



EAST MICRONESIA CABLE SYSTEM REQUEST FOR INFORMATION (RFI) UPDATE #1

Date: Sept 20, 2017

REFERENCE DOCUMENT: East Micronesia Cable System Request for Information Package, Dated 28 Aug, 2017

SUBMISSION DEADLINE CHANGE

The original deadline for submission of Sep 28, 2017 has been extended. **The new submission deadline is now Mon October 16, 2017 by 5pm (Pohnpei- GMT+11).**

Electronic responses to the RFI are requested to be emailed to the EMC Joint Project Manager at the following e-mail address – tundef@kitskoo.com. The subject line of the e-mail should contain the words “EMC System Design”.

TECHNICAL SPECIFICATIONS: CLARIFICATIONS

1. Background

Evolution of the Chuuk – Pohnpei (C-P) Cable System and the recent change to that system’s configuration.

The Chuuk – Pohnpei Cable System was contracted to NEC for design, manufacture, and installation.

Specifically:

- Originally the C-P System was to integrate into the existing Pohnpei – Hantru Segment 4 System at the junction box between the PLSE and the rest of the segment. This was considered viable since the PLSE installed had at least three fiber pair contained within it for the specific purpose of enabling a new system connection without the need for a separate landing on Pohnpei. At the time (2009) there was consideration toward outer island connectivity.
- The marine survey for the C-P System revealed that the existing PLSE joint box was on a severe slope which was deemed unsuitable for a Branching Unit. Consequently, the decision was made to locate the Branching Unit some 27 km from the original joint box on a more benign bottom. This also mandated that new cable be manufactured and installed from the existing PLSE joint box to the selected location of the BU in order to extend the 3 Fiber Pairs, 2 of which terminated at the existing PLSE joint box.



- In addition, consideration was given to the proposed East Micronesia Cable System, with the expectation that that future system would be integrated into the C-P System.
- Consequently, from the existing Pohnpei – Hantru PLSE joint box, 3 fiber pair would be available to the C-P BU. At that point, 1 FP would be designated for continuation to the Hantru System, and the remaining 2 fiber pair would traverse westward to another joint box where it was anticipated that the EMCS would be integrated into the C-P System. At that BU, 1 fiber pair was designated for C-P and the other fiber pair designated for EMCS.
- This original baseline for C-P was in play until July 2017, when, due to various circumstances, FSM decided, with the guidance of NEC, that the better C-P System configuration was one that resulted in C-P being landed directly into the existing Pohnpei - Chuuk Segment 4 Beach Manhole, which had been provisioned with spare seaward ducts. This became the new baseline for C-P and is depicted in Figure 5 of Reference 1.
- Further, the various cable segments for C-P, with their respective fiber counts were utilized in this configuration, and designed to still support an EMCS Branching Unit integration into C-P as depicted by Option 1, Figure 7 of Reference 1.

2. Branching Unit Locations

Option 1, BU3 - Integration of the EMCS into Chuuk - Pohnpei Cable System

The Chuuk - Pohnpei System is currently being installed. It is an end to end system as shown in Figure 5 of the RFI. There is no Branching Unit installed in the system.

Figure 7, depicting Option 1, shows the installation of BU3 into the Chuuk -Pohnpei Cable System. I have attached the planned RPL for the Chuuk - Pohnpei Cable System. The expected position of BU3 into the C-P System is at Position #79 on the RPL.

Option 3, BU3 - Integration of the EMCS Directly Into the Existing Pohnpei - Hantru Segment 4

Option 3 shown in Figure 12 envisions a BU integrated directly into the existing Pohnpei - Hantru Segment 4, at some location between the single repeater of Segment 4 and the existing Branching Unit into Hantru. The thinking here is to insert an OADM so the EMCS traffic would go directly to Guam without going to Pohnpei. The exact location would be dependent on OSNR and insertion losses from the new BU to the first repeater on the Hantru Trunk.

Branching Unit between Tarawa and Nauru

There are option variants that place a Branching Unit between Tarawa and Nauru for a future system integration. We have no specific location in mind.



3. Option 1 Clarifications

The following are clarifications/amplifications:

- Powering:
 - Referring to Figure 7 of Reference 1, the cable segment from BU 3 to the Beach Manhole has no active components (that is requires no electrical powering).
 - It was the intent of this Option 1 to provide for complimentary powering for both C-P and EMCS using a PFE in Chuuk (on the west side of C-P) and a PFE in Tarawa (on the East Side of EMCS).
 - This would necessitate that the power feed equipment and repeaters utilized by EMCS would need to be compatible with the C-P repeaters and PFE, since this system was to be installed in the 3rd Qtr of 2017.
- Transmission Directionality
 - In Figure 7, Option 1-1-1-1 the yellow arrows at each BU on the EMCS indicated that traffic was only between the branch and Pohnpei, while in Figure 8, Option 1-2-1-1, traffic could flow in either direction at the respective branching units.

4. Option 2 Clarifications

The following are clarifications/amplifications: None

5. Option 3 Clarifications

The following are clarifications/amplifications:

- The intent of this option was to enable traffic from EMCS to be immediately directed to Guam at the BU integrated into the Pohnpei – Hantru Segment 4, without having to go through Pohnpei.
- The existing BU that integrates the Pohnpei branch into the Hantru Trunk is a passive BU with a wavelength filter system that defines the wavelengths that are passed to and from both FSM and the Marshall Islands.
- The reason that an option repeater was shown on the Pohnpei side of BU3 was to account for insertion losses of BU3, and to ensure that the optical power of the wavelengths from Pohnpei were equivalent to the existing optical power when these signals arrive at the first repeater on the Hantru Trunk.
 - The use of a repeater as described above, requires that the new repeater and the existing repeater in the Pohnpei- Hantru Segment 4 are operating at the same current.



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- Alternatively, a responding system supplier could cut out and replace the Pohnpei-Hantru Segment 4 from the existing repeater to the LBO and PWF joint boxes on that Segment.
 - Note that the Branching Unit on the Hantru Trunk is owned and controlled by Hantru, and not open to replacement or interference.

6. General

- The 3rd and 4th bullets of slide 13 of Reference 1 refer to end-to-end guarantees for connectivity. RFI responders are requested to interpret and propose their approach.
- A potential timeline for the EMCS Project, might be as follows:
 - C&MA in 4th Qtr 2017
 - Request for Proposal (RFI) in 1st Qtr 2018
 - Selection, late in 1st Qtr 2018
 - Contract Award 2nd Qtr 2018
 - System Implementation from 2nd Qtr 2018 to 4th Qtr 2019

Note: This is NOT a Request for Proposals. NO SOLICITATION DOCUMENTS EXIST AT THIS TIME. The potential timeline above does not constitute a commitment, implied or otherwise, that The Federated State of Micronesia, Kiribati and/or Nauru will take any procurement action in this matter. Neither The Federated State of Micronesia, Kiribati and/or Nauru will be responsible for any costs incurred or action taken by relying on the information provided above.

- The only publicly available study of Pohnpei landing(s) that may be both available and relevant to the RFI analysis might be a Desk Top Study (DTS) done for the Pohnpei - Hantru Segment 4 about 10 years ago. The availability of this study and permission to release it is unknown and does not currently form part of this RFI. Responders should not rely on the availability of this study prior to the deadline.
- The EMCS Team will be happy to review any and all comments, suggestions and options from potential suppliers and responders, that meet the desired connectivity.