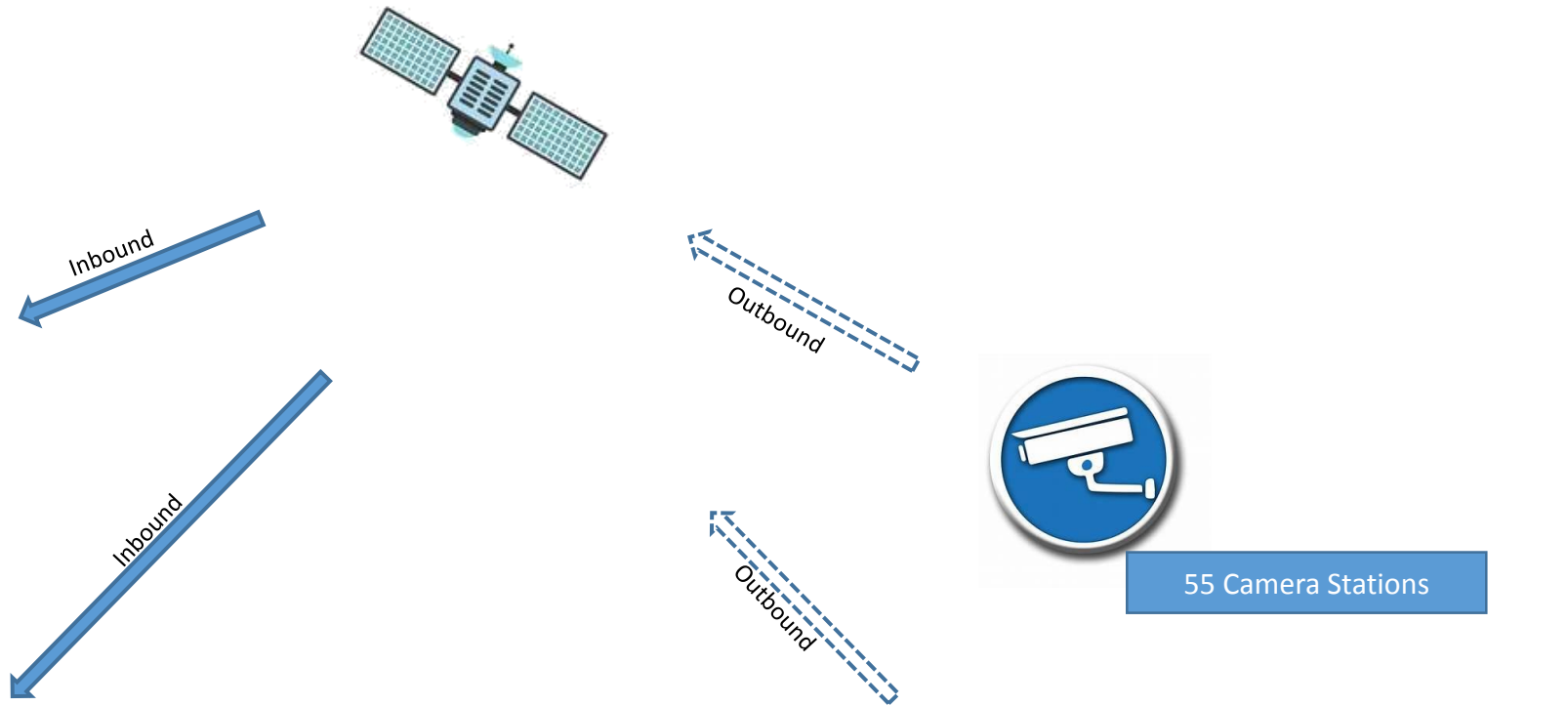
Annex B: C-Band Network



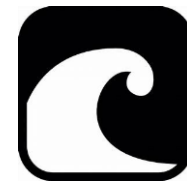
QC Network Operation Center (NOC)



Mactan Network Operation Center (NOC)

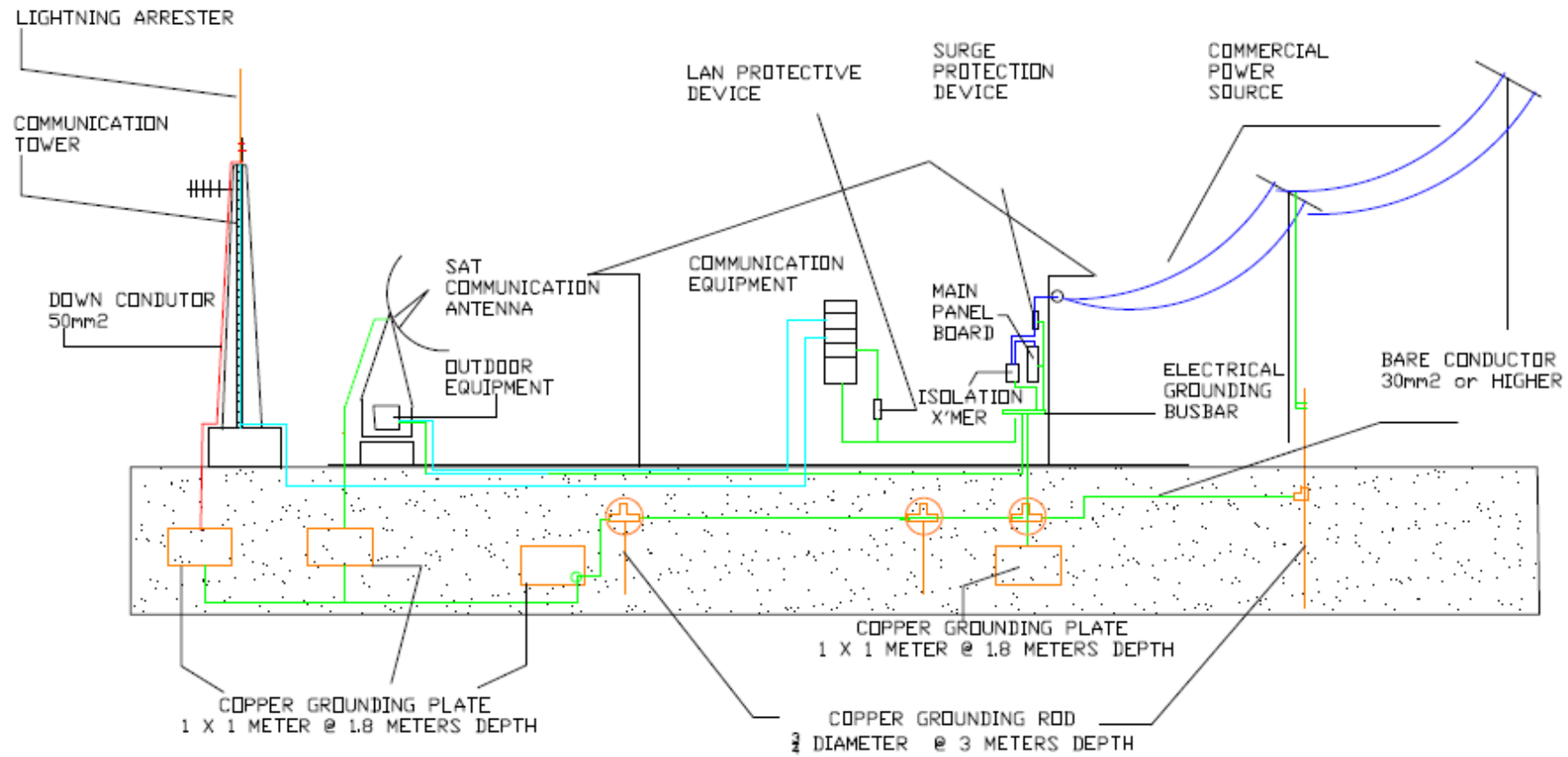


55 Camera Stations



29 High Freq. Radar Stations

Annex C: VSAT Network for Camera and HFR Stations



NOTE: ALL BONDED CONNECTION SHOULD BE MADE AT THE GROUND IN A PERMAWELDED PROCESS

INSTALL ADDITIONAL GROUNDING ROD OR CHEMICAL GROUNDING ROD IF NECESSARY FOR ENHANCEMENT TO ACHIEVED THE LOWEST EARTH RESISTANCE (LESS THAN 1 OHM)

ALL ADDITIONAL OUTDOOR COMMUNICATION EQUIPMENT WITH ANTENNA SYSTEM SHOULD HAVE A GROUNDING SYSTEM WITH LESS THAN 1 OHM BEFORE BONDING TO THE EXISTING GROUNDING SYSTEM.

Annex D: Lightning and Grounding System