

STATE OF HAWAII

DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
OFFICE OF ENTERPRISE TECHNOLOGY SERVICES

HONOLULU, HAWAII

Legal Ad Date: Tuesday May 3, 2016

INVITATION FOR BIDS
No. IFB-16-003

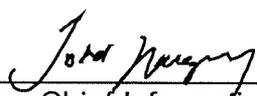
SEALED BIDS
FOR
COMPREHENSIVE MAINTENANCE AND CONTINUOUS MONITORING OF THE
STATEWIDE DIGITAL MICROWAVE RADIO COMMUNICATIONS SYSTEM
AND ITS ASSOCIATED EQUIPMENT

will be received up to and opened at 10:00 a.m. (HST)
on
Friday May 27, 2016

at the Office of Enterprise Technology Services (ETS) Kalanimoku Building,
1151 Punchbowl Street, Room B-10, Honolulu, HI 96813

Technical questions relating to this bid solicitation shall be directed to Mr. Vincent E. Krog,
telephone (808) 586-1930 ext. 625, facsimile (808) 586-1962 or e-mail:
vincent.e.krog@hawaii.gov.

Procurement questions relating to this bid solicitation shall be directed to Christie L. Ferreira,
telephone (808) 586-1920 ext 307, facsimile (808) 586-1962 or e-mail:
christie.l.ferreira@hawaii.gov



Todd Nacapuy, Chief Information Officer

COMPREHENSIVE MAINTENANCE AND CONTINUOUS MONITORING
OF THE STATEWIDE DIGITAL MICROWAVE RADIO
COMMUNICATIONS SYSTEM AND ITS ASSOCIATED EQUIPMENT
IFB-16-003

Chief Information Officer
Department of Accounting and General Services
Office of Enterprise Technology Services
State of Hawai'i
Honolulu, Hawai'i 96813

Dear Sir:

The undersigned has carefully read and understands the terms and conditions specified in the Specifications, Special Provisions, and in the General Conditions, Form AG-008 (Rev. 10/17/13) attached to IFB-16-003; and hereby submits the following offer to perform the work specified herein, all in accordance with the true intent and meaning thereof.

The undersigned further understands and agrees that by submitting this offer, 1) he/she is declaring his/her offer is not in violation of Chapter 84, Hawai'i Revised Statutes, concerning prohibited State contracts, and 2) he/she is certifying that the price(s) submitted was (were) independently arrived at without collusion.

Date: _____
Telephone No.: _____
Fax No.: _____
e-mail Address: _____

Respectfully submitted,

Exact Legal Name of Offeror

Payment address, if other than street
address at right:

Authorized Signature (Original)

Hawaii General Excise Tax Lic. I.D. No.:

Title

Social Security or Federal I.D. No.:

Street Address
City, State, Zip Code

If Offeror shown above is a "dba" or a "division" of a corporation, furnish the exact legal name of the corporation under which the contract, if awarded, will be executed:

Offeror is: Individual Partnership Corporation Joint Venture

State of incorporation: Hawai'i _____ *Other _____
(Specify jurisdiction)

*If "other", is corporate seal available in Hawaii? Yes No

The following bid is hereby submitted for the Comprehensive Maintenance and Continuous Monitoring of the Statewide Digital Microwave Radio Communications System and Its Associated Equipment (IFB-16-003)

Comprehensive maintenance and continuous monitoring of the HAWAIIAN / Overbuild / Harbors Statewide Digital Microwave Radio Communications System and Its Associated Equipment.

\$	<input type="text"/>	Per Month		
		X 12 = Annual Amount	\$	<input type="text"/>
				Per Year

Additional Link Maintenance

1. Cost Per Link Beyond 5 Additional Links.

\$	<input type="text"/>	Per Month		
		X 12 = Annual Amount	\$	<input type="text"/>
				Per Year

Emergency Callout Time and Material (T&M) Charges

1. Bid Price for single Emergency Callout for Contractual Items

\$	<input type="text"/>	Per Event
----	----------------------	-----------

2. Bid Price for single Mobilization Fee for Non-Contractual Items

\$	<input type="text"/>	Per Event
----	----------------------	-----------

3. Hourly Rate for Emergency Callout

(Each Hour beyond 2 hours for Contractual Items)	\$	<input type="text"/>	Per Hour
(Also Hourly Rate for Emergency Callout for Non-Contract Items)			

SUM TOTAL	\$	<input type="text"/>
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OFFEROR: _____

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INSURANCE COVERAGE (if applicable)

	<u>Carrier</u>	<u>Policy No.</u>
1. Commercial General Liability	_____	_____
2. Worker's Compensation	_____	_____
3. Temporary Disability	_____	_____
4. Prepaid Health Care	_____	_____
5. Automobile Insurance	_____	_____

CONTRACTORS LICENSE

Offeror has attached a copy of its current State of Hawaii C-15b Contractor's License.

REFERENCES

Offeror shall list below the names and addresses of three (3) companies or government agencies to which it has provided or is currently providing services on licensed, high-capacity digital microwave radio systems similar to those requested herein. At least one of the references provided must be for services provided within the State of Hawai'i:

	<u>Name</u>	<u>Address</u>	<u>Contact Person</u>	<u>Telephone No.</u>
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____

OFFEROR: _____

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Significant Dates

Specification Released	Tuesday May 3, 2016
PreBid Site Visits	Tuesday May 10 – Thursday May 19, 2016
Questions Due	Friday May 20, 2016
Bids Due / Bid Opening	Friday May 27, 2016

SPECIFICATIONS

1 INTRODUCTION

The Office of Enterprise Technology Services (ETS) of the State of Hawai'i Department of Accounting and General Services (DAGS) operates a microwave system statewide which is comprised of four main parts: The HAWAIIAN, the Overbuild, Anuenue, and Harbors. The Anuenue is co-owned as a partnership between the State and the USCG. Each segment of the network is described herein, however the Anuenue is **not** part of this solicitation. The combination of the HAWAIIAN, Overbuild, and Harbors microwave links will be referred to as ETS Digital Microwave Radio System. All portions of this system are SONET so voice traffic can be prioritized and designed to travel a specific non-dynamic route. Not only are the routes controlled but this also facilitates traffic segregation. There is no method by which any customer data stream could be employed to investigate any other data stream. Ethernet traffic will be considered dynamic in the event the radio path degrades to the point that the full bandwidth can no longer be supported.

One of the statewide digital microwave radio communications systems owned and operated by the ETS of the State of Hawai'i DAGS is known as the HAWAIIAN, the HAWAII Wide Area Integrated Information Access Network. The HAWAIIAN digital microwave system interconnects five State Office Buildings (SOBs) in Lihue, Honolulu, Wailuku, and Hilo and includes equipment at 15 sites located throughout the State. ETS owns and operates DC power plants and dehydrators at all but one of the HAWAIIAN facilities and at other remotely located radio facilities that are not part of the HAWAIIAN system. For the purposes of this specification, the other DC power plants, dehydrators, and channel banks located at non-HAWAIIAN facilities listed herein shall be considered as systems and equipment associated with the HAWAIIAN. Most of the digital microwave radios in the HAWAIIAN system carry a DS3 (45 Mbps) payload; the last link segments into downtown Honolulu include a radio with OC-3 capacity and an OC-12 capacity loop carried both on optical fiber and free space optics (FSO) link connections. Data, voice, and video signals transported in digital form over the HAWAIIAN system provide State departments and agencies with communication services that enable them to perform their daily tasks and serve the public. The HAWAIIAN digital microwave provides essential over-the-water connections to link State government networks on the neighbor islands with each other and to the ETS network center at the SOB in Honolulu.

A second portion of the digital microwave radio communications systems owned and operated by ETS/DAGS is known as the Overbuild (OB). This digital microwave is intended to augment the HAWAIIAN system with primarily Ethernet carrying OC3 (155 Mbps) links. At each of the State's radio sites, a Fujitsu 4100ES was installed to route traffic between radio links touching that physical node. These Fujitsu multiplexers were put in as part of the Overbuild installation. They not only interconnect OC3 radios, and OC12 (620 Mbps) fiber rings, but they also drop out two primary formats, T1s and Point to Point (PtP) Ethernet links. Cross connects are done through software. The increased capacity and flexibility offered by the Overbuild radios and Multiplexers has proved necessary as much of the First Responder systems being produced today

employ Ethernet interfaces. This portion of the network shall be maintained as part of the contract issued pursuant to this solicitation.

The third portion of the ETS/DAGS microwave network is the Anuenue partnership. It is owned and maintained by the USCG. The State provides facilities in exchange for ½ the bandwidth on each OC3 link. USCG has employed Fujitsu 4100LS at the endpoints of their links for the same interconnect and data handoffs discussed previously with the OB Fujitsu 4100ES. All maintenance, and circuit routing / cross connects are to be done by USCG. If observed while on site, any issues with Anuenue equipment are only, and immediately, to be reported to the Anuenue contact. Take no action unless directed by both Anuenue Contact and ETS technical contact. This portion of the network is NOT maintained as part of the contract issued pursuant to this solicitation.

The last segment of the microwave network was put in to support DOT Harbors Division video traffic. Links were added from each Harbor and through the OB network to augment the available data capacity. All links installed have OC3 capacity. This portion of the network shall be maintained as part of the contract issued pursuant to this solicitation. Vendor will need to have a Transportation Worker Identity Credential (TWIC) card for all technicians servicing the units at the Harbor locations.

2 SITE LOCATIONS

2.1 All Microwave System Locations

Work on the microwave system shall be performed at the following locations:

Island of Kauai

- Kukuilono, Kauai, located on the Kukuilono Park and Golf Course at 854 Puu Road, Kalaheo, HI 96741. Future Site.
- Kokee, Kauai, located on Kokee Rd approximately 9.3 miles after turning off Kekaha Road. Future Site.
- Pohakuwa'awa'a, Kauai, located near the end of Kokee Road at 22° 8'22.82"N, 159°38'46.62"W, just South of the beginning of the Awa'awapuhi Trail. This is currently a passive site.
- Nawiliwili Harbor, located along Waapa Road and Kanoa Road in Lihue, Kauai. TWIC badge required.
- Port Allen Harbor, at the end of Olali St and Waialo Road in Eleele, Kauai. TWIC badge required.
- Kauai High School, a passive repeater on a pole at 3577 Lala Road, Lihue, Kauai. Must check in with school office prior to access.
- Kauai Civil Defense, located at 3990 Kaana Street, Lihue, Kauai.

- Lihue SOB (Basement and Roof), Kauai, located at 3060 Eiwa Street, Lihue.
- Mt. Kilohana, Kauai, located mauka of the agricultural fields above Lihue several miles past the end of Ehiku Road. Four-wheel drive required for access.

Island of O'ahu

- Kaena Point. Site yet to be developed.
- Pahole, located past the campground known as "Peacock Flats". Turn left roughly 2 miles past Waialua High School. At this time access to the compound is arranged through DLNR Moiliili baseyard, contact Ryan Peralta. ETS intends to arrange for keys which will eventually be available at the Assistance Center, Kalanimoku SOB in Honolulu. Future Site.
- Mt. Kaala, O'ahu, located at Mt. Kaala Air Force Station (AFS) at the summit of Mt. Kaala. The facility is reached by seven-mile long access road that starts off of the Dillingham Highway about 1 mile past Waialua High School. Travel on the steep, single-lane access road is restricted by the Federal Aviation Administration to four-wheel drive vehicles only. Access is ONLY allowed after your information has been submitted for background check.
- Mauna Kapu Upper (ETS) and Mauna Kapu Lower (USCG)
- Kapolei SOB, located at 601 Kamokila Blvd., Kapolei, O'ahu.
- Kalaeloa Harbor, located at the end of Malakole Street in Kalaeloa. TWIC badge required.
- Red Hill Aliamanu Army facility, located on the Aliamanu Army base. Access is arranged through the Army. ETS does not expect to arrange for keys to be kept at the Assistance Center for this site. Future Site.
- Honolulu Airport, O'ahu, located in the old control tower atop the Overseas Terminal Administration Building at the Honolulu International Airport, 300 Rodgers Blvd., Honolulu. AOA badge required.
- Pier 1 Pole, located near the end of the entrance to Honolulu Harbor on the Diamond Head side of the harbor. TWIC badge required. Future Site.
- Pier 2 Harbor's Main Office and Pole, located through one of two checkpoints depending upon the existence of a passenger ship in dock. They can be accessed down Channel Street or Forest Avenue. Monopole and equipment room are located at 21°18'0.01"N, 157°51'59.07"W. TWIC badge required.
- ETS Round Top, O'ahu, located within Puu Ualakaa State Wayside Park at 3270 Round Top Drive, Honolulu.

- Leiopapa A Kamehameha SOB (LAK SOB or State Office Tower or SOT), O'ahu, 235 Beretania Street, Honolulu.
- Capitol Basement, located at 415 S Beretania Street, Honolulu, HI 96813. Sheriff Dispatch.
- Kalanimoku SOB (Basement, 5th Floor and Roof), O'ahu, located at 1151 Punchbowl Street, Honolulu. Basement equipment is located in the Assistance Center.
- Diamond Head Rim, located on the rim of Diamond Head Crater. To be accessed by first contacting State Civil Defense or HI-EMA in the bunker known as Birkhimer to the right inside the crater as accessed from the Hawaii Kai side. If access ingress and egress procedures change, the bunker where access is arranged is inside the crater, on the Honolulu side of the tunnel that faces Hawaii Kai.
- Koko Head, O'ahu, located within the Hanauma Bay Nature Preserve about one mile south of Kalaniana'ole Highway, State Route 72, at 7501 Kalaniana'ole Highway, Honolulu. Hard right when turning into the bay entrance and access the gate just behind the bus stop.
- Waimanalo Ridge, located at the end of Kamehame Ridge. There are a series of gates to the facility. The FAA compound is at the end of the limited access road.
- Puu Papaa. Located on the hill above the Kaneohe Marine Corps Air Station Main Gate. This is a Hawaiian Tel / Insite Wireless site. Access rules are currently being defined. Turn off Kaneohe Bay Drive onto the road to access the site just to the Kailua side of the H3 overpass.
- Kahuku Site yet to be developed. Future site, perhaps Kawela.

Island of Lanai

- Puu Kilea, Lanai, located in the forest above Lanai City on Munro Trail, approximately 3 miles past the end of the paved section of the trail. Four-wheel drive vehicle required for access. Keys must be retrieved on O'ahu.
- Kaumalapau Harbor, located within the Young Brother's facility approximately 3.4 miles West of the airport entrance. Leave the airport and turn left, but since rental cars must be retrieved from Lanai City, one will have to return to the airport and continue past it by 3.4 miles. TWIC Badge required.

Island of Molokai

- Puu Nana, Molokai, located about ½ mile south of Maunaloa Road, in the Kaluakoi District of Molokai about 11 miles west of Kaunakakai. Four-wheel drive vehicle required for access. Exit the airport and head West 4.5 miles on Mauna Loa Highway. Gate to the dirt road which leads to the facility is on the left. At this time keys must be retrieved from O'ahu. Access procedures may change.
- Kaunakakai Harbor, located in the Young Brother's Yard out on the pier. TWIC badge required.

Island of Maui

- Haleakala, Maui, located in the saddle area of the summit of Haleakala. The site access road begins on the left past the Haleakala National Park Summit Overlook parking area. There is a large gate after a cattle guard.
- USCG Haleakala, Maui, located in the saddle area of the summit of Haleakala. The site access road begins past the Haleakala National Park Summit Overlook parking area. Continue on straight and do not turn left at the gate. The USCG site is within the area with the observatories. Access only as arranged with Anuenue partners USCG.
- Wailuku SOB, Maui, located at 54 High Street, Wailuku. Radio room is on the top floor. Antennas are on the roof.
- Kahului Harbor, located on the big yellow monopole off Ala Luina Street in Kahului Maui. TWIC badge required.
- Puu Nia Niau, Maui, located just off of SR 378 (Haleakala Crater Road) approximately two-tenths of a mile below the entrance to the Haleakala National Park (The park entrance is near mile post 10). Access to the site is via a one-half mile long trail. This is a commercial radio site owned by Haleakala Ranch. Four-wheel drive vehicle required for access.

Island of Hawaii

- Kawaihae Harbor monopole, located some 100' SW from the harbor office. TWIC badge required.
- Kahua Ranch, located approximately 9 miles after turning onto Kohala Mountain Road (Hwy 250) from Kawaihae Road in Waimea. After turning off Kohala Mountain Road, the path takes a winding path through pastures on 1.4 miles of dirt road. Four wheel drive is recommended. Care must be taken not to disturb the livestock by use of vehicle proximity or vehicle horns.
- Kaupulehu, Hawai'i, located north of Kona, 2.2 miles mauka of the 29 mile marker on the Mamalahoa highway (State route 190) immediately adjacent to the existing HELCO commercial facility. Four-wheel drive vehicle required for access.

- Humuula, Hawai'i, located on the south slope of Mauna Kea, approximately one mile West of the Mauna Kea access road (turnoff is to the left just past the Mauna Kea Information sign). Four-wheel drive vehicle required for access over a trail that traverses open pasture.
- Mauna Loa, located about 8.6 miles off Saddle Road. The site is located by turning off Saddle Road (Hwy 200) onto Hilo Kona Road for approximately 4 miles, and then turning left onto Observatory Rd. for 4.4 miles. At the end of the road, turn left and the site is on the right approximately .16 miles after the turn.
- Kulani Cone, roughly 2.2 miles beyond the Kulani Cone Correctional Facility, which is 18.5 miles West of Hwy. 11 on Stainback Hwy. The radio facility has GPS coordinates 19°31'14.43"N 155°17'57.94"W. Access arranged through ETS and prison warden.
- Alala Cone, North of Hilo.
- Moinuiahea, overlooking Kona.
- UH Hilo, Hawai'i, located at the University of Hawai'i at Hilo Campus Center building, 200 W. Kawili Street, Hilo. Soon to be moved to Waiakea.
- Waiakea, Hawai'i, a site under construction by the State of Hawai'i, located in Hilo, West of Komohana Street on the Water tower access road, approximately 1500 ft. North of Puainako Street.
- Hilo SOB, Hawai'i, located at 75 Aupuni Street, Hilo. Equipment now exists in spaces located in the Basement and Roof. During the course of this contract, equipment and/or its upgrades and/or replacements shall be in the new ETS equipment room on the 2nd floor.
- USCG Hilo, located at 29 Kuhio Street, Hilo Hawaii 96720. Coast Guard must be contacted one week prior to access.
- Hilo Harbor Office, located at 80 Kuhio Street, Hilo, Hawaii 96720. Merely 500' N NE of the USCG Hilo tower. TWIC badge required.

3 SCOPE

Everything in this section is to be bid as one lump sum on the bid sheet.

3.1 General Work Requirements

Details on the equipment to be maintained, specifics of the services required, hours of operation, alarm response timeliness requirements, other responsibilities and provider qualifications are listed below.

3.1.1 Maintenance

Provide comprehensive maintenance and continuous monitoring of the operational status of the ETS digital microwave radio system components and associated equipment. Specific maintenance requirements are defined herein and must be performed by trained and experienced employees who perform this task as their primary function, i.e., work on the State's digital microwave radio system takes precedence over all other tasks.

3.1.2 7X24 Maintenance

Provide this comprehensive maintenance and continuous monitoring of the operational status of the ETS digital microwave radio system and associated equipment as defined herein on a 7x24 (7 day-a-week, 24 hour-per-day) basis with no additional fees or costs to the State;

3.1.3 Preventative Maintenance Inspection

Perform, every six months, all of the equipment manufacturer's preventative maintenance checks and services recommended to be done during the manufacturer's major service interval (regardless of the manufacturer's recommended interval) and produce a written report detailing the system status and the work performed;

3.1.4 Weekly Report

Produce and distribute to State Radio Engineer, each week, a written summary report of all system alarms, problems, incidents, repairs, cures, upgrades, and any status changes on inventory or items under repair (this written summary report may be sent via electronic mail and/or fax);

3.1.5 Warranty

Procure on an annual basis and maintain for the duration of the contract the extended factory warranty repair for the Aviat (Harris) microwave radio equipment, if and as available, from Aviat Networks (formerly known as Harris Stratex and Harris MCD) as the Synergy Extended Warranty support program;

3.2 Warehouse Storage

Provide a single warehouse space, as specified herein, for spare parts for the radio systems and associated equipment, restoration spares, and test equipment;

3.3 Subcontracting Services

As described below, subcontracting shall be permitted ONLY when providing NOC services, or riggers for repointing antennas to resolve traffic/link affecting issues.

3.3.1 Link Alignment / Antenna Repointing

While troubleshooting a traffic affecting issue, Receive Signal Level (RSL) may indicate an alignment issue. While extremely rare, dishes can occasionally be found out of alignment for various reasons. ETS strongly recommends the Offeror has on staff, climb certified riggers to facilitate the expedient resolution of any traffic affecting link alignment issue. However the Offeror is not responsible under this specification for employing riggers or skilled tower workers to provide emergency repointing of antennas. In a payload affecting incident, the Offeror is responsible for returning the link to operational status with RSL levels at, or near original design levels. For such repairs, with written approval from ETS, employ the use of certified subcontractors to accomplish the tower work necessary for remediation of the link issues. If employing a subcontractor for tower work, the Offeror is responsible under this specification, at no additional charge to the State, for on-site coordination and monitoring of radio systems when antennas are repointed, re-installed, or replaced. While the Offeror is responsible for all costs associated with the realignment, to offset rigger fees the Offeror may invoice ETS for \$5000 per corrective incident as approved by State Radio Engineer.

3.3.2 7X24 Monitoring

Offeror shall, as part of the contract and included with their bid, provide Network Operations Center (NOC) functionality to monitor the health of the system and any emergent alarms 24 hours a day, 7 days a week. Offeror must procure this service from Aviat for the sole use of monitoring the State of Hawaii's Digital Microwave Radio Communication System. No other entity will be given access to remotely monitor the system. Offeror will agree to respond to service calls from Aviat NOC within the contractual timeframes specified herein, 24 hours a day, 7 days a week.

3.3.2.1 Services Provided by Aviat Network Management Center (NMC)

Aviat Networks is providing the following bundled services:

Surveillance and Network Monitoring

- Continuously monitor network elements
- Detect / Identify Faults and Alarms

Event Management Triage

- Correlate Alarms where appropriate
- Review Maintenance Schedules / Weather Patterns / Known Issues
- Assess Severity and Service Impact

Troubleshooting

- Diagnose and isolate the fault / alarm
- Coordinate restoration and repair – remotely or onsite
- Actively manage the event from "cradle to grave."
- NOTE: Aviat Networks strives to troubleshoot and resolve issues remotely prior to or in place of dispatching field resources to site.

Notification

Report events to customer in real-time via Phone / Email / Portal

Trouble Ticketing

- Document the fault
- Manage ticket until fault is resolved
- Generate trouble ticket reports
- Capture lessons learned from each incident into Aviat's Knowledgebase for future reference

Call out and Dispatch

- Dispatch field operations and vendors for physical analysis and repair
- Coordinate all aspects of the dispatch to ensure right resource is at the right location with the right tools / equipment to resolve the problem within the SLA commitment.

Failure Analysis

- Generate a post mortem report to document issue / lessons learned as appropriate
- Drive continuous improvement of process and tools

Reporting

Monthly reports

3.3.2.2 Specific Escalation Process

Aviat Network Management Center (NMC) will attempt to troubleshoot and resolve issues remotely prior to or in place of dispatching field resources to site. When an alarm is received in the Aviat Network Operations Center (NOC), the team will attempt to determine the root cause by correlating all alarms, look at weather, RSL's, Signal To Noise Ratio (SNR), etc. After troubleshooting, if the situation is determined to be an emergency and therefore onsite dispatch is required, the following process will be followed.

- NOC generates Case to track all aspects of identified issue
- NOC reviews site issues to ensure there are no pre-required approvals needed
- NOC requests dispatch and identifies all pre-requisites including required hardware if hardware failure is identified as the root cause from remote troubleshooting
- NOC confirms dispatch in process to all parties with estimated ETA
- Once Offeror's technician is onsite, SLA time is logged into case and Conference Bridge is initiated with NOC
- Issue is resolved / workaround completed and Ticket is closed by NOC
- Email notification is sent to all identified parties to alert them to closure
- Offeror's Tech takes failed unit (assuming hardware failure) and processes through the Aviat Return Merchandise Authorization (RMA) process
- Offeror's Tech also updates Spares inventory identifying hardware removed and what hardware is being processed via the RMA process.

Aviat Networks Support process – NOC & TAC

- Tier 1: NOC Personnel

NOC Engineer receives alarm notification from the monitoring tools, and opens a Support Case and, based on Customer and Product data, reviews potential impact. Looks at all aspects of the site impacted to understand potential impact from Scheduled Maintenance, Weather, and finally the equipment itself. If after

initial review of all aspects that NOC can access, NOC will initiate a field dispatch. At the same time, if not successful in identifying the specific issue impacting performance of the network, will escalate to the next tier of support within Aviat (Tier 2).

The NOC Engineer will identify the severity (Critical, Major, Minor) at the time of escalation to the Technical Assistance Center (TAC) team.

- Tier 2: TAC

If the problem is not resolved within the target resolution time – associated with each of the severity levels, then there is an automatic process by which the issue will escalate to the next level of support to pursue resolution. At this time notification also takes place to Management identifying fact that issue has gone beyond accepted timeframe for resolution.

Tier 2 generally is required when the issue is beyond simple hardware failures. Usually involves some level of configuration, hardware not operating exactly as specified, or when problem is intermittent in nature.

- Tier 3: TAC

If the problem is not resolved within the target resolution time, after Aviat Networks initiates the troubleshooting process, then Aviat Networks will escalate to management and next level of support to pursue resolution.

Tier 3 Technical Support Engineer (TSE) typically gets involved when there are complex interoperability issues identified between the microwave and other components in the network, when problem appears to be software related (i.e., a bug), or when new products or software have been introduced into the network and cause issues not previously seen before.

3.4 Detailed List of Services to be Performed

The following services shall be performed by the Offeror:

3.4.1 Maintenance and Monitoring

Comprehensive maintenance and continuous monitoring of the operational status of the ETS entire digital microwave radio system, including HAWAIIAN, Overbuild, Harbors, and additional microvae links, and their associated equipment as detailed herein:

- Through the work of trained, certified, and experienced employees who perform this task as their primary function (employee qualifications are detailed elsewhere); and
- On a 7x24 (7 day-a-week, 24 hour-per-day) basis with no additional fees or costs to the State.

Comprehensive maintenance and continuous monitoring of the operational status of the ETS digital microwave radio systems and its associated equipment include:

3.4.2 Maintenance Service

Maintenance service shall include preventative maintenance based on the specific needs of the individual equipment and on-call remedial maintenance. Maintenance service shall also include cleaning, adjustment, and replacement of worn or malfunctioning parts, to maintain the equipment at the original equipment manufacturer's specification.

Note: Any vacuuming of electronic equipment shall be done with a unit by 3M model SV-497AJM ESD Safe Field Service Vacuum or equivalent.

3.4.2.1 Original Equipment Manufacturer's Engineering Changes

During the contract period (including any extension to the contract), the original equipment manufacturers may make technical improvements to existing installed equipment and software. Such changes are usually accomplished through field engineering changes. The Offeror shall install, at no additional cost to ETS, such manufacturer-provided improvements. Such improvements will be installed during site visits that occur for the regular service intervals. Improvements shall be installed no later than 6 months after materials to make the change are made available to the Offeror by the equipment manufacturer or ETS. ETS shall be responsible for any costs to acquire materials from the manufacturer to accomplish these field engineering changes.

3.4.3 Availability

The Offeror's service personnel shall be available 24 hours a day, 7 days a week to perform all maintenance or repair services. All Offeror's employee costs for work performed after hours, on weekends or holidays, or otherwise on an overtime or emergency basis are the responsibility of the Offeror.

3.4.3.1 Disruptive Work Must Occur After Hours

Testing and repairs that are disruptive to system operations and/or are traffic affecting shall be performed by the Offeror outside of the State's normal working hours when at all possible. For the purpose of the contract, the State's normal working hours shall be defined as that period on regular State workdays from 7:00 a.m. to 5:00 p.m. Any and all test and repair activities that have the slightest potential to disrupt system operation and/or affect traffic shall be scheduled in advance with the State Radio Engineer and the ETS Assistance Center.

3.4.4 Alarm Acknowledgement

The Offeror shall acknowledge all new Service Affecting or Non-Service Affecting alarm indications or requests for service from ETS personnel, and/or the microwave system, and/or the network monitoring system, whether the alarm notification and/or service request was human initiated or made by automatic alarm notification sent by monitoring system, as soon as possible, and in no case later than thirty (30) minutes after notification. Acknowledgement of an alarm or service request can be accomplished by speaking to the ETS Assistance Center staff or by remotely or directly accessing the

monitoring system and using the information received to plan an appropriate response. Offeror shall monitor, by cell phone, the status of the microwave system by use of the Provision network monitoring system. Offeror shall provide a service center telephone number or an on-call service technician number through which a service request can be made to a qualified service technician at any time of any day.

3.4.5 Response

The Offeror shall ensure the continuous and proper operation of the Harris digital microwave radios, Fujitsu multiplexers, LightPointe FSO equipment, standby and backup components and systems for all units, and associated equipment by providing **rapid response**, as described in sections 3.4.5.1 and 3.4.5.2, to failures, alarms, and out-of-tolerance conditions as defined below.

3.4.5.1 Response to Non-Service Affecting Alarms

On-site response to all other Non-Service Affecting Alarms must occur before 3:00 PM of the next regular business day unless other arrangements are made with ETS during the initial acknowledgement of the alarm.

3.4.5.2 Response to Payload Alarms

The Offeror must respond on site to any and all Payload Affecting Alarms, whether the alarm notification and/or service request was human initiated or made by automatic electronic notification. Acknowledgement to Payload Affecting Alarms shall be as soon as possible, and unless other arrangements are made with ETS during the initial acknowledgement of the alarm, upon direction of the NOC or ETS staff, the Offeror shall respond on-site no later than:

- O'ahu – two (2) hours; and
- Islands other than O'ahu – either within eight (8) hours or if event occurs after the last available travel then two (2) hours after the neighbor-island arrival of the next available regular commercial flight from O'ahu.

3.4.5.3 Response to Non-Microwave Related Alarms

The Offeror is required to report all Non-Microwave Related Alarms to the ETS Assistance Center as soon as possible, and in no case later than 9:00 AM on the next calendar day.

3.4.5.4 Response to Service Affecting Alarms

Service Affecting Alarms affects the operation and/or reporting of any element under offerors responsibility as defined herein without affecting payload. The offeror must respond on site to any and all Service Affecting Alarms, whether the alarm notification and/or service request was human initiated or made by automatic electronic notification. Acknowledgement to Service Affecting Alarms shall be as soon as possible, and unless other arrangements are made with ETS during the initial acknowledgement of the alarm, the Offeror shall respond on-site no later than:

- All Islands – by next business day.

3.4.6 Escalation Procedure for Service Affecting Alarms

The Offeror shall follow the Aviat NOC escalation procedure, and shall implement Offeror's own automatic escalation procedure to ensure response to and resolution of problems that cause Service Affecting Alarms. The Contractor will provide ETS throughout the term of the contract with both an updated copy of this escalation procedure and a current list of escalation telephone numbers.

3.4.7 Alarm Connections

The Offeror shall not disable, disconnect, or bypass any alarm without the express written permission of the State Radio Engineer.

3.4.8 Acknowledgement and Response Requirements for Time and Material (T&M) Services.

Acknowledgement and response requirements do not apply to call outs for optional services that are rendered at the ETS's option and performed by the Offeror on a time and materials basis. However, the Offeror is expected to respond to all such requests in a rapid and professional manner.

3.4.9 Original Equipment Manufacturer (OEM)

The Offeror shall guarantee that all equipment maintenance, repairs, modifications, upgrades, and/or parts replacement are made in such a manner as to be compatible with the practices recommended by the original equipment manufacturers.

3.4.10 Repair In Place

All maintenance and repair work shall be done at the ETS's telecommunications facilities throughout the State unless otherwise authorized by ETS.

3.4.11 Maintenance & Monitoring Charges

The lump sum charge per month for comprehensive maintenance and continuous monitoring shall include all costs for labor, regular wages and benefits, overtime wages; personnel travel costs and per diem; parts, materials, consumables, Aviat NMS services, hardware and software warranties, and supplies; any additional tools, equipment, and safety gear required; costs for employee training and certification; costs for storage, transportation, shipping, and supervision; as necessary to accomplish the activities described herein.

3.5 Bi-Annual Preventive Maintenance Inspection (PMI)

Performed in March and September, all of the equipment manufacturer's preventative maintenance checks and services recommended to be done during the manufacturer's major service interval and produce a written report detailing the system status and the work performed.

3.5.1 Semi-Annual Maintenance

ETS recommends the use of PMI sheets found on pages PMI-1 through PMI-12, or PMI documents provided by the OEM.

The major service interval (the "semi-annual maintenance") shall be six (6) months. ETS notes that this interval is half the time period recommended by the original equipment manufacturer. The winning bidder shall complete the first semi-annual maintenance check and service no later than ninety (90) days after the receipt of the notice to proceed, and every six (6) months thereafter. Semi-annual maintenance shall be scheduled with ETS a minimum of ten (10) days prior to the servicing, and ETS reserves the right to observe the semi-annual maintenance.

3.5.2 Semi-annual maintenance shall include:

- All items recommended by Harris for annual maintenance of the Constellation, and IRU-600;
- All items recommended by Fujitsu for annual maintenance of the FlashWave multiplexer products;
- Provide full backups of every FlashWave on a 1 G flash (USB) drive;
- In-service testing of off-line (hot-standby) units as well as spare modules for all Constellation radios;
- In-service testing of off-line (hot-standby) units as well as spare modules. Only one-half or one-quarter of the available spares are tested during any semi-annual maintenance activity;
- In-service testing of spare modules for all Fujitsu units;
- All items recommended by LightPointe for annual maintenance of the FlightStrata FSO link equipment, including, but not limited to, cleaning of the exterior of the lens;
- All items recommended by Telecom Solutions for annual maintenance of the DCD 523 Digital Clock Distributor;
- All items recommended by Symmetricom for annual maintenance of the Symmetricom model S350 SyncServer;
- All items recommended by the original equipment manufacturer of the dehydrator for each waveguide dehydrator unit in use, including, but not limited to, replacement of filters and desiccant material; and
- Visual inspection, and, if necessary, cleaning or refurbishment of the network monitoring system computer system, the Decibel Products model DB8830 Sentry paging unit, the Ardax orderwire interface, Hewlett Packard model E6325A T1 Test Advisor test sets, DSX panels, fiber optic jumpers, and facility alarm wiring.

3.5.3 Semi-annual Maintenance of Security Cameras

Certain sites are equipped with digital security cameras. ETS shall have the right to add cameras to other sites thereby increasing the video surveillance to all ETS Radio sites during the period of this contract and any extensions without additional cost.

Semi-annual maintenance of all ETS Radio Facility security cameras shall include the following activities:

- Prior to deployment for maintenance of remote sites, the Offeror shall go to the Kalanimoku Assistance Center, or a new hub site if moved from Kalanimoku, to evaluate the systems performance. Observe each camera view for any needed corrections. Record any views in need of correction, any cameras not reporting and/or recording. The Offeror shall also ensure all DVRS are recording properly whether at the hub site or at each remote site.
- Once deployed to ETS Radio sites, the Offeror shall clean all camera housing glass by using a microfiber cloth with Windex Glass Cleaner (only) or appropriate alcohol wipes at all camera sites. Camera lens typically would not require cleaning.
- The Offeror shall possess the appropriate software in their computer laptops to access the system to monitor site video prior to leaving site.
- Ensure viewing angle is correct and if altered, is returned to original setting.
- Should any pressurized outdoor camera enclosure be opened for any reason, the Offeror shall replenish the “nitrogen gas” required to pressurize the enclosure.

3.5.4 Semi-Annual Maintenance of all Facility DC Power Systems

Semi-annual maintenance of all Facility DC Power Systems, which includes, but is not limited to:

- Re-torquing of all high-current connections and re-greasing of all battery terminals;
- Measurement and listing in both tabular and graph form of data collected per cell for each battery bank that includes for each cell the cell number, voltage, internal resistance, and inter-cell resistance to the next (numerically higher) cell. Also provide a summary detail for each bank that indicates the minimum, maximum, and average for each parameter recorded as well as the ambient temperature during the measurement;
- Documenting of the DC distribution panel layout with a drawing that indicates DC circuit breakers installed and the name of their connected load;
- Measurement and recording of the temperature of the negative terminal of each battery bank;
- Measurement and recording of the normal operating voltage, load current, and peak-to-peak AC ripple (current and voltage) as measured at the input to the DC distribution panel for each DC power system; and
- Determine and provide a written estimate of the hold time for each DC power system.

3.5.5 Semi-Annual Maintenance Report

The semi-annual maintenance activity shall not be deemed complete until the State Radio Engineer accepts the written semi-annual maintenance report. The semi-annual maintenance report will provide at least the information as provided in the "Microwave System Annual Maintenance Report (July 2013 to June 2014)" annual maintenance report in a similar format. This document is available to the successful Offeror upon request and subsequent to Notice to Proceed (NTP). Note that the forms as used in the "Microwave System Annual Maintenance Report (July 2013 to June 2014)" annual maintenance report contains more information than recommended by the original equipment manufacturer. All additional information and test and monitoring points measured and recorded in the "Microwave System Annual Maintenance Report (July 2013 to June 2014)" annual maintenance report must be provided in all semi-annual maintenance reports produced by the Offeror. The written semi-annual maintenance report shall also include:

- A Module repair List (include RMA numbers as appropriate);
- Updating of the DS1 routing map (in conjunction with ETS staff);
- Updating of Ethernet routing map (in conjunction with ETS staff);
- Listing of alarm histories for all types of alarms received during the previous six (6) months; and
- Production of a tabular listing of Harris, Aviat, Fujitsu, LightPointe, and related equipment and their status. Listing shall indicate make, model, serial number, and any State inventory decal number attached.

In addition, the written semi-annual maintenance report shall include a comprehensive inventory of all spare parts, test fixtures, and test equipment owned by ETS that is currently in the Contractor's possession. The inventory shall indicate make, model, serial number, and, if available, date of last calibration.

3.6 Weekly Alarm Report

Offeror shall produce and distribute, each week, a summary report of all system alarms, problems, incidents, repairs, cures, upgrades, and any status changes on inventory or items under repair. Reports will be sent in MS Word format by email transmission to the ETS Assistance Center staff, and the State Radio Engineer. Reports shall also be sent by facsimile to the ETS Telecommunications Services Branch or as otherwise directed by the State Radio Engineer.

3.7 Extended Factory Warranty

Procure on an annual basis and maintain for the duration of the contract the extended factory warranty repair as available from Aviat as Synergy MLA Extended Warranty for the Harris and Aviat equipment. Failure to maintain the Aviat Extended Warranty in force for the Constellation radios and CAU equipments shall result in the immediate termination of the contract.

The Offeror will pay all other repair costs, including any additional shipping charges associated with the shipping of equipment to or from the Aviat Synergy Extended Warranty depot. Unless otherwise agreed by ETS, all shipping to Aviat by the Offeror will use Federal Express "FedEx 2nd Day" or equivalent service. The Offeror shall arrange for parts and modules re-calibrated, repaired, or replaced by Aviat to be shipped directly to ETS to allow for inventory and status monitoring by the State.

Should any component, card, module, sub-assembly or any other portion of the Constellation radios and CAU equipment be found to be uneconomical to repair, the Contractor will be responsible for all costs associated with providing a replacement or new item as necessary to maintain the system's continuous and proper operation and the integrity of the spare parts and equipment inventory, provided such replacement is available from the original equipment manufacturer.

ETS understands that due to the age of the DVM6-45 equipment, extended warranty coverage may not be available. Once Extended Warranty for the DVM6-45 is no longer available from Aviat, should any component, card, module, sub-assembly or any other portion of the Harris DVM6-45 equipment be found to be uneconomical to repair, ETS will be responsible for providing a replacement or new item as necessary to maintain the system's continuous and proper operation, to the extent funds are available therefor. The Offeror is required to maintain Aviat Synergy Extended Warranty in force for the DVM6-45 equipment as long as the radios remain in the network and as long as the Extended Warranty is available during the period of the contract, including extensions.

3.8 Provision Warranty

Once the Provision network monitoring software is configured and after the original Provision warranty period ends, procure on an annual basis and maintain for the duration of the contract and any extension the basic software warranty for the Provision software and the Provision computer's operating system.

3.9 Fujitsu FlashWave Multiplexer Warranty

Procure and maintain for the duration of the contract an extended factory warranty for the Fujitsu FlashWave multiplexer equipment or otherwise be responsible for any and all repair costs associated with the Fujitsu FlashWave multiplexer equipment maintained under the contract, including extensions.

3.10 Storage for Spares

Offeror to provide a single organized, clean, dust-free, secure warehouse space, as specified herein, of no less than 240 square-feet for spare parts for the radio systems and associated equipment, restoration spares, and test equipment. In order to facilitate the storage of equipment racks, the warehouse space shall have a ceiling height of no less than nine (9) feet. The warehouse space shall meet or exceed the recommendations of the original equipment manufacturers of the radio, Fujitsu, and Intraplex equipment recommendations regarding allowable ranges of humidity and temperature for parts storage. Collocation of the storage space in any garage area

susceptible to vehicle exhaust fumes and smoke is not acceptable. ETS and its representatives shall have free and unfettered access to this storage area during normal business hours.

3.11 Annual Test Equipment Calibration

Unless noted otherwise, annually calibrate all ETS owned test equipment listed in this specification. The Offeror shall be responsible for all costs to calibrate, ship or transport, and/or insure items during transport of the ETS test equipment listed herein.

Only one of the test equipment field kits (consisting of an Agilent 53148A, HP 8481H, and HP 8483A Power Sensor) shall be sent out for calibration at any one time. At least, one complete field kit shall be kept in hand (in the State of Hawaii) and in current calibration at all times.

In order to contain costs, the IFR model 6843 shall be calibrated every other year; the Offeror shall calibrate the IFR model 6843 during odd contract years (first year, third year (second renewal), and fifth year (fourth renewal)).

3.12 Work Required at the Beginning of the Contract

The Offeror shall complete the following tasks within 3 months after receipt of the Notice to Proceed:

3.12.1 Waveguide Port Identification

The Offeror shall provide for all ETS radio sites -original Visio 2013 drawing files that indicate the layout and use of building entry ports or access ways by microwave waveguide, other radio frequency coax and cabling, and any other wiring. This is for the entry ports only and does not include power wiring conduits and/or signal conduits. The drawings prepared by the Offeror must identify every waveguide by stating its port, type, radio system, antenna end points, frequencies and polarization, regardless of ownership. The Offeror must sort out antenna connections, and may need to climb towers or structures to identify antenna end points. ETS will attempt to transmit any information held now regarding tower loading. The Offeror should not plan on ETS climbing the tower for dish/polarity identification. The Offeror shall label all microwave waveguides on the inside of the equipment shelter such that a clearly visible label is installed within three feet of the entry port. The Offeror shall make best efforts to identify non-waveguide cabling, and, if possible, to label the same.

3.12.2 Tower Drawings

The Offeror shall utilize manufacturer drawings and any existing drawings from ETS to create original Visio 2013, or newer, drawings of each tower with antennas. Any antenna information provided is to be verified by the successful Offeror. On the document, the antennas are to be uniquely identified. A legend will correspond to the unique identifier which will list the antenna type, size, tower height, its mounting leg or face, height, far end point site name, azimuth, all frequencies and the respective polarity for each frequency along with the respective agency or customer traffic for each

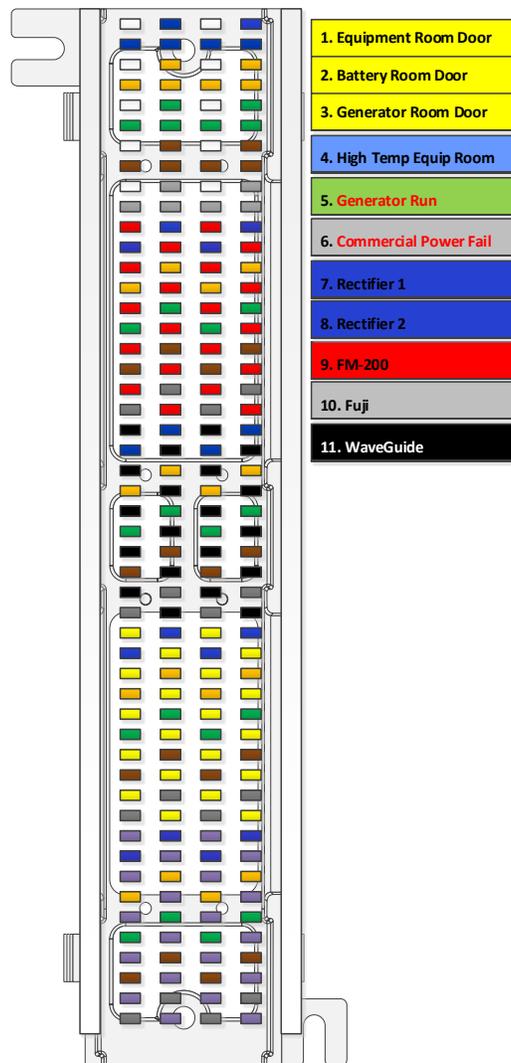
frequency, for each directional point to point (PtP) antenna. Omni or panel antennas shall have their model number, type, frequency, and height identified.

3.12.3 Wiring of DSX-1 DC Power and Ground Connections

The Offeror shall connect the DC power and ground (signal and safety) connections of any DSX panels not already connected that are added to, or already in the microwave system during the time frame of this contract and any extensions.

3.12.4 Wiring of Standard Site Alarms

Where not yet completed, the Offeror is to connect site alarms to SiteBoss. Example is shown in the following diagram. Offeror to program SiteBoss accordingly so correct alarms report on Provision in the Assistance Center. Offeror to verify that each alarm point is seen by the Assistance Center with the correct name. Alarms will vary by site.



3.13 Time and Material Basis Emergency Callout

At the option of ETS, the Offeror shall be required on a time and material basis to troubleshoot and repair ETS owned or managed communications transport systems that may, or may not, be covered by the contract. Such work shall only be initiated after the receipt of a written Purchase Order. Invoices for such work shall include only the following line items:

3.13.1 Emergency Callout Fee / Per day Mobilization Fee

Emergency callout scenarios for items covered by the contract will also cover the first two hours of the callout event. Entered amount shall include all costs for labor (up to two hours), regular wages and benefits, overtime wages; personnel travel costs and per diem; and costs for supervision to deploy to and return from the equipment location. Emergency callout scenarios for items outside the purview of the contract are a mobilization fee and do not cover any of the hours spent resolving the issue. Entered amount shall include all costs for personnel travel costs, per diem; and costs for supervision to deploy to and return from the equipment location. Offeror is to enter their quote for both amounts on the Bid Sheet.

3.13.2 Emergency Callout Per Hour Labor Cost

Emergency Callout hourly cost for hours spent beyond the first two hours shall be entered on the Bid Sheet. The per hour labor cost for at site work per employee shall include all costs for labor, regular wages and benefits, overtime wages, and supervision. Overtime hours shall be billed at no more than one-and-one-half times the quoted per hour labor cost as entered on the Bid Sheet. Hourly cost for hours spent during an Emergency callout for items not covered by the contract shall be billed per hour with no initial two hour window covered under the terms of the contract. The rate will be the same hourly rate entered for the Emergency Callout after two hours. Bidder shall enter one price for this hourly cost on the Bid Sheet.

3.13.3 Materials

Material costs billed shall be strictly limited to the cost of replacement parts ordered from the original equipment manufacturer or as otherwise approved in advance in writing by the State Radio Engineer. Material costs, such as consumables, supplies, tools, equipment, or safety gear, shall not be billed.

4 OFFEROR QUALIFICATION

4.1 Corporate Licensure Qualifications

Offeror must possess a valid State of Hawaii specialty Contractor license for the classification C-15b, Telecommunications Contractor's License. A copy of the license must accompany the bid. Offeror must maintain this specialty Contractor's license for the duration of the contract.

4.2 Personnel Qualifications

4.2.1 Staff Count

The Offeror agrees to commit and provide at all times a minimum of two (2) full-time qualified staff members whose primary assignment will be the comprehensive maintenance and continuous monitoring of the operational status of the ETS digital microwave radio system and its associated equipment.

4.2.2 Full Time Employees Required

All work done directly on the system shall be performed by qualified and experienced personnel that are regular full-time employees of the Contractor. Use of part time or temporary employees, summer hires, helpers, trainees, or apprentices to perform services under the contract is prohibited. Subcontracting shall be permitted ONLY when providing NOC services, or riggers for repointing antennas to resolve traffic/link affecting issues.

4.2.3 Maintenance Personnel Qualifications

Personnel assigned to the comprehensive maintenance and continuous monitoring of the operational status of the ETS digital microwave radio system and its associated equipment shall have the following qualifications:

Offeror shall host and purchase training by original equipment manufacturer to maintain, repair, and commission links by the original equipment manufacturer on the Harris/Aviat Constellation and IRU-600 radio systems and Aviat ProVision software. Training will include seats for 2 ETS staff at no extra cost to the state. Personnel assigned to the comprehensive maintenance and continuous monitoring of the operational status of the ETS digital microwave radio system and its associated equipment shall attend the training described above within 90 days after having the digital microwave maintenance assigned to them as their primary task.

Personnel must have a minimum of two years experience with licensed digital microwave systems that includes experience with at least three of the following five aspects of licensed (or NTIA coordinated) digital microwave radio systems operating in the lower 6 GHz, upper 6 GHz, 7GHz/8GHz, or 11 GHz bands:

- monitored hot standby configured radios;
- multiple hop radio systems;
- multiplexed high-capacity (DS3 or better) digital payloads;
- space diversity receiving systems; and
- high capacity over-water operation.

Personnel must have experience with computer based remote control and monitoring systems used in the telecommunications industry. Experience with license-free radio systems or non-multiplexed radio systems will not meet any aspect of this requirement.

Personnel must also possess either a valid commercial General Radiotelephone license from the Federal Communications Commission or an equivalent industry certification (such as a NARTE Master Technician, Junior Engineer, Senior Engineer, or Master Engineer Certification).

Personnel must also possess Certified Electronics Technician (CET) certification.

A statement of type and duration of experience of each of the service personnel must be submitted with the bid. Copies of personnel licenses or certifications must also be submitted with the bid. Copies of factory training certificates received by service personnel must be provided to ETS within 90 days after receipt of the Notice to Proceed.

5 EQUIPMENT DESCRIPTION

5.1 Payload Bearing Equipment

The payload carrying portion of the digital microwave system is comprised of Harris (now known as Aviat) digital microwave radios and multiplexers as well as equipment made by Fujitsu and LightPointe. The Offeror shall be responsible for all of the equipment, all connections (including radio frequency, signal, telemetry, and power), waveguide branching and interconnections, and hardware located between the first connector on the inside of the building on the exterior run of elliptical waveguide to the antenna system and the front cross connect wiring on the Digital Signal Cross-connect (DSX) panels for the ETS digital microwave radio system and its associated equipment. The Offeror shall be responsible for all of the equipment, connections (fiber optic, signal, telemetry, and power) and hardware including the front cross connect wiring on the Digital Signal Cross-connect (DSX) panels for all SONET, multiplexer, and free space optical systems and hardware described herein as associated with the ETS digital microwave radio system. If inter-floor or inter-facility trunk fiber is used the Offeror shall be responsible for the connections to local fiber termination panel for those trunk fibers but shall not be responsible for the trunk fiber or its termination panels.

5.1.1 Larus Fiber Optic Transport System

The Larus fiber optic transport system is used to transport T1 circuits between the Kalanimoku SOB basement and the Honolulu Municipal Building (HMB) radio room. The Larus equipment consists of Larus model 1187 mounting shelves and FT2ER 4-T1 fiber transport units.

5.1.2 LightPointe and Fujitsu OC-12 Loop System in Honolulu

The Honolulu OC-12 loop interconnects the LAK SOB, HMB basement, HMB radio room, Honolulu Police Dispatch radio room, and the USCG facility in the PJKK Federal Office Building on O'ahu. The Honolulu OC-12 equipment consists of four (4) LightPointe FlightStrata 622 OC-12 free space optics links (or eight (8) units total) and five (5) Fujitsu FlashWave 4100 multiplexers. Note that the Honolulu OC-12 loop system does not include the LightPointe free space optics link connecting LAK SOB and the Kalanimoku SOB.

Equipment used on the last link segments into downtown Honolulu include a LightPointe FlightStrata Free Space Optical (FSO) duplex laser link operating at OC-12 capacity

Fujitsu FlashWave 4100ES multiplexers, and a FlashWave Small Shelf. The Fujitsu multiplexers support an OC-12 loop between the LAK SOB roof radio room and the Kalanimoku SOB Basement that transits both the LightPointe FSO link and the ETS LuxN fiber optic systems that interconnect those buildings. The Offeror is only responsible for the FSO portion of the loop and the optical jumper connections to the nearest ETS LuxN equipment that supports the other half of the OC-12 loop. The LightPointe FSO OC-12 link includes two (2 each) LFSA-0622-1KS-S3S FlightStrata-622 single mode interface head units and two (2 each) LPC-D12 DC power supplies with -48 VDC power input.

5.1.3 Microwave Links

LINK	RADIO SITE 1	SITE 2	BW	NETWORK	
1	Constellation	Lihue SOB	Kilohana	OC3	HWN
2	Constellation	Lihue SOB	Kilohana	OC3	OB
3	IRU	Lihue SOB	Kilohana	OC3	Harbor
4	Constellation	Kilohana	Kaala	DS3	HWN
5	Constn	Kilohana	Kaala	OC3	OB
6	IRU	Kilohana	Nawiliwili	DS3	Harbor
7	IRU	Kaala	RT	OC3 MHSB	HWN
8	Constellation	Kaala	RT	OC3	OB
9	Constellation	RT	LAK	OC3	OB
10	Constellation	RT	LAK	OC3	OB
11	Constellation	RT	LAK	OC3	OB
12	IRU	LAK	Pier 2	OC3	Harbor
13	IRU	RT	Puu Kilea	OC3	??
14	IRU	RT	Puu Kilea	DS3	HWN
15	Constellation	RT	DHRim	OC3	OB
16	Constellation	RT	HNL	OC3 ??	OB
17	IRU	Puu Kilea	Haleakala ETS	DS3 2+0	HWN ??
18	IRU	Puu Kilea	Haleakala ETS	DS3	HWN ??
19	Constellation	Puu Kilea	Puu Nana	OC3	OB
20	IRU	Puu Kilea	Puu Nana	OC3	Harbor
21	Constellation	DHRim	Koko Head	OC3	OB
22	IRU	Koko Head	Waimanalo Ridge	OC3	OB
23	IRU	Koko Head	Puu Nana	OC3	OB
24	Constellation	Koko Head	Puu Nana	OC3	OB
25	IRU	Puu Nana	Kaunakakai Pier	OC3	Harbor
26	IRU	Puu Nana	Haleakala USCG	OC3	OB
27	Constellation	Puu Nana	Haleakala USCG	OC3	OB
28	IRU	Puu Nana	Haleakala USCG	OC3 ??	MHSB ?? OB
29	IRU	Haleakala	ETSKaupulehu	OC3 Eth	Harbor
30	IRU	Haleakala	ETSKaupulehu	DS3 ??	HWN ??
31	IRU	Haleakala	ETSHaleakala USCG	OC3	Harbor ??
32	IRU	Haleakala	ETSHaleakala USCG	OC3	Harbor ??
33	Constellation	Haleakala	ETSWailuku SOB	OC3	OB
34	Constellation	Haleakala	ETSWailuku SOB	DS3	HWN
35	Constellation	Haleakala	ETSKahua Ranch	OC3	OB
36	Constellation	Kahua Ranch	Kaupulehu	OC3	OB
37	IRU	Wailuku SOB	Kahulului Harbor	OC3 ?? Eth	Harbor
38	IRU	Wailuku SOB	Puu Mahoe	OC3	OB ??
39	Constellation	Wailuku SOB	Puu Nia Niau	DS3	HWN

40	IRU	Kaupulehu	Puu Mahoe	OC3	OB ??
41	IRU	Kaupulehu	Kawaihae	OC3	Harbor
42	Constellation	Kaupulehu	Humuula	OC3	OB
43	IRU	Humuula	Waiakea	OC3	OB ??
44	IRU	Humuula	Waiakea	OC3	7G ??
45	Constellation	Humuula	Waiakea	OC3	moved from UH Hilo
46	IRU	Humuula	Waiakea	DS3	HWN
47	Constellation	Waiakea	Hilo SOB	OC3	HWN
48	IRU	Kapolei SOB	Kalaeloa	OC3 ?? Eth	Harbor
49	IRU	Mauna Kapu	Kapolei SOB	OC3	Harbor
50	Constellation	Mauna Kapu	LCC	OC3	OB Not Yet Installed

5.1.4 Replacement and Additions During the Contract Period

During the contract period (including any extension to the contract) ETS shall have the right, without incurring additional charges under the contract, to replace the following radio links and equipment (through other procurement):

- Mt. Kaala – ETS Round Top, O’ahu
Replace DVM6-45 MHSB radios with Constellation 6 GHz DS3, MHSB radios;
- ETS Round Top – O’ahu-Puu Kilea, Lanai
Replace DVM6-45 MHSB radios with Constellation 6 GHz DS3, MHSB radios;
- Puu Kilea, Lanai – Haleakala ETS, Maui
Replace DVM6-45 MHSB radios with Constellation 6 GHz DS3, MHSB radios;
- Haleakala ETS, Maui – Kaupulehu, Hawaii
Replace DVM6-45 MHSB radios with Constellation 6 GHz DS3, MHSB radios;
- Kaupulehu, Hawaii – Humuula, Hawaii
Replace DVM6-45 MHSB radios with Constellation 6 GHz DS3, MHSB radios;
- Humuula, Hawaii – UH Hilo (moving to Waiakea)
Replace DVM6-45 MHSB radios with Constellation 6 GHz DS3, MHSB radios;
- Constellation Radio Links may be changed out to IRU radios. Offeror shall maintain the IRU-600 radios installed to replace the Constellations – and the Offeror shall maintain these replacement radios without additional compensation.
- Farscan hardware and software. With the replacement of the DVM6 radios statewide, replace the existing Farscan network monitoring system at Kalanimoku SOB Basement with Aviat Provision Network Element

Manager and Provision Windows server. The Provision network monitoring system shall include and make use of facilities to monitor the status and alarm conditions of microwave equipment, associated equipment, site alarms, and alarms from equipment that is not part of the ETS digital microwave radio system and its associated equipment as covered in this solicitation, for example the ATS and generator.

- GPS-based Synchronization Equipment
Add Larus StarClock model TeimPo 6400 Synchronization Timing Systems with redundant GPS receivers and holdover options at Lihue SOB Roof, ETS Round Top, Haleakala ETS.

ETS anticipates the radio links and hardware replacement listed above should be completed within the first year or the first extension of the contract. Once the radio link and hardware replacement listed above occurs, the Offeror shall at the end of the new equipment warranty period, assume responsibility under the contract without additional compensation for these replacement radio links and all associated hardware, including, but not limited to waveguide branching systems, DC-DC converters, and DSX panels.

The Offeror understands and agrees that once the Provision network monitoring system notification methodology is installed, the Offeror shall have additional responsibilities regarding the acknowledgement and reporting of status and alarm conditions of equipment as described in the section regarding alarm response.

5.1.4.1 Link Replacements

During the contract period (including any extensions to the contract) the State shall have the right, without incurring additional charges under the contract, to replace Radios as upgrades.

5.1.4.2 Replacement Link Maintenance

For any Microwave Radio System replacements the Offeror, at the end of the new equipment warranty period, shall assume responsibility for the maintenance of the new hardware and systems under the contract without additional compensation.

5.1.4.3 Replacement Link Monitoring

Once the link is installed and commissioned to carry traffic, the Offeror shall add the new equipment/systems to the monitoring software and begin continuous monitoring of the newly installed equipment/systems.

5.1.4.4 New Radio Links

During the contract period (including any extensions to the contract) ETS shall have the right to add up to 5 OC3 links statewide without additional charges under the contract.

Once installed and commissioned to carry traffic, each link is typically covered by a one (1) year manufacturer's warranty. For each Microwave Radio System link addition the

Offeror, at the end of the new equipment warranty period, shall assume responsibility for the maintenance of the new hardware and systems.

Offeror shall submit with their bid, a quote for each additional link beyond the five mentioned above, in the section on the Bid Sheet entitled, "Additional Link Maintenance".

5.1.4.5 New Link Monitoring

Once the link is installed and commissioned to carry traffic, the Offeror shall add the new equipment/systems to the monitoring software and begin continuous monitoring of the newly installed equipment/systems.

5.1.5 Fujitsu Multiplexers

While the Aviat IRU-600 radios can drop out Ethernet payload, the Constellation radios are only capable of handing off T1 traffic so ETS has employed Fujitsu 4100ES (Extended Shelf) Optical Multiplexers at most sites. The 4100ES allows ETS to distribute the link payload and also facilitates software cross connects of OC-12 fiber payload, OC-3 links, and DS3 links between radios at the site whether they are reconfigured or pass-through.

5.1.5.1 Locations with Fujitsu Multiplexers

Note that some locations are identified due to upcoming purchases as not yet installed. If the site does not currently contain a 4100ES, ETS reserves the right to install one there during the contract period. In section 5.1.5.2, the Contractor is instructed to maintain them as part of the contract. Until notified otherwise, Offeror shall consider all locations identified in Section 5.1.3 to be locations for existing and possible future, 4100ES Multiplexers to be maintained.

5.1.5.2 Reconfiguration of Multiplexers and Radio Payload

During the contract period (including any extensions to the contract), ETS shall have the right to redeploy, decrease, and/or increase the number of cards installed in the radios, and/or Fujitsu multiplexers at any time without additional charges under the contract. During the contract period (including any extension to the contract) the State shall have the right to reconfigure the system payload connections without additional charges under the contract.

5.1.6 Replacement and Additions Planned During the Contract Period

Although there are many new links planned, most new 4100ES shelves are slated to be installed only at the new sites such as Harbors, Pahole, Kamehame, and Waiakea. No new 4100ES shelves are planned for existing sites with new links.

5.2 Associated Equipment

The Offeror shall also be responsible for the following equipment associated with the ETS digital microwave radio system:

5.2.1 Provision Network / Legacy FarScan Monitoring Systems

The FarScan computer system which consists of a Compac DeskPro EP computer system with a Windows NT version 4.0 operating system and FarScan for Windows version 3.3 software, monitor, and a printer. The Provision Computer system which consists of a server, operating system, Provision software, Compac DeskPro EP computer system, Provision client software, operating system, and monitor.

5.2.2 Control/Alarm Units (CAU) Alarm Reporting Systems

Until decommissioned and replaced by the Assentria SiteBoss, Offeror shall also maintain the Control/Alarm Units (CAU) located at Kalanimoku SOB Basement, Kalanimoku SOB Roof, and LAK SOB Roof.

5.2.3 Assentria SiteBoss Alarm Reporting Systems

All SiteBoss 550 units installed, including any yet to be installed, up to one (1) per site.

5.2.4 Order Wire / Site Phones

An Ardax orderwire interface, with DTMF FXO, DSSS, and power supply modules, that is connected to the Harris radio system orderwire to provide an interface between the orderwire and the public telephone system so that telephone calls can be made to and from the orderwire.

5.2.5 Dehydrators

All waveguide dehydrators connected to the Microwave system, and UH systems at all sites listed; including non-HAWAIIAN sites: Koko Head, Puu Nana, and Kahua Ranch. Most of the waveguide dehydrators (air dryers) in use are Puregas model P-550-3 units capable of supplying 0.3 SCFM with factory installed alarm options P-PEC3287 (low pressure), P-05444 (compressor run time), and P-PEC4382 (humidity). Other models and brands of dehydrators, such as those made by Andrew, are also used. The Offeror is also responsible for all of the components of the dehydrator systems, such as air manifolds (with valves and indicating gauges), hoses and fittings, and external in-line low pressure alarm sensors and switches.

5.2.6 Waveguide

Offeror Responsibility

Unless stated otherwise, the Offeror is responsible for all interior waveguide components at all radio sites, including but not limited to: rigid waveguide, waveguide bends, flexible waveguide sections, waveguide hangars, circulators, isolators, attenuators, loads, and other components that make up the waveguide combining systems.

Waveguide systems in the radio shelter also include all rigid and flex waveguide segments connecting to the University of Hawaii (UH) radio assemblies; the UH is responsible for its radios beginning at the waveguide flange or coaxial connector on the rear of the UH radio equipment. The Offeror is responsible for the waveguide pressure windows used in ETS and UH systems.

Not Offeror’s Responsibility

The Offeror is not responsible for any of the waveguide systems at Puu Kilea and Haleakala that are the property of the Maui Electric Company (MECO). The Offeror is not responsible for any of the waveguide systems at Kaupulehu that are the property of HELCO. The Offeror is not responsible for the inside portion or the connector of the elliptical waveguide that exits the building and connects to the antenna.

5.2.7 Site DC Power Systems

The Offeror is responsible for site DC power systems and components such as chargers and station battery systems, including, but not limited to, all conduit and wiring from the electrical power main source (AC breaker panel) to the charger (or rectifier) systems or modules, the DC distribution breaker (or fuse) panels, battery disconnect breakers (or fuses), DC low-voltage load disconnect panels, DC fuse and breaker panels in the racks that support the microwave equipment, DC battery systems (including battery cells, battery racks, battery supports, spill containment systems, and eye wash stations) and all DC-to-DC converters and their interconnecting wiring. The following list of DC systems may have changed since the inception of this document and is meant to provide the Offeror an approximate picture of the systems to be maintained:

- Kukui Will be -48 VDC
- Kukuiolono Will be -48 VDC
- Nawiliwili Harbor -48 VDC
- Port Allen Harbor -48 VDC
- Lihue SOB roof -48 VDC and the DC-DC converter system
- Lihue SOB basement -48 VDC
- Mt. Kilohana -48 VDC
- Kaena Point Will be -48VDC
- Pahole Will be -48 VDC
- Kalaelo Harbor -48 VDC
- Kapolei SOB -48 VDC
- Mauna Kapu upper Will be -48 VDC
- Mt. Kaala -24 VDC, -48 VDC, and +12 VDC
- Round Top -48 VDC, and the DC-DC converter system
- LAK SOB -48 VDC and +12 VDC
- Kalanimoku roof -48 VDC, and the DC-DC converter system
- Kalanimoku basement -48 VDC
- Diamond Head Rim -48 VDC
- Koko Head -48 VDC
- Waimanalo Ridge -48 VDC
- Puu Papaa -48 VDC

- Kawela -48 VDC
- Puu Nana -48 VDC
- Kaunakakai Harbor -48 VDC
- Puu Kilea -48 VDC
- Kaunalapau Harbor, -48 VDC
- Haleakala -24 VDC and -48 VDC
- Wailuku SOB -48 VDC
- Kahului Harbor -48 VDC
- Puu Nia Niau -48 VDC
- Kahua Ranch -48 VDC
- Kawaehai Harbor -48 VDC
- Kaupulehu -48 VDC
- Humuula -24 VDC and -48 VDC
- Mauna Loa -48 VDC
- Waiakea Will be -48 VDC
- Alala Cone Will be -48 VDC
- Moinuiahea Will be -48VDC
- Kulani Cone -48 VDC
- UH Hilo -48 VDC Moving to Waiakea
- Hilo SOB -48 VDC

5.2.8 Replacement and Additions During the Contract Period

During the contract period (including any extension to the contract), the State shall have the right, without incurring additional charges, to replace rectifiers/batteries, or add rectifiers/batteries to establish redundancy.

For any DC Power System additions the Offeror shall, at the end of the new equipment warranty period, assume responsibility for the maintenance and continuous monitoring of the new hardware and battery systems under the contract without additional compensation.

5.2.9 Larus Fiber Optic Transport System Locations

- Kalanimoku SOB (Basement).
- Honolulu Municipal Building (Roof), O’ahu located at 650 South King Street.

5.2.10 LightPointe OC-12 Loop Equipment and Systems

Work on the LightPointe OC-12 Loop Equipment and systems shall be performed at the following locations:

- Kalanimoku SOB (Roof).
- Honolulu Municipal Building (Roof).
- Honolulu Police Dispatch, O’ahu, located at 801 South Beretania Street.
- Prince Jonah Kuhio Kalaniana’ole (PJKK) Federal Office Building (FOB), O’ahu, located at 300 Ala Moana Blvd., Honolulu.

ETS reserves the right to relocate LightPointe optical links as needed. Offeror shall continue to maintain the optical links in their new location(s).

5.2.11 Inverter Systems

Work on the Inverter Systems at SOB locations that are used to convert -48 VDC to 120 VAC shall be performed at the following locations:

- Lihue UNIPOW ER IX5U-2-TS50S-D2N-120 Shelf
1500W Modules: SABRE LITE Series INV1548 DC-to-AC inverter
Unit not yet installed
- Kalanimoku Unit not yet defined.
- Wailuku UNIPOW ER IX5U-2-TS50S-D2N-120 Shelf
1500W Modules: SABRE LITE Series INV1548 DC-to-AC inverter
- Hilo UNIPOW ER IX5U-2-TS50S-D2N-120 Shelf
1500W Modules: SABRE LITE Series INV1548 DC-to-AC inverter

5.2.12 DSX Panels

DSX patch panels including all line side and drop side DSX panels connected to the HAWAIIAN radio equipment and multiplexers, all DSX panels at non-SOB locations (except for those owned by MECO, HELCO, UH or State Civil Defense), and, at the Kalanimoku SOB, all DSX panels installed on the Fujitsu 4100 multiplexer and Telecom Solutions clock source racks. Responsibilities for DSX panels includes DC power connections, ground connections, plug-in jacks, patch cords, and wired cross connects.

5.2.13 Patch Cords

During the term of the contract, including extensions, the Offeror shall maintain at each HAWAIIAN radio facility with State owned DSX panels, a minimum set of DSX patch cords including at least two (2 each) dual circuit jumpers and two (2 each) single circuit jumpers. Patch cords provided shall be at least five (5) feet in length. At contract end all patch cords provided shall become the property of ETS. Keep coiled neatly in a zipper sealed cloth tool bag no smaller than 8" X 8".

5.2.14 Fiber Jumpers

Fiber optic jumpers from the HAWAIIAN equipment interface connector to the served equipment and/or the in-room fiber optic termination panel are considered part of "Associated Equipment". Offeror is responsible for maintaining these jumpers.

5.2.15 Clock Timing System at Kalanimoku

The Telecom Solutions equipment at the Kalanimoku SOB basement that provides the Building Integrated Timing Source (BITS) for the HAWAIIAN microwave and other ETS systems. The BITS equipment includes the Telecom Solutions model DCD 523 Digital Clock Distributor with the modules including two (2 each) 40010-01 clock interfaces, two (2 each) 40019-03 ST3E clock modules, three (3 each) 40012-02 T1 output modules, and one (1 each) 45014-02SAI module.

5.2.16 Symmetricom GPS Network Time Servers

Symmetricom model S350 SyncServer GPS Network Time Servers with the following factory-installed options: -48 VDC powered with primary and secondary -48 VDC inputs; Rubidium Atomic Clock Oscillator; and T1 output with ESF framing and B8ZS line coding. The S350 SyncServer units are installed at Kalanimoku SOB 5th floor and LAK SOB. As the need is identified, ETS may deploy redundant timing sources throughout the network. Offeror is required to maintain any GPS network timing units at sites listed herein, whether existing or newly deployed by ETS during the term of the contract including extensions.

5.2.17 Alarm Sensors & Wiring

Facility alarm wiring connected between the Harris radio alarm and the control point demarcation points of door entry alarm switches, over-temperature sensors, independent power fail relays, emergency power generators, automatic generator control equipment, power transfer switches, air conditioning control and alarm systems, fire protection systems, DC power (charger) system status contacts (including but not limited to commercial power input failure, charger fail, distribution fuse alarm, over-voltage, and under-voltage alarms). The Offeror is responsible for the maintenance and replacement, if necessary, of door entry alarm switches. The Offeror is also responsible for stand-alone over-temperature sensors, i.e., those room temperature sensors that are not an integral part of the air conditioning systems.

5.2.18 T1 Test Sets

Three (3 each) Hewlett Packard model E6325A T1 Test Advisor test sets installed at the Kalanimoku SOB basement.

5.2.19 Intraplex

The HAWAIIAN telemetry and alarm network equipment that consists of Intraplex TDM-165 and Intraplex TDM-163 channel banks. Once the Equipment Replacement and Additions Planned During the Contract Period in Section 5.1.6 are completed, the HAWAIIAN telemetry and alarm network equipment will consist of five (5 each) Intraplex DCS-9560 Cross Connect Servers, seven (7 each) TDM-165 and/or ACS-165 channel banks, and eight (8 each) TDM-163 and/or ACS-163 channel banks. For the purposes of this specification, the two (2 each) Intraplex DCS-9560 Cross Connect Servers that are part of the State Law Enforcement Coalition radio system located at LAK SOB shall be considered as systems and equipment associated with the HAWAIIAN.

5.2.20 Restoration Spares In Current Inventory

A copy of the current list of restoration spares in the current inventory that are held by the maintenance vendor will be provided on request.

5.2.21 Restoration Spares Received During the Contract Period

The Offeror shall be responsible for testing and adding to the inventory spares received by ETS as part of the "Equipment Replacement and Additions Planned during the Contract Period." A list of restoration spares to be tested and added to the inventory at the beginning of the contract by this process will be provided on request.

5.3 Test Equipment and Special Tools

The Offeror shall be responsible for the following test equipment associated with the ETS HAWAIIAN digital microwave radio system:

5.3.1 Field Kits

Two test equipment field kits (one kept by ETS, one used by Offeror), each consisting of:

- Agilent model 53148A microwave frequency counter (measures frequencies up to 26.5 GHz), power meter, and digital volt meter with sensor-to-meter cable;
- HP model 8481H Power Sensor, 50-ohm, 10 MHz to 18 GHz, 100 uW to 3 W;
- HP model 8483A Power Sensor, 75-ohm, 100 kHz to 2 GHz, 1 uW to 100 mW;
- 50-ohm N Male to 75-ohm Female N adapter;
- 75-ohm BNC Male to 75-ohm Female N adapter.

5.3.2 Loose Field Test Equipment Consisting of:

- HP 8485A Power Sensor, 50-ohm, 50 MHz to 26.5 GHz, 1 uW to 100 mW;
- HP 1250-1744 metrology grade N Male to SMA Female adapter;
- HP 8493C 10 dB SMA attenuator; and
- Pasternak PE7005-20 20 dB SMA attenuator.

5.3.3 Special Tools:

- Utica HJ5322 9-inch-ounce Torque Wrench with 5/16" wrench for SMA;

5.3.4 Microwave System Analyzer

An IFR model 6843 Microwave System Analyzer, 20 GHz capable, with High Power option.

5.4 Alarm Types

Alarms are classified as Service Affecting, Non-Service Affecting, and Payload alarms.

5.4.1 Service Affecting Alarms

A "Service Affecting Alarm" is defined as any of the following, occurring either singly or in combination:

- any equipment alarm or condition that causes a new "System Major" alarm to occur on the Harris equipment or a new "Critical" or "Major" alarm to occur on the Fujitsu equipment or a new "Sync loss" alarm to occur on the LightPointe equipment;
- any equipment failure or condition that causes the FarScan software to indicate a "Major Alarm";
- any **partial** or total failure of any DC power systems unless caused by an AC source failure associated with the loss of commercial power and/or failure of the automatic transfer switch and/or generator to provide power. The Offeror shall understand and agree that partial failures and/or minor alarms associated with DC power systems, if left unattended, can cause a DC power failure that will cause a total failure of a radio site. The Offeror shall provide a response to such partial failure or minor DC power alarms as if they are a Service Affecting Alarm until it can be proven beyond a doubt that such alarms will not cause a site DC power failure or the loss of traffic;
- when any radio or FSO link is off the air;
- when the Telecom Solutions DCD 523 BITS or any Symmetricom model S350 SyncServer indicates a major alarm;
- when any payload circuit is inoperable (as tested from radio digital signal cross connect (DSX) to far end radio link DSX), or determined at any Ethernet port;
- when any T1 span (as tested from radio DSX to far end radio link DSX) is performing with a bit error rate (BER) of worse than $10e-3$ for more than a total of ten (10) seconds in any one day;
- when the service quality on any T1 span (as tested from radio DSX to far end radio link DSX) is worse than $10e-6$ BER for more than a total of sixty (60) seconds in any one day;
- when any RSL drops 15dB below value established at commissioning or recorded during previous PMI.

5.4.2 Non-Service Affecting Alarms

A "Non-Service Affecting Alarm" is defined as any of the following, occurring either singly or in combination:

- any equipment alarm or condition that causes the "System Minor" alarm to occur on the Harris equipment or the "Minor" alarm to occur on the Fujitsu equipment;
- any equipment or condition that causes the FarScan/Provision software to indicate a "Minor Alarm;"

- any alarm or failure that is not a Service Affecting Alarm that is associated with the LightPointe equipment, the FarScan computer system, the Decibel Products model DB8830 Sentry paging unit, the Ardax orderwire interface, any waveguide dehydrator, interior waveguide components, any DSX panel, any fiber optic jumper, the Telecom Solutions model DCD 523 BITS, Symmetricom model S350 SyncServer, facility alarm wiring, any Hewlett Packard model E6325A T1 Test Advisor test sets, and any component of the telemetry and alarm network equipment such as Intraplex cross connect servers and channel banks.

5.4.3 Payload (Input) Alarms

A "Payload Alarm" is defined as that alarm which occurs on the Harris or Fujitsu equipment because of an external change made to the payload input of the system equipment.

5.5 Equipment Not Included

The Offeror is not responsible under this solicitation for the comprehensive maintenance and continuous monitoring of:

- emergency power generators,
- automatic generator control equipment,
- power transfer switches,
- air conditioning control systems,
- fire protection systems,
- the State/U.S. Coast Guard (USCG) Rainbow system alternate route multiplexer equipment,
- the State/USCG Anuenue digital microwave radio system radio or multiplexer systems and equipment other than those components described herein as the responsibility of the Offeror
- the UH microwave radio or multiplexer systems and equipment, or
- the MECO microwave radio or multiplexer systems and equipment.

The Offeror is also not responsible under this specification for the maintenance of microwave tower structures, exterior grounding systems and connections, radio site real estate, buildings, or other structures.

6 GENERAL REQUIREMENTS

6.1 Site Access and Security

The Offeror shall follow ETS's site security and access procedures as they now exist or may be amended from time to time. The Offeror shall provide personal background information for its employees and a unique employee identifying number such as last four digits of employee Social Security number or similar unique number.

The Offeror shall not show, give tours, or invite third parties to view or visit any of the ETS radio facilities or inspect ETS equipment or spares without the express written permission of the State Radio Engineer.

Access to Mt. Kaala requires the approval of the Air National Guard and, as such, is beyond the control of ETS. The Offeror accepts all risks and responsibilities associated with providing personnel to work on Mt. Kaala and in ensuring their ability to receive clearance from the Air National Guard. Access to Mt. Kaala is by four-wheel drive vehicle ONLY. The narrow one-lane road to the site at the Mt. Kaala summit has a steep grade and many blind curves.

ETS has recently made available the possibility of retrieving keys from the SOB in each respective county, pending availability of DAGS neighbor island staff. Please call ahead to verify access to staff and keys. The original location for access verification and key retrieval, the Assistance Center, is still available should neighbor island staff not be present or if the keys are checked out. The Assistance Center is located in the basement of the Kalanimoku Building at 1151 Punchbowl Street, Honolulu, HI 96813.

6.2 Safety

The Offeror and its employees shall comply with all applicable health and safety regulations including, but not limited to, rules and regulations of the federal Occupational Safety and Health Administration (OSHA) and the State of Hawai'i Department of Labor and Industrial Relations (DLIR).

The Offeror and its employees shall comply at all times with standards regarding work activities in and around radio transmission facilities including, but not limited to, OSHA General Industry Standard 29 CFR 1910.268 sub-section p. Offeror must ensure that all employees are familiar with the hazards associated with exposure to radio-frequency (RF) radiation and the precautions that must be taken when working in a "controlled" RF environment as described in FCC Rules, Part 1, section 1.310, as the same exists or may be amended from time to time.

Alcoholic beverages, illegal drugs, fireworks, and firearms are prohibited at all facilities. Hunting is prohibited on or near ETS facilities or while commuting to or from working at an ETS facility.

All ETS radio facilities are smoke free; smoking and e-cigarettes are prohibited at all times inside any of the ETS facilities. The Offeror must obey signs and posted notices.

6.3 Parts

Maintenance parts replaced or supplied by the Offeror shall be only original equipment manufacturer's parts, either new or as equivalent to new as certified and approved by the original equipment manufacturer.

At Notice to Proceed (NTP), ETS will provide to the Offeror an existing inventory of State-owned spare parts, spare modules, material, and test equipment. ETS will hold in a separate inventory, the "ETS Inventory," those State owned excess and/or unique

items, including, but not limited to, spare parts, spare modules, material, and test equipment that ETS determines are not immediately required for the Contractor to perform its contract services. At the start of the contract, parts, modules, material, and test equipment provided to Contractor will be in good working condition, free of defects, clean, appropriately packaged, and (if appropriate) in current calibration, to the best of the State's knowledge. Any claims/questions resulting from the turnover must be reported to the State within thirty (30) calendar days from the NTP. The Contractor will be required to sign acceptance of the State provided inventory received at the start of the contract and will be responsible to return an equal number of each item received upon termination or expiration of the contract. Any part or module purchased or received as replacement inventory by the Contractor must be equal or better in specification and quality and be accepted by the original equipment manufacturer as a replacement subject to availability, obsolescence, and or discontinuance by the original equipment manufacturer. At the end of the contract, all parts, modules, material, and test equipment must be returned in good working condition, free of defects, clean, appropriately packaged, and (if appropriate) in current calibration. Also, at that time, all manufacturers' warranties against defects in materials and workmanship for parts, modules, material, and equipment received in replacement of ETS provided inventory shall be transferred to ETS.

At any time during the contract term, including extensions, upon request by ETS, the Offeror shall provide within five calendar days a written current inventory of all parts, equipment and material received from the State.

6.4 Tools, Equipment, and Supplies

The Offeror shall provide all necessary tools and supplies (in accordance with the terms described herein), paint, materials, supplies, and consumables; any additional tools, equipment, machines, and safety equipment required. Storage of any of these items in the ETS's facilities is prohibited without the prior written consent of the State Radio Engineer. Offeror shall take full responsibility for the security and well being of the Offeror's tools, equipment, machines and supplies used or stored on the jobsite. The Offeror agrees to defend, hold harmless, and indemnify the State for any damage to or loss of Offeror's tools, equipment, machines, documentation, and supplies used or stored on the jobsite.

Note: Any vacuuming of electronic equipment shall be done with a unit by 3M model SV-497AJM ESD Safe Field Service Vacuum or equivalent.

6.5 Clean Up

The Offeror shall keep the job sites free of debris, litter, refuse, etc. The Offeror shall remove all tools, equipment, and machines from the areas upon completion of the work.

6.6 Inspection

All work done and all materials furnished shall be subject to inspection and approval by the State Radio Engineer or his representative so as to ascertain that the services

rendered are in accordance with requirements and intentions of this solicitation and resultant contract.

7 SPECIAL PROVISIONS

7.1 Scope

The furnishing of Comprehensive Maintenance and Continuous Monitoring of the Statewide Digital Microwave Radio Communications System and Its Associated Equipment for ETS as specified herein, shall be in accordance with these Special Provisions, Specifications, the General Conditions, and Chapter 103D, Hawai'i Revised Statutes, and its implementing rules.

7.2 Pre-Bid Meeting

There is no Pre-Bid Meeting for this IFB.

7.3 Examination of Sites, Facilities, and Equipment; Site Visits

Prospective Offerors should visit each site to inspect the sites, facilities, and equipment listed herein; familiarize themselves with the existing conditions; understand the amount and type of work to be performed. No additional compensation will be made due to any misunderstanding or error regarding conditions at the sites and facilities or the amount and type of work to be performed by the Offeror. Offeror shall consider the equipment to be in "as is" condition. Prospective Offerors are responsible for their traveling expenses incurred for the examination of the radio sites and equipment.

ETS has scheduled **one-time-per-site inspection visits** as follows:

SITE	DATE
Day 1:	
Tuesday May 10, 2016	
Lihue SOB Meet at Lihue SOB. Lihue, Kauai.	8:00 AM
Kukuiolono Meet at golf course parking lot.	10:00 AM
Kukui Departing from Kukuiolono at 11:30AM, allowing for a short lunch.	12:30 PM
Kilohana Departing Kukui at 1:30 PM. Meet at gate on Ehiku St. Lihue, Kauai.	2:30 PM
Day 2:	
Wednesday May 11, 2016	
Kapolei SOB Meet at Kapolei SOB, entrance closest to parking lot.	8:00 AM
Pahole	10:30 AM

Meet at the road gate roughly 2 miles past Waialua High School.

Kalanimoku

1:00 PM

Meet at Room B10, Kalanimoku SOB, 1151 Punchbowl Street, Honolulu, HI 96813. Enter Mauka door from underground parking.

Day 3: Thursday May 12, 2016

LAK SOB

8:00 AM

Meet in LAK lobby, 235 South Beretania Street, Honolulu

Round Top

9:30 AM

Meet at the site.

Diamond Head Rim

11:00 AM

Meet at Birkhimer Bunker, hard right turn immediately after entering the crater through the drive in tunnel.

Koko Head

1:00 PM

Meet at Hanauma Bay gate to Koko Head facility.

Day 4: Friday May 13, 2016

Puu Nana, Molokai

9:00 AM

Meet at DAGS Maintenance Baseyard,
45 Makaena Place,
Kaunakakai, Molokai, HI 96748

Day 5: Monday May 16, 2016

Puu Kilea, Lanai

10:00 AM

Meet at the Blue Ginger Cafe, 409 7th, Lanai City

Day 6: Tuesday May 17, 2016

Haleakala, Maui

8:30 AM

Meet at Krispy Kreme, 433 Kele Street, Kahului, Maui

Wailuku SOB

1:00 PM

Meet at Wailuku SOB, 54 S High St, Wailuku

Day 7: Wednesday May 18, 2016

Kaupulehu, Hawaii

9:00 AM

Meet at the Pine Tree Cafe,
73-4040 Hulikoa Drive, Kailua-Kona, Hawaii

Kahua Ranch

1:00 PM

Meet at Waimea McDonalds,
65-1154 Mamalahoa Hwy, Waimea, Hawaii.

Day 8: Thursday May 19, 2016

Hilo SOB

8:00 AM

Meet at Hilo SOB
75 Aupuni Street Hilo, Hawaii.

Waiakea **9:30 AM**
Meet at corner of Puainako St and Komohana St.

Humuula **12:00 PM**
Meet at the corner of Saddle Rd and Mauna Kea Access Rd.

Mauna Loa **1:30 PM**
Meet at the corner of Saddle Rd and Mauna Kea Access Rd.

Offerors planning to attend a site inspection visit must notify the State Radio Engineer no later than 12 noon Friday May 6, 2016. If no prospective Offerors notify ETS of their interest to attend, ETS may cancel the inspection visit(s). Inspection visits cancelled for lack of interest by prospective Offerors will not be rescheduled.

The State and ETS will not be responsible for the Offeror's inability to bid due to either: the unavailability of ETS personnel to arrange and/or accompany Offerors on site visits; or if Offeror's representative is unable to visit the sites and facilities during the scheduled site inspection visit.

Offerors are not permitted to visit the ETS sites and facilities without an ETS escort.

Offerors are not required to visit the facilities to submit a bid.

Questions regarding the bid specifications must be submitted in writing to ETS no later than 12 noon on Friday May 20, 2016.

Submission of bid shall be evidence that the Offeror has familiarized himself/herself with the various equipment, facilities, and site locations; understands and shall comply with the specifications if awarded the contract.

8 BID PREPARATION

8.1 Legal Name

Offeror is required to submit its offer using Offeror's exact legal name as registered with the Department of Commerce and Consumer Affairs (DCCA), if applicable; and to indicate exact legal name in the appropriate space on OFFER FORM, page OF-1. Failure to do so may delay proper execution of the contract.

Offeror's authorized signature shall be an original signature in black ink. If OFFER FORM, page OF-1, is unsigned or the affixed signature is a facsimile or a photocopy, the offer shall be automatically rejected unless accompanied by other material, containing an original signature, indicating the Offeror's intent to be bound.

8.2 Bid Quotation

The bid prices shall be all inclusive and include all costs for labor, personnel travel costs and per diem; parts (in accordance with the terms described herein), materials, supplies and consumables; any additional tools, machines, equipment and safety equipment required; costs for storage, transportation, shipping and supervision; taxes; and costs for commercial general liability insurance as required herein by the State as necessary to accomplish the Comprehensive Maintenance and Continuous Monitoring of the Statewide Digital Microwave Radio Communications System and Its Associated Equipment as specified herein.

8.3 Hawaii General Excise Tax License

Offeror shall submit its current Hawaii General Excise Tax I.D. number in the space provided on OFFER FORM, page OF-1, thereby attesting that it is doing business in the State, and that it will pay such taxes on all sales made to the State.

8.4 Responsibility of Offeror

Offeror is advised that if awarded a Contract under this solicitation, Offeror shall, upon award of the Contract, furnish proof of compliance with the requirements of §103D-310(c), HRS:

1. Chapter 237, tax clearance;
2. Chapter 383, unemployment insurance;
3. Chapter 386, workers' compensation;
4. Chapter 392, temporary disability insurance;
5. Chapter 393, prepaid health care; and
6. Chapter 103D-310(c), Certificate of Good Standing (COGS) for entities doing business in the State.

The Offeror, if awarded a Contract pursuant to this IFB, shall comply with all laws governing entities doing business in the State. The Offeror shall obtain and provide to the State:

Responsibility of Lowest Responsive Offeror. Reference §103D-310(c), HRS. A compliance document (see **Hawaii Compliance Express** below) or equivalent must be submitted **prior to the State awarding the Contract.**

Final Payment Requirements. Contractor is required to submit a tax clearance certificate for final payment on the contract. A tax clearance certificate, not over two months old, with an original green certified copy stamp, must accompany the invoice for final payment on the contract.

In addition to the tax clearance certificate, an original "Certification of Compliance for Final Payment" (SPO Form-22), will be required for final payment. A copy of the Form is available at www.spo.hawaii.gov. Select "Forms for Vendors/Contractors" from under the "Quick Links" menu at the right of the webpage.

Hawaii Compliance Express. Vendors may use the Hawaii Compliance Express (HCE) to show proof of compliance with the requirements of §103D-310(c), HRS. The HCE allows businesses to register online through a simple wizard interface at <http://vendors.ehawaii.gov> for an annual fee payable to Hawaii Information Consortium, LLC (currently \$12.00) to acquire a “Certificate of Vendor Compliance,” which provides current compliance status as of the issuance date. The “Certificate of Vendor Compliance” indicating that vendor’s status is compliant with the requirements of §103D-310(c), HRS, is accepted for both contracting purposes and final payment.

Vendors not utilizing HCE to demonstrate compliance shall provide the paper certificates as instructed below. All certificates must be valid on the date it is received. All applications for applicable clearances are the responsibility of the Offeror.

HRS Chapter 237 tax clearance requirement for award. Instructions are as follows:

Pursuant to §103D-328, HRS, lowest responsive Offeror shall be required to submit a tax clearance certificate issued by the Hawai‘i State Department of Taxation (DOTAX) and the Internal Revenue Service (IRS). The certificate shall have an original green certified copy stamp and shall be valid for six (6) months from the most recent approval stamp date on the certificate. It must be valid on the date it is received.

The tax clearance certificate shall be obtained on the State of Hawai‘i, DOTAX *TAX CLEARANCE APPLICATION* Form A-6 (Rev. 2003) which is available at the DOTAX and IRS offices in the State of Hawai‘i or the DOTAX website, and by mail or fax:

DOTAX Website (Forms & Information):
http://www.hawaii.gov/tax/a1_1alphalist.htm

HRS Chapters 383 (Unemployment Insurance), 386 (Workers’ Compensation), 392 (Temporary Disability Insurance), and 393 (Prepaid Health Care) requirements for award.

Pursuant to §103D-310(c), HRS, the lowest responsive Offeror shall be required to submit a certificate of compliance issued by the Hawai‘i State Department of Labor and Industrial Relations (DLIR). The certificate is valid for six (6) months from the date of issue and must be valid on the date it is received. A photocopy of the certificate is acceptable.

The certificate of compliance shall be obtained on the State of Hawai‘i, DLIR *APPLICATION FOR CERTIFICATE OF COMPLIANCE WITH SECTION 3-122-112, HAR*, Form LIR#27 which is available at <http://hawaii.gov/labor/formsall.shtml> or at the neighbor island DLIR District Offices. The DLIR will return the completed form to the Offeror.

The application for the certificate is the responsibility of the Offeror, and must be submitted directly to the DLIR.

Compliance with Section 103D-310(c), HRS, for an entity doing business in the State. The lowest responsive Offeror shall be required to submit a *CERTIFICATE OF GOOD STANDING* (Certificate) issued by the State of Hawaii Department of Commerce and Consumer Affairs Business Registration Division (BREG). The Certificate is valid for six months from date of issue and must be valid on the date it is received. A photocopy of the certificate is acceptable.

To obtain the Certificate, the Offeror must first be registered with the BREG. A sole proprietorship, however, is not required to register with the BREG, and therefore not required to submit the certificate.

On-line business registration and the Certificate are available at www.BusinessRegistrations.com. To register or to obtain the Certificate by phone, call (808) 586-2727 (M-F 7:45 to 4:30 HST). Offerors are advised that there are costs associated with registering and obtaining the Certificate.

Timely Submission of all Certificates. If a valid certificate is not submitted on a timely basis as determined by the Procurement Officer for award of a contract, an bid otherwise responsive and responsible may not receive the award.

8.5 Offer Guarantee

A bid security deposit is NOT required for this IFB.

8.6 Original Proposal and Copies to be Submitted

One (1) original and four (4) copies shall be submitted on the forms specified in this IFB to the ETS office located in Room B-10 of the Kalanimoku SOB, 1151 Punchbowl Street, Honolulu, HI. The original shall be clearly marked "ORIGINAL" and copies shall be clearly marked "COPY." It is imperative that the Offeror submit only one original and the required number of copies. The State will not provide any reimbursement for the cost of developing, presenting, submitting, or evaluating any bid in response to this IFB.

Offeror is encouraged to submit typewritten bids. If handwritten, it should be clearly printed. Offeror is cautioned that illegible bids of any item(s) may be automatically rejected.

The official receipt of bid shall be the time indicated on the time stamp clock in the Office of Enterprise Technology Services (ETS) located in Room B-10 of the Kalanimoku SOB, 1151 Punchbowl Street, Honolulu, HI.

8.7 References

Offeror shall list on Offer Form Page OF-3 at least three references in the State of Hawaii, other than the State of Hawaii government, for whom Offeror has performed maintenance of a comprehensive nature that included continuous monitoring of systems and equipment that is similar in nature and volume to work specified herein. The State reserves the right to contact the references provided.

8.8 Insurance

Offeror shall provide insurance information as requested on Offer Form Page OF-3.

8.9 Wage Certificate

The Offeror is required to complete and submit a Wage Certificate by which the Offeror certifies that wages will be paid and work will be performed in accordance with HRS Section 103-55.5 and Chapter 104. See Wage Certificate at W-1.

9 CAMPAIGN CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS

Offerors are hereby notified of the applicability of HRS section 11-355, which states that campaign contributions are prohibited from specified State or county government contractors during the term of the contract if the contractors are paid with funds appropriated by a legislative body. For more information, FAQs are available at the Campaign Spending Commission webpage (<http://hawaii.gov/campaign>). Information on spending issues should be directed to the Campaign Spending Commission's Executive Director or its General Counsel at (808) 586-0285.

10 AWARD

10.1 Method of Award

Award, if any, will be made to the responsive and responsible Offeror submitting the lowest Cumulative Bid as calculated below:

- The **annual** cost of the Comprehensive maintenance and continuous monitoring of the HAWAIIAN / Overbuild / Harbors Statewide Digital Microwave Radio Communications System and Its Associated Equipment; and
- The bid **per event** for Emergency Callout and/or After-Hours Maintenance and Repair of contractual items concerning the HAWAIIAN / Overbuild / Harbors Statewide Digital Microwave Radio Communications System and Its Associated Equipment; and
- The bid **per event** for Mobilization Fee for Emergency Callout and/or After-Hours Maintenance and Repair of Non-contractual items (items not covered by the terms of this contract); and
- The bid price for **one (1) hour** of additional Callout Time beyond the first 2 hours of a contractual Emergency and/or After-Hours Callout for the Maintenance of the HAWAIIAN / Overbuild / Harbors Statewide Digital Microwave Radio

Communications System and Its Associated Equipment. (Same as bid price for each hour of Callout time spent on an Emergency and/or After-Hours Callout for items not covered under this contract.

Sum = Cumulative Bid

10.2 Certifications Required Prior to Award

Prior to awarding contract(s), the State will require certification of the following insurance coverage, in accordance with the requirements specified below in Section 11.4:

Commercial General Liability (occurrence form); and Worker's Compensation.

Prior to awarding contract(s), the State will require certification of the following insurance coverage, if applicable:

- Temporary Disability
- Unemployment Insurance
- Prepaid Health Care
- Automobile Insurance

10.3 Acceptance of Bid

Acceptance of bid, if any, will be made within one hundred twenty (120) calendar days after the opening of offers, and the prices quoted by the Offeror shall remain firm for the one hundred twenty day period.

11 CONTRACT

11.1 Contract Execution

The State shall forward a formal contract to the successful Offeror for execution. The contract shall be signed by the successful Offeror and returned within ten (10) calendar days after receipt of the Offeror. **NO PERFORMANCE AND PAYMENT BONDS ARE REQUIRED.** The contract shall include the General Terms and Conditions, a copy of which is attached at page _____

11.2 Term of Contract

Contractor shall enter into a contract for furnishing comprehensive maintenance and continuous monitoring for HAWAIIAN statewide digital microwave radio communications system and its associated equipment for a period of twelve (12) months from the commencement date on the Notice to Proceed. Unless terminated, the contract may be extended for not more than four (4) additional twelve (12) month periods or portions thereof without rebidding, upon mutual agreement, provided that the contract price remains the same or lower than the initial contract.

If the extension is mutually agreed upon, Contractor shall be required to execute a supplement to the contract.

11.3 Notice to Proceed (NTP)

No work shall be undertaken by the successful Contractor prior to the commencement date specified on the Notice to Proceed. The State is not liable for any work, contract costs, expenses, loss of profits, or any damages whatsoever incurred by the successful Offeror prior to the official starting date.

11.4 Liability Insurance

NOTE: Minimum insurance requirements are different from those in prior bid specifications.

Offeror shall maintain insurance acceptable to the State in full force and effect throughout the term of this contract. The policy or policies of insurance maintained by the Offeror shall provide the following limit(s) and coverage(s):

Coverage Limits

Commercial General Liability (occurrence form)	Minimum bodily injury and broad form property damage combined single limits of liability of \$1,000,000 combined single limit per occurrence for bodily injury and property damage, and \$2,000,000 in the aggregate
Workers Compensation	Minimum coverage of Statutory: \$250,000 each accident, Liability: \$100,000 disease per each employee, and \$500,000 disease policy limit
Automobile Insurance	Minimum coverage of \$1,000,000 per accident automobile in

Each insurance policy required by this contract shall contain the following clauses:

1. "This insurance shall not be canceled, limited in scope of coverage or non-renewed until after 30 days written notice has been given both to the State of Hawaii, DAGS, State Procurement Office, P. O. Box 119, Honolulu, Hawai'i 96810-0119 and the State of Hawaii, DAGS, ETS, Kalanimoku Building, 1151 Punchbowl Street, Room B-10, Honolulu, Hawai'i, 96813."
2. For Commercial General Liability coverage, "The State of Hawaii is added as an additional insured as respects to operations performed for the State of Hawai'i."
3. "It is agreed that any insurance maintained by the State of Hawai'i will apply in excess of, and not contribute with, insurance provided by this policy."

The Offeror shall maintain the minimum insurance required in full compliance with the Hawai'i Insurance Code throughout the entire term of the contract, including extensions. The policy or policies of insurance maintained by the Offeror shall provide the limits and coverages specified herein.

The Offeror shall deposit with the State of Hawaii, DAGS, ETS on or before the effective date of the contract, certificate(s) of insurance necessary to satisfy the State that the insurance provisions of this IFB and the contract have been complied with and to keep such insurance in effect and the certificate(s) therefor on deposit with the State during the entire term of the contract, including extensions. Upon request by the State, Offeror shall furnish a copy of the policy or policies.

Failure of the Offeror to provide and keep in force such insurance shall be regarded as material default under the contract, entitling the State to exercise any or all of the remedies provided in the contract for a default of the Offeror.

The procuring of such required policy or policies of insurance shall not be construed to limit Offeror's liability or to fulfill the indemnification provisions and requirements of the contract. Notwithstanding said policy or policies of insurance, the Offeror shall be obliged for the full and total amount of any damage, injury, or loss caused by negligence or neglect connected with the contract.

11.5 Service Requirements

Any adjustments to the contract shall be made through a contract modification.

11.6 Inspection

All work done and all materials furnished shall be subject to inspection and approval by ETS so as to ascertain that the services rendered are in accordance with requirements and intentions listed herein.

12 INVOICING AND PAYMENT

The Contractor shall submit a billing statement upon completion and acceptance of the work, sending the original invoice and three (3) copies of the invoice to:

Department of Accounting and General Services
Office of Enterprise Technology Services
P.O. Box 119
Honolulu, HI 96810-0119
Attention: Fiscal Office

Payment shall be made to the Contractor at the contracted price upon certification by the State that the Contractor has satisfactorily performed the required services. All invoices shall reference the contract number.

A tax clearance certificate, not over two (2) months old, with an original green certified copy stamp, must accompany the invoice for final payment on the contract.

13 LIQUIDATED DAMAGES

Refer to Section 9 of the General Conditions. Liquidated damages are fixed at the sum of FIFTY DOLLARS (\$50.00) for each and every calendar day the Offeror delays in the completion of any item of the contract after the required date of said completion.

14 TERMINATION

In addition to any other reasons that the contract may be terminated, failure by Contractor to maintain the Aviat Extended Warranty in force for the Constellation radios and CAU equipments shall result in the immediate termination of the contract.

15 AUTHORITY

This IFB is issued under the provisions of the State Procurement Code (HRS Chapter 103D) and the State Procurement Office's applicable Directives, Circulars and administrative rules. All prospective Offerors are charged with the presumptive knowledge of all applicable legal authorities. Submission of a valid executed bid by any prospective Offeror shall constitute admission of such knowledge on the part of such prospective Offeror.

Any agreement arising out of this solicitation is subject to the approval of the Department of the Attorney General as to form, and to all further approvals, including the approval of the Governor, required by statute, regulation, rule, order, or other directive.

16 CANCELLATION OF SOLICITATIONS AND REJECTION OF OFFERS

The solicitation may be cancelled or the bids may be rejected, in whole or in part, when in the best interest of the purchasing agency, as provided in Sections 3-122-95 through 3-122-97, Hawai'i Administrative Rules.

17 PROTEST

A protest based upon the content of the solicitation shall be submitted in writing within five (5) working days after the aggrieved persons knows or should have known of the facts giving rise thereto; provided further that the protest shall not be considered unless it is submitted in writing prior to the bid opening date.

A protest of an award or proposed award shall be submitted within five (5) working days after the posting of award of the contract. The notice of award resulting from the solicitation will be posted on the State Procurement Office website: <http://hawaii.gov/spo2>; Awards; Contracts for Goods, Services, and Construction; Invitation for Bids (IFB)

Any protest pursuant to §103D-701, HRS, and Section 3-126-3, HAR, shall be submitted in writing to the Procurement Officer, ETS, 1151 Punchbowl Street, Room B-10, Honolulu, Hawai'i 96813.

WAGE CERTIFICATE
(For Service Contracts)

Subject: IFB/RFP No.: _____

Title of IFB/RFP: _____

(To be completed by Offeror)

Pursuant to Section 103-55, Hawai'i Revised Statutes (HRS), I hereby certify that if awarded the contract in excess of \$25,000, the services to be performed will be performed under the following conditions:

All applicable laws of the federal and state governments relating to workers' compensation, unemployment compensation, payment of wages, and safety will be fully complied with; and

The services to be rendered shall be performed by employees paid at wages or salaries not less than the wages paid to public officers and employees for similar work, with the exception of professional, managerial, supervisory, and clerical personnel who are not covered by Section 103-55, HRS.

I understand that failure to comply with the above conditions during the period of the contract shall result in cancellation of the contract, unless such noncompliance is corrected within a reasonable period as determined by the procurement officer. Payment in the final settlement of the contract or the release of bonds, if applicable, or both shall not be made unless the procurement officer has determined that the noncompliance has been corrected; and

I further understand that all payments required by Federal and State laws to be made by employers for the benefit of their employees are to be paid in addition to the base wage required by section 103-55, HRS.

Offeror _____

Signature _____

Title _____

Date _____

EXAMPLE CONSTELLATION / RADIO PMI INSTRUCTIONS

Offeror shall perform the following:

Microwave Radio Testing:

1. Perform all necessary tests as specified on the microwave test data work sheet.
 - a) Measure power output from transmitters and record.
 - b) Measure power output at transmitter (top of rack) monitor test point.
 - c) Calibrate transmitter power output reading to keypad.
 - d) Check receive level voltage with receiver chart and note RSL on data sheet.
 - e) Check receive level data read off chart with keypad reading. Should be within + or – 2 db.
 - f) Check receive level data with receiver sensitivity for predicted Fade Margin estimate. Should be within 2 db of predicted value. Over water hops shall be an estimate since constant fluctuations in receive levels are caused by fades.
 - g) Ensure MHSB functionality switching capability by faulting A1/A2 xmitters and receivers to verify units switching properly.
2. Vacuum accumulated dust or debris from Constellation radio.
3. Remove fan assembly from Constellation radio chassis and brush and vacuum dust.
4. Note any or all discrepancies with the microwave radio equipment.
5. Record all pertinent data to MW Radio Summary Data Sheet.
6. DC power cables feeding the Kugler blocks shall be checked for tightness in the block.
7. Perform a physical inspection of radio, all connections, waveguides and flexible waveguides, etc.... for possible issues.

Note: Any vacuuming of electronic equipment shall be done with a unit by 3M model SV-497AJM ESD Safe Field Service Vacuum or equivalent.

DC Rectifier Checks & Battery Testing:

1. Perform battery cell testing per Alber Corp.'s test procedures.
2. Record all accumulated data for batteries and label appropriately for ease of identification.
3. Record any and all discrepancies and enter in comment section of battery report.
4. If any inter-strap resistance is extraordinarily high or higher than the norm then the technician shall as part of the preventative maintenance inspection take corrective action. Corrective action shall be to remove the battery plant from service, remove the offending inter-strap, clean and re-grease the strap and battery terminal. The battery plant shall be placed back into service and the offending strap shall be re-tested and recorded into memory of the Cellcorder.
5. All battery connections shall be re-torqued per manufacturer's specifications.
6. Any corrective actions shall be stated in the comment section of the battery report for that battery plant.

EXAMPLE CONSTELLATION / RADIO PMI INSTRUCTIONS

7. Batteries and shelving shall be cleaned by wiping dust and grease off the battery and/or shelves should it be necessary.
8. Rectifier units shall be checked for proper output (float) charging voltage. Technician shall turn off the temperature controlled setting and check that each rectifier module is set to -54.0 Vdc. This is done by removing as many modules as feasible (not to cause excessive loading to a rectifier module or modules) and try to balance the output voltage as read at the battery plant for -54.0 Vdc. After completion of all rectifier voltage adjustments the system shall be placed back into temperature controlled function. This ensures batteries are not over charged.
9. The technician shall record a screenshot of the rectifier system and place on a Word document to be used as part of the "PMI Report".

Dehydrator Testing:

1. Technician shall close all manifold valves to each waveguide line for no less than one hour (1 hr) to check for leaks.
2. Dehydrator shall be tested for trip point (verify turn-on pressure level). (Dehydrator should run when air in reserve tank reaches 2 lbs psin)
3. Dehydrator shall be checked for leaks once air lines to the individual waveguides have been turned off.
4. Dehydrator shall be either vacuumed or blown free of dust and/or debris.
5. Any detected leaks shall be corrected if at all possible during the PMI session. If corrective action is not possible during the PMI an estimate of cost for corrective action must be given to the State Radio Engineer for approval.
6. Report any dehydrator discrepancies or line leaks as part of site survey sheet.

Racks and Mux Equipment: Intraplex Equipment-DSX Panels

1. Check for any changes to channel banks, if any. A previously recorded data sheet of modules housed in the channel bank shelf shall be provided.
2. All channel banks shall be cleaned and free of dust and debris.
Note: Any vacuuming of electronic equipment shall be done with a unit by 3M model SV-497AJM ESD Safe Field Service Vacuum or equivalent.
3. Test a "Live" T1 circuit by monitoring the receive side by monitoring for at least 1 hour. If no errors have been noted during this time it shall be logged on the Constellation PMI data sheet in the comments section. An HP37741A or equivalent shall be used to verify.
4. Download circuit configuration on all Intraplex DACS' (digital access cross-connect server) using Intraplex "Intraguide Program".
5. Check all rack mounting to floor and overhead supports.
6. Check to ensure grounding standards are met. Each shelf should have a ground strap from the shelf to the rack (14 awg jumper). (Some shelves do not have a ground tie point. Chassis provides ground connection to rack).

EXAMPLE CONSTELLATION / RADIO PMI INSTRUCTIONS

7. Inspect DSX panels for proper grounding.
8. Inspect equipment shelves for any corrosion, damages, paint chips, scratches, etc. Make note if such exists and take care of the discrepancy at that time, if possible or at a later date.
9. Note any DSX connections (T1 Drops) to the provided DSX-T1-Log Sheet. Also show cross-connects for each circuit.

Stratum Clocks:

1. Check to ensure unit is in timing lock status.
2. Check to ensure antenna input cables to the respective antenna input ports are firm and tight.
3. Check and note any and all alarms seen. Upon finding any alarms the technician shall connect a computer laptop to the Stratum Clock unit (Larus) to investigate the nature of the alarm and take appropriate action to rectify the problem.
4. Should a bad module or component be discovered during the preventive maintenance activity the technician shall note the problem, remove bad module (if possible) and notify his supervisor.
5. Clean the Stratum Clock unit by vacuuming and/or wiping with a cloth to remove any dust or debris off the unit.

Fujitsu Flashwave (FW) SONET:

1. While logged into the FW and monitoring alarms and constellation HLM cards and ensuring payload stays operational check for proper operation of the fiber protection switching by removing fiber pairs on Primary and protected one side at a time to ensure proper protection switching occurs. Ensure all alarms clear prior to switch back to primary.
2. Check hardware and firmware versions of modules housed in the shelf. Pictorial drawing of the shelf depicting actual cards housed in the chassis shall be provided.
3. Download configuration file for storage.
4. Clean equipment shelf of dust and debris. An antistatic vacuum cleaner shall be used.
5. Check blower fan for proper operation.
6. Check and clean filter by removing accumulated dust and debris from the filter. Filter shall be vacuumed.
7. All connections including dc power feeds, cat 5 cables, fiber jumpers, etc. shall be checked for tightness or firmness in their appropriate sockets or jacks.

Fiber Optic Cable Maintenance:

1. Check all fiber connections for improper bends near input and output jacks of equipment.

EXAMPLE CONSTELLATION / RADIO PMI INSTRUCTIONS

2. Check to ensure all excess fiber cables are properly laid in their respective trays and no excessive bends or pinching of cables exist.
3. Check to ensure no fiber inner-ducts are being crushed by other cables on the cable trays.
4. Check to ensure no fiber cables passing through the side door shields of the Constellation Microwave radios are being pinched by the cabinet door when opened.
5. Check to ensure all fiber cable bundles are loosely secured (if tie-wraps are used, they should be loose) or Velcro straps for fiber cable bundling shall be used.
6. Report any or all fiber cable damage if found.

Network Monitoring System Servers, Software, Switches, Routers, Firewalls and Associated Equipment:

1. Shall be vacuumed and/or wiped of all dust and debris.
2. Any and all fans and filters shall be vacuumed.
3. Shall be visually inspected for any physical damage or scrapes.
4. Shall report any alarms found on any unit.
5. Shall perform personality/configuration downloads necessary to ensure a backup is available should there be any catastrophic loss of parameters needed to configure such devices.
6. The configuration files shall be placed on disc and left at site and a "Master Disc" containing all devices shall be left with the State Radio Engineer.

Site Security Camera Systems:

1. A Technician shall go to the Kalanimoku Assistance Center or hub site prior to anyone deploying to any remote site to evaluate the systems performance. Any discrepancies shall be reported the "Technical Team Leader" and appropriate action shall be taken to mitigate any problems found. Shall also ensure all DVRS are recording properly at all camera sites during this evaluation process.
2. Technicians shall clean all camera housing glass by using a microfiber cloth with Windex Glass Cleaner (only) or appropriate alcohol wipes at all camera sites. Camera lens typically would not require cleaning.
3. Technicians shall possess the Pelco Client DX8100 software in their computer laptops to access the system to monitor site video.
4. Should any pressurized outdoor camera enclosure be opened for any reason, the responding technician shall replenish the "nitrogen gas" required to pressurize the enclosure.

DC Distribution Panels:

1. Check panels against previously recorded data.

EXAMPLE CONSTELLATION / RADIO PMI INSTRUCTIONS

2. Record any new connections being made to the distribution panels. Include any changes in site PMI report to State Radio Engineer.
3. Verify DC fuse sizes and equipment supported.
4. Clean shelves of dust and debris.

Site Alarms:

1. Site alarms noted for the site shall be tested to ensure its operational status.
2. Any alarms not functioning properly shall be troubleshot and corrected if possible during the preventative maintenance inspection. If the repair cannot be corrected during a PMI visit then the State Radio Engineer must approve remobilization for repair.

Site Survey Sheet:

1. All pertinent site data will be recorded on this form.
2. Any discrepancies noted on any particular test data sheet shall be recorded on this form.
3. Areas in and around Radio equipment shall be kept clean and any materials shall be kept in an orderly manner.
4. All external Radio equipment such as towers, antennas, cable trays, cable hangers, mounting brackets, tie-back pipes, tower lighting, generator fuel lines/gauges shall be visually looked at from the ground vantage point and discrepancies noted on the Survey Sheet. A photo or photos are to be provided with each discrepancy noted and attached to the Site Survey Sheet.

Antenna Systems Maintenance:

1. Shall be performed once during a contract year.
2. All personnel performing the inspection shall be a certified climber.
3. All personnel climbing shall use climbing harness and fall arrest equipment that is certified by the industry.
4. All antenna nuts and bolts holding the antenna mounting bracket to the back of the dish, tie-back arms with their associated brackets and hardware, raydome covers and associated spring assemblies, cable hangers for waveguides shall be checked and retightened or re-torque as necessary.
5. Any missing hardware such as nuts and/or bolts shall be recorded in the report and picture of the missing item taken.
6. Ensure waveguides are marked to indicate proper dish and polarity at the radio, entrance ports, base of tower and at the dish antenna.
7. Any discrepancies requiring replacement of components due to extensive wear or corrosion shall be reported to the State Radio Engineer in the Site Maintenance report. The report shall contain a description of when and where it was found, along with pictures of the component or hardware needing replacement.

EXAMPLE CONSTELLATION / RADIO PMI INSTRUCTIONS

PMI Reports:

1. A Summary Sheet of all major readings from the microwave radio testing will be included.
Original test data shall be kept by Offeror for reference.
2. A separate section providing discrepancies that were either repaired or pending further action or awaiting approval to proceed shall be included.
3. A separate section providing recommendations to the customer shall be included.
4. Shall provide a picture of discrepancies noted in the "Report" whenever possible.
5. Any pertinent reports deemed necessary to the customer will be included.
6. Provide all saved Fujitsu Flashwave configuration from PMI on disc and copies given with report.
7. Provide all saved configuration files from "Networking" equipment to CD disc or paper depending on agreed format.

Note: All maintenance shall be performed with test equipment calibrated for the performance year.

EXAMPLE CONSTELLATION / RADIO PMI SHEET

Constellation Field Test Data / Radio Hop Test

Customer:

Site Name: _____ Rack # _____

- | | | | | |
|------|--|--|----------|-----|
| 1.0 | Measure Source Voltage: | 24V (21 to 28) or 48V (42 to 56) | _____ | VDC |
| 1.1 | Verify 3dB attenuators in CAC MUX output for 3DS3 MHSB: | | _____ | |
| 1.2 | Verify local traffic continuity in IF loopback: | | _____ | |
| 2.0 | Tx Reference Frequency: | (100.000 MHz \pm 100 Hz) | A1 _____ | MHz |
| | Measured at the REF MON Test point on the transmitter assembly | | A2 _____ | MHz |
| 3.0 | Tx LO Output Frequency: | Calculated Frequency, (\pm 1 KHz) | A1 _____ | MHz |
| | Measured at LO MON Test Point on the Transmitter Assembly | | A2 _____ | MHz |
| 4.0 | Tx Power Output: | | A1 _____ | dBm |
| | Measured at SMA connector, TX OUT | | A2 _____ | dBm |
| 5.0 | Tx Power Output: | | A1 _____ | dBm |
| | Measured with keypad (Status > System > Tx Pwr) | | A2 _____ | dBm |
| 6.0 | Rx Reference Frequency: | (100.000 MHz \pm 100 Hz) | A1 _____ | MHz |
| | Measured at REF MON test point on the Receiver Assembly | | A2 _____ | MHz |
| 7.0 | Rx LO Output Frequency: | Calculated Freq. (\pm 1 KHz) | A1 _____ | MHz |
| | Measured at the LO MON test point on the Receiver Assembly | | A2 _____ | MHz |
| 8.0 | RSL: | Calculation from path data sheet | _____ | dBm |
| 8.1 | Existing equipment RSL: | | A _____ | dBm |
| 8.2 | Existing equipment type: | | B _____ | dBm |
| 9.0 | RSL: | Measured with keypad (Status > System > RSL) | A1 _____ | dBm |
| | | | A2 _____ | dBm |
| 9.1 | 10E-6 RSL: | Measured with keypad (Status > System > RSL) | A1 _____ | dBm |
| | Coordinate Tx faded to reach threshold | | A2 _____ | dBm |
| 10.0 | RSL: Top of Rack | | A1 _____ | dBm |
| | <input type="checkbox"/> Measured at Receiver Filter Output (or) | | A2 _____ | dBm |
| | <input type="checkbox"/> Measured by Farscan Interpolation | | | |
| 11.0 | Bit Error Rate Test (BERT) — 1 Hour | | A1 _____ | |
| | Objective: $\leq 1 \times 10^{-9}$, one way, unfaded. | | A2 _____ | |

Aviat Representative

Customer Representative

Example Constellation / Radio PMI SHEET

Name: _____

Date: _____

Constellation Field Test Plan Radio Hop Tests

- 1.0 Measure Source Voltage
- 2.0 On 3DS3 MHSB using 3DS3 splitter card and CAC MUX, verify a 3dB attenuator is installed in the outputs of all CAC MUX equipment.
- 3.0 Local loopback the IF of the radio using keypad. Verify traffic continuity on #1 side of radio. Repeat for #2 side of radio.
- 4.0 Measure Transmitter Reference Frequency at REF MON Test Point on Transmitter Assembly (Spec: 100.000000MHz \pm 100Hz Initial, Tolerance: \pm 300 Hz). If reading is out of tolerance use keypad to adjust per Manual, Chapter 9, Routine Maintenance
- 5.0 Measure Transmitter LO Output Frequency at LO MON Test Point on Transmitter Assembly (Spec: Calculated Frequency, \pm 1KHz Initial, Tolerance \pm 6KHz). If reading is out of tolerance use keypad to adjust per Manual, Chapter 9, Routine Maintenance.
- 6.0 Measure Transmitter Power Output at SMA connector TX OUT on Transmitter Assembly.
- 7.0 Measure Transmitter Power Output using Keypad (Status>System>TX PWR).
- 8.0 Measure Receiver Reference Frequency at REF MON Test Point on Receiver Assembly (Spec: 100.000000MHz \pm 100Hz Initial, Tolerance: \pm 300 Hz). If reading is out of tolerance use keypad to adjust per Manual, Chapter 9, Routine Maintenance.
- 9.0 Measure Receiver LO Output Frequency at LO MON Test Point on Receiver Assembly (Spec: Calculated Frequency, \pm 1KHz Initial, Tolerance \pm 6KHz). If reading is out of tolerance use keypad to adjust per Manual, Chapter 9, Routine Maintenance.
- 10.0 Record predicted Receive Signal Level (RSL) that is on Path Data Sheet.
- 11.0 Measure and record RSL on radio. Use Keypad (Status>system>RSL).
- 11.1 Fade coordinate Tx to reach 10-6 BER. Use Keypad to remotely measure RSL, record value.

Example Constellation / Radio PMI SHEET

- 12.0 Measure and record RSL at Top of Rack. Indicate where measurement is taken.
- 13.0 For the Main T/R perform one (1) hour BERT (Bit Error Rate Test), for the standby T/R perform a one (1) hour BERT at the DSX level and record the results. Performance Objective: 1×10^{-9} BER one-way unfaded. Attach BERT printouts to Field Test Data Sheet.

Example Constellation / Radio PMI SHEET

Preventive Maintenance Check	
Indoor Radio	
	Is the correct voltage present per the radios' user guide, as measured at the DC input connector?
	Is each piece of equipment individually fused with the correct size breaker as per the equipments' user guide?
	Is the equipment DC cable run free of any exposed hot wires?
	Is the DC cable run separated from other cable families in the cable runway by a minimum of 50mm (2in)?
	Is there any damage to any radio?
	Are all radio chassis securely fastened to the rack?
	Are all screws and module fasteners tight?
	Are all module blank panels or doors installed to ensure proper air flow?
	Are all waveguide connection bolts tight?
	If dehydrators are used, are all fittings tight and secure at the waveguide pressure inlet?
	Is the pressure for all waveguides at the dehydrators manufacturer's published spec.?
	Is the dehydrator grounded to the Master Ground Bar?
	Calibrate the Temperature Controller Crystal Oscillator (TCXO) +/- 2ppm
	Calibrate the top of the rack (See Datasheet for reference)
	Clean fan screen
Switching	
	Performed switching of the RF units to ensure both paths work properly (This function will be traffic affecting)
	Perform switching on the SPU
Equipment Rack	
	Appropriate gauge of wiring for power and grounding
Cables/Connectors	
	All cables with damage have been replaced
	All cables are labeled correctly
	All cable runs within the cable manufacturer's minimum bend radius
	All optical cables free of cracks near the connectors?
	Verify that all SMA connectors are properly in place and secured with the proper torque (8 to 9 inch-pounds)
	Ensure all cables are proper lengths
	Are all coaxial connectors tight?
	Are all cables (tributaries, NMS, etc.) secure in its' connector.
	Are all cables labeled correctly?
	Have all cables within the rack and runway system been cut to length with no excess coiled and placed around the rack or on the cable runway?
	Are any radio cables (DC, Ground, IF, waveguide, NMS, etc.) routed over AC lines or conduit in the cable runway system?
	Are all cable bends within the rack and runway system within the manufacturers' minimum bend radius spec?
	Do all optical cables have a minimum bend radius of 50mm (2in)?
	Have all cables within the cable runway system been supported at intervals no greater than 60cm (2ft)?
	Are all cables within the rack supported with non-metallic fasteners?

Example Constellation / Radio PMI SHEET

Grounding	
	Verify that the rack and all interfacing equipment grounding meet site specifications (Office and Earth)
	Ensure that ground connections are not corroded, have correct contact with ground panels, and are securely crimped to ground lugs,
	Check ground integrity all the way to the master ground
	Ensure that ground attachment points have been protected with the agreed anti-corrosive/conductive grease or paint preparation
	Is each piece of communication equipment individually grounded to the rack ground bar? (No daisy-chaining)
	Is each equipment ground a minimum of 4mm ² (12AWG)?
	Are both of the equipment ground wire ends terminated with the correct size termination?
	Is each of the equipment ground to rack ground bar less than 1 ohm as measured with a clamp-on ground tester?
	Is each rack to Master Ground Bar ground conductor impedance less than 1 ohm?
	Is there a rack ground bar installed?
	Is the rack ground bar isolated from the rack in some way?
	Is the rack grounded to the Master Ground Bar?
	Is the rack ground conductor terminated at the Master Ground Bar with a 2-hole compression lug?
	Has No-Ox been applied beneath the 2-hole lug at the Master Ground Bar?
	Is the Master Ground Bar to external ground ring impedance less than 1 ohm?
	Are all ground conductors going from metallic objects such as air conditioners, etc., to the Halo ground less than 1 ohm?
	Are all coax/waveguide grounds less than 1 ohm?
	Are all ODU grounds less than 1 ohm?
	Are all lightning protection device grounds less than 1 ohm?
	Are all tower legs and ground conductor impedances less than 1 ohm?
	Is the ground conductor between the service meter and electrodes less than 1 ohm?
	Is the security fence bonded to the external ground ring in at least two places?
	If it's possible to check a ground rod to soil impedance, check to make sure it is less than 5 ohms.
	In the case of a rooftop installation, is there a perimeter ground ring installed?
	Is the perimeter ground ring bonded to building steel in at least two places?
	Does the perimeter ground to building steel conductors have an impedance of less than 1 ohm?
	Are all security fence corners bonded to the external ground ring?
	Is there a ground jumper between the gate posts and the gates?
	Is single point grounding employed at the site?

Example Constellation / Radio PMI SHEET

Inspection (NOTE: Requires Climbing Tower: Aviat Networks will price with and without Inspection)	
	Antennas and radomes securely attached to mounting pieces
	Antenna mounts and alignment bolts securely tightened
	Dish strut arms correctly secured to tower members
	Verify waveguide and connectors for any signs of corrosion
	Verify waveguide and connectors for any sign of damages, compression marks, tears, dents, etc
	Verify that waveguide lines are sufficiently supported and securely held in place
	Verify and note the dehydrators pressure gauges levels
	Are the dehydrators running permanently?
	Ensure that ground connections are not corroded, have correct contact with ground panels, and are securely crimped to ground lugs. Check ground integrity all the way to the master ground.
	Check that ground attachment points have been protected with the agreed anti-corrosive/conductive grease or paint preparation.
	Verify that the 100 MHz oscillator is within tolerance ± 300 Hz at the
	Verify and adjust as needed the TX Output Power (Hi and Lo Settings)
Power	
	Check input of the radio for correct power and record value
	Power output (at the ACU transmit monitor port)
	Is the correct voltage present at the Mains input?
Software Upgrade	
	Aviat Networks will plan, manage, and implement software releases into your network.
	Upgrades performed during maintenance window – Remote Access
Database Update	
	Update Customer database with Preventive Maintenance findings and actions

GENERAL CONDITIONS

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GENERAL CONDITIONS

1. Coordination of Services by the STATE. The head of the purchasing agency ("HOPA") (which term includes the designee of the HOPA) shall coordinate the services to be provided by the CONTRACTOR in order to complete the performance required in the Contract. The CONTRACTOR shall maintain communications with HOPA at all stages of the CONTRACTOR'S work, and submit to HOPA for resolution any questions which may arise as to the performance of this Contract. "Purchasing agency" as used in these General Conditions means and includes any governmental body which is authorized under chapter 103D, HRS, or its implementing rules and procedures, or by way of delegation, to enter into contracts for the procurement of goods or services or both.
2. Relationship of Parties: Independent Contractor Status and Responsibilities, Including Tax Responsibilities.
 - a. In the performance of services required under this Contract, the CONTRACTOR is an "independent contractor," with the authority and responsibility to control and direct the performance and details of the work and services required under this Contract; however, the STATE shall have a general right to inspect work in progress to determine whether, in the STATE'S opinion, the services are being performed by the CONTRACTOR in compliance with this Contract. Unless otherwise provided by special condition, it is understood that the STATE does not agree to use the CONTRACTOR exclusively, and that the CONTRACTOR is free to contract to provide services to other individuals or entities while under contract with the STATE.
 - b. The CONTRACTOR and the CONTRACTOR'S employees and agents are not by reason of this Contract, agents or employees of the State for any purpose, and the CONTRACTOR and the CONTRACTOR'S employees and agents shall not be entitled to claim or receive from the State any vacation, sick leave, retirement, workers' compensation, unemployment insurance, or other benefits provided to state employees.
 - c. The CONTRACTOR shall be responsible for the accuracy, completeness, and adequacy of the CONTRACTOR'S performance under this Contract. Furthermore, the CONTRACTOR intentionally, voluntarily, and knowingly assumes the sole and entire liability to the CONTRACTOR'S employees and agents, and to any individual not a party to this Contract, for all loss, damage, or injury caused by the CONTRACTOR, or the CONTRACTOR'S employees or agents in the course of their employment.
 - d. The CONTRACTOR shall be responsible for payment of all applicable federal, state, and county taxes and fees which may become due and owing by the CONTRACTOR by reason of this Contract, including but not limited to (i) income taxes, (ii) employment related fees, assessments, and taxes, and (iii) general excise taxes. The CONTRACTOR also is responsible for obtaining all licenses, permits, and certificates that may be required in order to perform this Contract.
 - e. The CONTRACTOR shall obtain a general excise tax license from the Department of Taxation, State of Hawaii, in accordance with section 237-9, HRS, and shall comply with all requirements thereof. The CONTRACTOR shall obtain a tax clearance certificate from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of the Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid and submit the same to the STATE prior to commencing any performance under this Contract. The CONTRACTOR shall also be solely responsible for meeting all requirements necessary to obtain the tax clearance certificate required for final payment under sections 103-53 and 103D-328, HRS, and paragraph 17 of these General Conditions.
 - f. The CONTRACTOR is responsible for securing all employee-related insurance coverage for the CONTRACTOR and the CONTRACTOR'S employees and agents that is or may be required by law, and for payment of all premiums, costs, and other liabilities associated with securing the insurance coverage.

- g. The CONTRACTOR shall obtain a certificate of compliance issued by the Department of Labor and Industrial Relations, State of Hawaii, in accordance with section 103D-310, HRS, and section 3-122-112, HAR, that is current within six months of the date of issuance.
- h. The CONTRACTOR shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs, State of Hawaii, in accordance with section 103D-310, HRS, and section 3-122-112, HAR, that is current within six months of the date of issuance.
- i. In lieu of the above certificates from the Department of Taxation, Labor and Industrial Relations, and Commerce and Consumer Affairs, the CONTRACTOR may submit proof of compliance through the State Procurement Office's designated certification process.

3. Personnel Requirements.

- a. The CONTRACTOR shall secure, at the CONTRACTOR'S own expense, all personnel required to perform this Contract.
- b. The CONTRACTOR shall ensure that the CONTRACTOR'S employees or agents are experienced and fully qualified to engage in the activities and perform the services required under this Contract, and that all applicable licensing and operating requirements imposed or required under federal, state, or county law, and all applicable accreditation and other standards of quality generally accepted in the field of the activities of such employees and agents are complied with and satisfied.

4. Nondiscrimination. No person performing work under this Contract, including any subcontractor, employee, or agent of the CONTRACTOR, shall engage in any discrimination that is prohibited by any applicable federal, state, or county law.

5. Conflicts of Interest. The CONTRACTOR represents that neither the CONTRACTOR, nor any employee or agent of the CONTRACTOR, presently has any interest, and promises that no such interest, direct or indirect, shall be acquired, that would or might conflict in any manner or degree with the CONTRACTOR'S performance under this Contract.

6. Subcontracts and Assignments. The CONTRACTOR shall not assign or subcontract any of the CONTRACTOR'S duties, obligations, or interests under this Contract and no such assignment or subcontract shall be effective unless (i) the CONTRACTOR obtains the prior written consent of the STATE, and (ii) the CONTRACTOR'S assignee or subcontractor submits to the STATE a tax clearance certificate from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR'S assignee or subcontractor have been paid. Additionally, no assignment by the CONTRACTOR of the CONTRACTOR'S right to compensation under this Contract shall be effective unless and until the assignment is approved by the Comptroller of the State of Hawaii, as provided in section 40-58, HRS.

a. Recognition of a successor in interest. When in the best interest of the State, a successor in interest may be recognized in an assignment contract in which the STATE, the CONTRACTOR and the assignee or transferee (hereinafter referred to as the "Assignee") agree that:

- (1) The Assignee assumes all of the CONTRACTOR'S obligations;
- (2) The CONTRACTOR remains liable for all obligations under this Contract but waives all rights under this Contract as against the STATE; and
- (3) The CONTRACTOR shall continue to furnish, and the Assignee shall also furnish, all required bonds.

b. Change of name. When the CONTRACTOR asks to change the name in which it holds this Contract with the STATE, the procurement officer of the purchasing agency (hereinafter referred to as the "Agency procurement officer") shall, upon receipt of a document acceptable or satisfactory to the

Agency procurement officer indicating such change of name (for example, an amendment to the CONTRACTOR'S articles of incorporation), enter into an amendment to this Contract with the CONTRACTOR to effect such a change of name. The amendment to this Contract changing the CONTRACTOR'S name shall specifically indicate that no other terms and conditions of this Contract are thereby changed.

- c. Reports. All assignment contracts and amendments to this Contract effecting changes of the CONTRACTOR'S name or novations hereunder shall be reported to the chief procurement officer (CPO) as defined in section 103D-203(a), HRS, within thirty days of the date that the assignment contract or amendment becomes effective.
 - d. Actions affecting more than one purchasing agency. Notwithstanding the provisions of subparagraphs 6a through 6c herein, when the CONTRACTOR holds contracts with more than one purchasing agency of the State, the assignment contracts and the novation and change of name amendments herein authorized shall be processed only through the CPO's office.
7. Indemnification and Defense. The CONTRACTOR shall defend, indemnify, and hold harmless the State of Hawaii, the contracting agency, and their officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including all attorneys' fees, and all claims, suits, and demands therefore, arising out of or resulting from the acts or omissions of the CONTRACTOR or the CONTRACTOR'S employees, officers, agents, or subcontractors under this Contract. The provisions of this paragraph shall remain in full force and effect notwithstanding the expiration or early termination of this Contract.
 8. Cost of Litigation. In case the STATE shall, without any fault on its part, be made a party to any litigation commenced by or against the CONTRACTOR in connection with this Contract, the CONTRACTOR shall pay all costs and expenses incurred by or imposed on the STATE, including attorneys' fees.
 9. Liquidated Damages. When the CONTRACTOR is given notice of delay or nonperformance as specified in paragraph 13 (Termination for Default) and fails to cure in the time specified, it is agreed the CONTRACTOR shall pay to the STATE the amount, if any, set forth in this Contract per calendar day from the date set for cure until either (i) the STATE reasonably obtains similar goods or services, or both, if the CONTRACTOR is terminated for default, or (ii) until the CONTRACTOR provides the goods or services, or both, if the CONTRACTOR is not terminated for default. To the extent that the CONTRACTOR'S delay or nonperformance is excused under paragraph 13d (Excuse for Nonperformance or Delay Performance), liquidated damages shall not be assessable against the CONTRACTOR. The CONTRACTOR remains liable for damages caused other than by delay.
 10. STATE'S Right of Offset. The STATE may offset against any monies or other obligations the STATE owes to the CONTRACTOR under this Contract, any amounts owed to the State of Hawaii by the CONTRACTOR under this Contract or any other contracts, or pursuant to any law or other obligation owed to the State of Hawaii by the CONTRACTOR, including, without limitation, the payment of any taxes or levies of any kind or nature. The STATE will notify the CONTRACTOR in writing of any offset and the nature of such offset. For purposes of this paragraph, amounts owed to the State of Hawaii shall not include debts or obligations which have been liquidated, agreed to by the CONTRACTOR, and are covered by an installment payment or other settlement plan approved by the State of Hawaii, provided, however, that the CONTRACTOR shall be entitled to such exclusion only to the extent that the CONTRACTOR is current with, and not delinquent on, any payments or obligations owed to the State of Hawaii under such payment or other settlement plan.
 11. Disputes. Disputes shall be resolved in accordance with section 103D-703, HRS, and chapter 3-126, Hawaii Administrative Rules ("HAR"), as the same may be amended from time to time.
 12. Suspension of Contract. The STATE reserves the right at any time and for any reason to suspend this Contract for any reasonable period, upon written notice to the CONTRACTOR in accordance with the provisions herein.
 - a. Order to stop performance. The Agency procurement officer may, by written order to the CONTRACTOR, at any time, and without notice to any surety, require the CONTRACTOR to stop all or any part of the performance called for by this Contract. This order shall be for a specified

period not exceeding sixty (60) days after the order is delivered to the CONTRACTOR, unless the parties agree to any further period. Any such order shall be identified specifically as a stop performance order issued pursuant to this section. Stop performance orders shall include, as appropriate: (1) A clear description of the work to be suspended; (2) Instructions as to the issuance of further orders by the CONTRACTOR for material or services; (3) Guidance as to action to be taken on subcontracts; and (4) Other instructions and suggestions to the CONTRACTOR for minimizing costs. Upon receipt of such an order, the CONTRACTOR shall forthwith comply with its terms and suspend all performance under this Contract at the time stated, provided, however, the CONTRACTOR shall take all reasonable steps to minimize the occurrence of costs allocable to the performance covered by the order during the period of performance stoppage. Before the stop performance order expires, or within any further period to which the parties shall have agreed, the Agency procurement officer shall either:

- (1) Cancel the stop performance order; or
- (2) Terminate the performance covered by such order as provided in the termination for default provision or the termination for convenience provision of this Contract.

b. Cancellation or expiration of the order. If a stop performance order issued under this section is cancelled at any time during the period specified in the order, or if the period of the order or any extension thereof expires, the CONTRACTOR shall have the right to resume performance. An appropriate adjustment shall be made in the delivery schedule or contract price, or both, and the Contract shall be modified in writing accordingly, if:

- (1) The stop performance order results in an increase in the time required for, or in the CONTRACTOR'S cost properly allocable to, the performance of any part of this Contract; and
- (2) The CONTRACTOR asserts a claim for such an adjustment within thirty (30) days after the end of the period of performance stoppage; provided that, if the Agency procurement officer decides that the facts justify such action, any such claim asserted may be received and acted upon at any time prior to final payment under this Contract.

c. Termination of stopped performance. If a stop performance order is not cancelled and the performance covered by such order is terminated for default or convenience, the reasonable costs resulting from the stop performance order shall be allowable by adjustment or otherwise.

d. Adjustment of price. Any adjustment in contract price made pursuant to this paragraph shall be determined in accordance with the price adjustment provision of this Contract.

13. Termination for Default.

a. Default. If the CONTRACTOR refuses or fails to perform any of the provisions of this Contract with such diligence as will ensure its completion within the time specified in this Contract, or any extension thereof, otherwise fails to timely satisfy the Contract provisions, or commits any other substantial breach of this Contract, the Agency procurement officer may notify the CONTRACTOR in writing of the delay or non-performance and if not cured in ten (10) days or any longer time specified in writing by the Agency procurement officer, such officer may terminate the CONTRACTOR'S right to proceed with the Contract or such part of the Contract as to which there has been delay or a failure to properly perform. In the event of termination in whole or in part, the Agency procurement officer may procure similar goods or services in a manner and upon the terms deemed appropriate by the Agency procurement officer. The CONTRACTOR shall continue performance of the Contract to the extent it is not terminated and shall be liable for excess costs incurred in procuring similar goods or services.

b. CONTRACTOR'S duties. Notwithstanding termination of the Contract and subject to any directions from the Agency procurement officer, the CONTRACTOR shall take timely, reasonable, and

necessary action to protect and preserve property in the possession of the CONTRACTOR in which the STATE has an interest.

- c. Compensation. Payment for completed goods and services delivered and accepted by the STATE shall be at the price set forth in the Contract. Payment for the protection and preservation of property shall be in an amount agreed upon by the CONTRACTOR and the Agency procurement officer. If the parties fail to agree, the Agency procurement officer shall set an amount subject to the CONTRACTOR'S rights under chapter 3-126, HAR. The STATE may withhold from amounts due the CONTRACTOR such sums as the Agency procurement officer deems to be necessary to protect the STATE against loss because of outstanding liens or claims and to reimburse the STATE for the excess costs expected to be incurred by the STATE in procuring similar goods and services.
- d. Excuse for nonperformance or delayed performance. The CONTRACTOR shall not be in default by reason of any failure in performance of this Contract in accordance with its terms, including any failure by the CONTRACTOR to make progress in the prosecution of the performance hereunder which endangers such performance, if the CONTRACTOR has notified the Agency procurement officer within fifteen (15) days after the cause of the delay and the failure arises out of causes such as: acts of God; acts of a public enemy; acts of the State and any other governmental body in its sovereign or contractual capacity; fires; floods; epidemics; quarantine restrictions; strikes or other labor disputes; freight embargoes; or unusually severe weather. If the failure to perform is caused by the failure of a subcontractor to perform or to make progress, and if such failure arises out of causes similar to those set forth above, the CONTRACTOR shall not be deemed to be in default, unless the goods and services to be furnished by the subcontractor were reasonably obtainable from other sources in sufficient time to permit the CONTRACTOR to meet the requirements of the Contract. Upon request of the CONTRACTOR, the Agency procurement officer shall ascertain the facts and extent of such failure, and, if such officer determines that any failure to perform was occasioned by any one or more of the excusable causes, and that, but for the excusable cause, the CONTRACTOR'S progress and performance would have met the terms of the Contract, the delivery schedule shall be revised accordingly, subject to the rights of the STATE under this Contract. As used in this paragraph, the term "subcontractor" means subcontractor at any tier.
- e. Erroneous termination for default. If, after notice of termination of the CONTRACTOR'S right to proceed under this paragraph, it is determined for any reason that the CONTRACTOR was not in default under this paragraph, or that the delay was excusable under the provisions of subparagraph 13d, "Excuse for nonperformance or delayed performance," the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to paragraph 14.
- f. Additional rights and remedies. The rights and remedies provided in this paragraph are in addition to any other rights and remedies provided by law or under this Contract.

14. Termination for Convenience.

- a. Termination. The Agency procurement officer may, when the interests of the STATE so require, terminate this Contract in whole or in part, for the convenience of the STATE. The Agency procurement officer shall give written notice of the termination to the CONTRACTOR specifying the part of the Contract terminated and when termination becomes effective.
- b. CONTRACTOR'S obligations. The CONTRACTOR shall incur no further obligations in connection with the terminated performance and on the date(s) set in the notice of termination the CONTRACTOR will stop performance to the extent specified. The CONTRACTOR shall also terminate outstanding orders and subcontracts as they relate to the terminated performance. The CONTRACTOR shall settle the liabilities and claims arising out of the termination of subcontracts and orders connected with the terminated performance subject to the STATE'S approval. The Agency procurement officer may direct the CONTRACTOR to assign the CONTRACTOR'S right, title, and interest under terminated orders or subcontracts to the STATE. The CONTRACTOR must still complete the performance not terminated by the notice of termination and may incur obligations as necessary to do so.

- c. Right to goods and work product. The Agency procurement officer may require the CONTRACTOR to transfer title and deliver to the STATE in the manner and to the extent directed by the Agency procurement officer:

- (1) Any completed goods or work product; and
- (2) The partially completed goods and materials, parts, tools, dies, jigs, fixtures, plans, drawings, information, and contract rights (hereinafter called "manufacturing material") as the CONTRACTOR has specifically produced or specially acquired for the performance of the terminated part of this Contract.

The CONTRACTOR shall, upon direction of the Agency procurement officer, protect and preserve property in the possession of the CONTRACTOR in which the STATE has an interest. If the Agency procurement officer does not exercise this right, the CONTRACTOR shall use best efforts to sell such goods and manufacturing materials. Use of this paragraph in no way implies that the STATE has breached the Contract by exercise of the termination for convenience provision.

- d. Compensation.

- (1) The CONTRACTOR shall submit a termination claim specifying the amounts due because of the termination for convenience together with the cost or pricing data, submitted to the extent required by chapter 3-122, HAR, bearing on such claim. If the CONTRACTOR fails to file a termination claim within one year from the effective date of termination, the Agency procurement officer may pay the CONTRACTOR, if at all, an amount set in accordance with subparagraph 14d(3) below.
- (2) The Agency procurement officer and the CONTRACTOR may agree to a settlement provided the CONTRACTOR has filed a termination claim supported by cost or pricing data submitted as required and that the settlement does not exceed the total Contract price plus settlement costs reduced by payments previously made by the STATE, the proceeds of any sales of goods and manufacturing materials under subparagraph 14c, and the Contract price of the performance not terminated.
- (3) Absent complete agreement under subparagraph 14d(2) the Agency procurement officer shall pay the CONTRACTOR the following amounts, provided payments agreed to under subparagraph 14d(2) shall not duplicate payments under this subparagraph for the following:
 - (A) Contract prices for goods or services accepted under the Contract;
 - (B) Costs incurred in preparing to perform and performing the terminated portion of the performance plus a fair and reasonable profit on such portion of the performance, such profit shall not include anticipatory profit or consequential damages, less amounts paid or to be paid for accepted goods or services; provided, however, that if it appears that the CONTRACTOR would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss;
 - (C) Costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to subparagraph 14b. These costs must not include costs paid in accordance with subparagraph 14d(3)(B);
 - (D) The reasonable settlement costs of the CONTRACTOR, including accounting, legal, clerical, and other expenses reasonably necessary for the preparation of settlement claims and supporting data with respect to the terminated portion of the Contract and for the termination of subcontracts thereunder, together with reasonable storage, transportation, and other costs incurred in connection with the protection or disposition of property allocable to the terminated portion of this Contract. The total sum to be paid the CONTRACTOR under this subparagraph shall not exceed the

total Contract price plus the reasonable settlement costs of the CONTRACTOR reduced by the amount of payments otherwise made, the proceeds of any sales of supplies and manufacturing materials under subparagraph 14d(2), and the contract price of performance not terminated.

- (4) Costs claimed, agreed to, or established under subparagraphs 14d(2) and 14d(3) shall be in accordance with Chapter 3-123 (Cost Principles) of the Procurement Rules.

15. Claims Based on the Agency Procurement Officer's Actions or Omissions.

a. Changes in scope. If any action or omission on the part of the Agency procurement officer (which term includes the designee of such officer for purposes of this paragraph 15) requiring performance changes within the scope of the Contract constitutes the basis for a claim by the CONTRACTOR for additional compensation, damages, or an extension of time for completion, the CONTRACTOR shall continue with performance of the Contract in compliance with the directions or orders of such officials, but by so doing, the CONTRACTOR shall not be deemed to have prejudiced any claim for additional compensation, damages, or an extension of time for completion; provided:

- (1) Written notice required. The CONTRACTOR shall give written notice to the Agency procurement officer:

- (A) Prior to the commencement of the performance involved, if at that time the CONTRACTOR knows of the occurrence of such action or omission;

- (B) Within thirty (30) days after the CONTRACTOR knows of the occurrence of such action or omission, if the CONTRACTOR did not have such knowledge prior to the commencement of the performance; or

- (C) Within such further time as may be allowed by the Agency procurement officer in writing.

- (2) Notice content. This notice shall state that the CONTRACTOR regards the act or omission as a reason which may entitle the CONTRACTOR to additional compensation, damages, or an extension of time. The Agency procurement officer, upon receipt of such notice, may rescind such action, remedy such omission, or take such other steps as may be deemed advisable in the discretion of the Agency procurement officer;

- (3) Basis must be explained. The notice required by subparagraph 15a(1) describes as clearly as practicable at the time the reasons why the CONTRACTOR believes that additional compensation, damages, or an extension of time may be remedies to which the CONTRACTOR is entitled; and

- (4) Claim must be justified. The CONTRACTOR must maintain and, upon request, make available to the Agency procurement officer within a reasonable time, detailed records to the extent practicable, and other documentation and evidence satisfactory to the STATE, justifying the claimed additional costs or an extension of time in connection with such changes.

b. CONTRACTOR not excused. Nothing herein contained, however, shall excuse the CONTRACTOR from compliance with any rules or laws precluding any state officers and CONTRACTOR from acting in collusion or bad faith in issuing or performing change orders which are clearly not within the scope of the Contract.

c. Price adjustment. Any adjustment in the price made pursuant to this paragraph shall be determined in accordance with the price adjustment provision of this Contract.

16. Costs and Expenses. Any reimbursement due the CONTRACTOR for per diem and transportation expenses under this Contract shall be subject to chapter 3-123 (Cost Principles), HAR, and the following guidelines:

- a. Reimbursement for air transportation shall be for actual cost or coach class air fare, whichever is less.
- b. Reimbursement for ground transportation costs shall not exceed the actual cost of renting an intermediate-sized vehicle.
- c. Unless prior written approval of the HOPA is obtained, reimbursement for subsistence allowance (i.e., hotel and meals, etc.) shall not exceed the applicable daily authorized rates for inter-island or out-of-state travel that are set forth in the current Governor's Executive Order authorizing adjustments in salaries and benefits for state officers and employees in the executive branch who are excluded from collective bargaining coverage.

17. Payment Procedures; Final Payment; Tax Clearance.

- a. Original invoices required. All payments under this Contract shall be made only upon submission by the CONTRACTOR of original invoices specifying the amount due and certifying that services requested under the Contract have been performed by the CONTRACTOR according to the Contract.
- b. Subject to available funds. Such payments are subject to availability of funds and allotment by the Director of Finance in accordance with chapter 37, HRS. Further, all payments shall be made in accordance with and subject to chapter 40, HRS.
- c. Prompt payment.
 - (1) Any money, other than retainage, paid to the CONTRACTOR shall be disbursed to subcontractors within ten (10) days after receipt of the money in accordance with the terms of the subcontract; provided that the subcontractor has met all the terms and conditions of the subcontract and there are no bona fide disputes; and
 - (2) Upon final payment to the CONTRACTOR, full payment to the subcontractor, including retainage, shall be made within ten (10) days after receipt of the money; provided that there are no bona fide disputes over the subcontractor's performance under the subcontract.
- d. Final payment. Final payment under this Contract shall be subject to sections 103-53 and 103D-328, HRS, which require a tax clearance from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid. Further, in accordance with section 3-122-112, HAR, CONTRACTOR shall provide a certificate affirming that the CONTRACTOR has remained in compliance with all applicable laws as required by this section.

18. Federal Funds. If this Contract is payable in whole or in part from federal funds, CONTRACTOR agrees that, as to the portion of the compensation under this Contract to be payable from federal funds, the CONTRACTOR shall be paid only from such funds received from the federal government, and shall not be paid from any other funds. Failure of the STATE to receive anticipated federal funds shall not be considered a breach by the STATE or an excuse for nonperformance by the CONTRACTOR.

19. Modifications of Contract.

- a. In writing. Any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract permitted by this Contract shall be made by written amendment to this Contract, signed by the CONTRACTOR and the STATE, provided that change orders shall be made in accordance with paragraph 20 herein.
- b. No oral modification. No oral modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract shall be permitted.

- c. Agency procurement officer. By written order, at any time, and without notice to any surety, the Agency procurement officer may unilaterally order of the CONTRACTOR:
 - (A) Changes in the work within the scope of the Contract; and
 - (B) Changes in the time of performance of the Contract that do not alter the scope of the Contract work.
 - d. Adjustments of price or time for performance. If any modification increases or decreases the CONTRACTOR'S cost of, or the time required for, performance of any part of the work under this Contract, an adjustment shall be made and this Contract modified in writing accordingly. Any adjustment in contract price made pursuant to this clause shall be determined, where applicable, in accordance with the price adjustment clause of this Contract or as negotiated.
 - e. Claim barred after final payment. No claim by the CONTRACTOR for an adjustment hereunder shall be allowed if written modification of the Contract is not made prior to final payment under this Contract.
 - f. Claims not barred. In the absence of a written contract modification, nothing in this clause shall be deemed to restrict the CONTRACTOR'S right to pursue a claim under this Contract or for a breach of contract.
 - g. Head of the purchasing agency approval. If this is a professional services contract awarded pursuant to section 103D-303 or 103D-304, HRS, any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract which increases the amount payable to the CONTRACTOR by at least \$25,000.00 and ten per cent (10%) or more of the initial contract price, must receive the prior approval of the head of the purchasing agency.
 - h. Tax clearance. The STATE may, at its discretion, require the CONTRACTOR to submit to the STATE, prior to the STATE'S approval of any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract, a tax clearance from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid.
 - i. Sole source contracts. Amendments to sole source contracts that would change the original scope of the Contract may only be made with the approval of the CPO. Annual renewal of a sole source contract for services should not be submitted as an amendment.
20. Change Order. The Agency procurement officer may, by a written order signed only by the STATE, at any time, and without notice to any surety, and subject to all appropriate adjustments, make changes within the general scope of this Contract in any one or more of the following:
- (1) Drawings, designs, or specifications, if the goods or services to be furnished are to be specially provided to the STATE in accordance therewith;
 - (2) Method of delivery; or
 - (3) Place of delivery.
- a. Adjustments of price or time for performance. If any change order increases or decreases the CONTRACTOR'S cost of, or the time required for, performance of any part of the work under this Contract, whether or not changed by the order, an adjustment shall be made and the Contract modified in writing accordingly. Any adjustment in the Contract price made pursuant to this provision shall be determined in accordance with the price adjustment provision of this Contract. Failure of the parties to agree to an adjustment shall not excuse the CONTRACTOR from proceeding with the Contract as changed, provided that the Agency procurement officer promptly and duly makes the provisional adjustments in payment or time for performance as may be reasonable. By

proceeding with the work, the CONTRACTOR shall not be deemed to have prejudiced any claim for additional compensation, or any extension of time for completion.

- b. Time period for claim. Within ten (10) days after receipt of a written change order under subparagraph 20a, unless the period is extended by the Agency procurement officer in writing, the CONTRACTOR shall respond with a claim for an adjustment. The requirement for a timely written response by CONTRACTOR cannot be waived and shall be a condition precedent to the assertion of a claim.
- c. Claim barred after final payment. No claim by the CONTRACTOR for an adjustment hereunder shall be allowed if a written response is not given prior to final payment under this Contract.
- d. Other claims not barred. In the absence of a change order, nothing in this paragraph 20 shall be deemed to restrict the CONTRACTOR'S right to pursue a claim under the Contract or for breach of contract.

21. Price Adjustment.

- a. Price adjustment. Any adjustment in the contract price pursuant to a provision in this Contract shall be made in one or more of the following ways:
 - (1) By agreement on a fixed price adjustment before commencement of the pertinent performance or as soon thereafter as practicable;
 - (2) By unit prices specified in the Contract or subsequently agreed upon;
 - (3) By the costs attributable to the event or situation covered by the provision, plus appropriate profit or fee, all as specified in the Contract or subsequently agreed upon;
 - (4) In such other manner as the parties may mutually agree; or
 - (5) In the absence of agreement between the parties, by a unilateral determination by the Agency procurement officer of the costs attributable to the event or situation covered by the provision, plus appropriate profit or fee, all as computed by the Agency procurement officer in accordance with generally accepted accounting principles and applicable sections of chapters 3-123 and 3-126, HAR.
- b. Submission of cost or pricing data. The CONTRACTOR shall provide cost or pricing data for any price adjustments subject to the provisions of chapter 3-122, HAR.

22. Variation in Quantity for Definite Quantity Contracts. Upon the agreement of the STATE and the CONTRACTOR, the quantity of goods or services, or both, if a definite quantity is specified in this Contract, may be increased by a maximum of ten per cent (10%); provided the unit prices will remain the same except for any price adjustments otherwise applicable; and the Agency procurement officer makes a written determination that such an increase will either be more economical than awarding another contract or that it would not be practical to award another contract.

23. Changes in Cost-Reimbursement Contract. If this Contract is a cost-reimbursement contract, the following provisions shall apply:

- a. The Agency procurement officer may at any time by written order, and without notice to the sureties, if any, make changes within the general scope of the Contract in any one or more of the following:
 - (1) Description of performance (Attachment 1);
 - (2) Time of performance (i.e., hours of the day, days of the week, etc.);
 - (3) Place of performance of services;

- (4) Drawings, designs, or specifications when the supplies to be furnished are to be specially manufactured for the STATE in accordance with the drawings, designs, or specifications;
 - (5) Method of shipment or packing of supplies; or
 - (6) Place of delivery.
- b. If any change causes an increase or decrease in the estimated cost of, or the time required for performance of, any part of the performance under this Contract, whether or not changed by the order, or otherwise affects any other terms and conditions of this Contract, the Agency procurement officer shall make an equitable adjustment in the (1) estimated cost, delivery or completion schedule, or both; (2) amount of any fixed fee; and (3) other affected terms and shall modify the Contract accordingly.
 - c. The CONTRACTOR must assert the CONTRACTOR'S rights to an adjustment under this provision within thirty (30) days from the day of receipt of the written order. However, if the Agency procurement officer decides that the facts justify it, the Agency procurement officer may receive and act upon a proposal submitted before final payment under the Contract.
 - d. Failure to agree to any adjustment shall be a dispute under paragraph 11 of this Contract. However, nothing in this provision shall excuse the CONTRACTOR from proceeding with the Contract as changed.
 - e. Notwithstanding the terms and conditions of subparagraphs 23a and 23b, the estimated cost of this Contract and, if this Contract is incrementally funded, the funds allotted for the performance of this Contract, shall not be increased or considered to be increased except by specific written modification of the Contract indicating the new contract estimated cost and, if this contract is incrementally funded, the new amount allotted to the contract.
24. Confidentiality of Material.
- a. All material given to or made available to the CONTRACTOR by virtue of this Contract, which is identified as proprietary or confidential information, will be safeguarded by the CONTRACTOR and shall not be disclosed to any individual or organization without the prior written approval of the STATE.
 - b. All information, data, or other material provided by the CONTRACTOR to the STATE shall be subject to the Uniform Information Practices Act, chapter 92F, HRS.
25. Publicity. The CONTRACTOR shall not refer to the STATE, or any office, agency, or officer thereof, or any state employee, including the HOPA, the CPO, the Agency procurement officer, or to the services or goods, or both, provided under this Contract, in any of the CONTRACTOR'S brochures, advertisements, or other publicity of the CONTRACTOR. All media contacts with the CONTRACTOR about the subject matter of this Contract shall be referred to the Agency procurement officer.
26. Ownership Rights and Copyright. The STATE shall have complete ownership of all material, both finished and unfinished, which is developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract, and all such material shall be considered "works made for hire." All such material shall be delivered to the STATE upon expiration or termination of this Contract. The STATE, in its sole discretion, shall have the exclusive right to copyright any product, concept, or material developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract.
27. Liens and Warranties. Goods provided under this Contract shall be provided free of all liens and provided together with all applicable warranties, or with the warranties described in the Contract documents, whichever are greater.

28. Audit of Books and Records of the CONTRACTOR. The STATE may, at reasonable times and places, audit the books and records of the CONTRACTOR, prospective contractor, subcontractor, or prospective subcontractor which are related to:
- a. The cost or pricing data, and
 - b. A state contract, including subcontracts, other than a firm fixed-price contract.

29. Cost or Pricing Data. Cost or pricing data must be submitted to the Agency procurement officer and timely certified as accurate for contracts over \$100,000 unless the contract is for a multiple-term or as otherwise specified by the Agency procurement officer. Unless otherwise required by the Agency procurement officer, cost or pricing data submission is not required for contracts awarded pursuant to competitive sealed bid procedures.

If certified cost or pricing data are subsequently found to have been inaccurate, incomplete, or noncurrent as of the date stated in the certificate, the STATE is entitled to an adjustment of the contract price, including profit or fee, to exclude any significant sum by which the price, including profit or fee, was increased because of the defective data. It is presumed that overstated cost or pricing data increased the contract price in the amount of the defect plus related overhead and profit or fee. Therefore, unless there is a clear indication that the defective data was not used or relied upon, the price will be reduced in such amount.

30. Audit of Cost or Pricing Data. When cost or pricing principles are applicable, the STATE may require an audit of cost or pricing data.

31. Records Retention.

- (1) Upon any termination of this Contract or as otherwise required by applicable law, CONTRACTOR shall, pursuant to chapter 487R, HRS, destroy all copies (paper or electronic form) of personal information received from the STATE.
- (2) The CONTRACTOR and any subcontractors shall maintain the files, books, and records that relate to the Contract, including any personal information created or received by the CONTRACTOR on behalf of the STATE, and any cost or pricing data, for at least three (3) years after the date of final payment under the Contract. The personal information shall continue to be confidential and shall only be disclosed as permitted or required by law. After the three (3) year, or longer retention period as required by law has ended, the files, books, and records that contain personal information shall be destroyed pursuant to chapter 487R, HRS or returned to the STATE at the request of the STATE.

32. Antitrust Claims. The STATE and the CONTRACTOR recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, the CONTRACTOR hereby assigns to STATE any and all claims for overcharges as to goods and materials purchased in connection with this Contract, except as to overcharges which result from violations commencing after the price is established under this Contract and which are not passed on to the STATE under an escalation clause.

33. Patented Articles. The CONTRACTOR shall defend, indemnify, and hold harmless the STATE, and its officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including all attorneys fees, and all claims, suits, and demands arising out of or resulting from any claims, demands, or actions by the patent holder for infringement or other improper or unauthorized use of any patented article, patented process, or patented appliance in connection with this Contract. The CONTRACTOR shall be solely responsible for correcting or curing to the satisfaction of the STATE any such infringement or improper or unauthorized use, including, without limitation: (a) furnishing at no cost to the STATE a substitute article, process, or appliance acceptable to the STATE, (b) paying royalties or other required payments to the patent holder, (c) obtaining proper authorizations or releases from the patent holder, and (d) furnishing such security to or making such arrangements with the patent holder as may be necessary to correct or cure any such infringement or improper or unauthorized use.

34. Governing Law. The validity of this Contract and any of its terms or provisions, as well as the rights and duties of the parties to this Contract, shall be governed by the laws of the State of Hawaii. Any action at law or in equity to enforce or interpret the provisions of this Contract shall be brought in a state court of competent jurisdiction in Honolulu, Hawaii.
35. Compliance with Laws. The CONTRACTOR shall comply with all federal, state, and county laws, ordinances, codes, rules, and regulations, as the same may be amended from time to time, that in any way affect the CONTRACTOR'S performance of this Contract.
36. Conflict Between General Conditions and Procurement Rules. In the event of a conflict between the General Conditions and the procurement rules, the procurement rules in effect on the date this Contract became effective shall control and are hereby incorporated by reference.
37. Entire Contract. This Contract sets forth all of the agreements, conditions, understandings, promises, warranties, and representations between the STATE and the CONTRACTOR relative to this Contract. This Contract supersedes all prior agreements, conditions, understandings, promises, warranties, and representations, which shall have no further force or effect. There are no agreements, conditions, understandings, promises, warranties, or representations, oral or written, express or implied, between the STATE and the CONTRACTOR other than as set forth or as referred to herein.
38. Severability. In the event that any provision of this Contract is declared invalid or unenforceable by a court, such invalidity or unenforceability shall not affect the validity or enforceability of the remaining terms of this Contract.
39. Waiver. The failure of the STATE to insist upon the strict compliance with any term, provision, or condition of this Contract shall not constitute or be deemed to constitute a waiver or relinquishment of the STATE'S right to enforce the same in accordance with this Contract. The fact that the STATE specifically refers to one provision of the procurement rules or one section of the Hawaii Revised Statutes, and does not include other provisions or statutory sections in this Contract shall not constitute a waiver or relinquishment of the STATE'S rights or the CONTRACTOR'S obligations under the procurement rules or statutes.
40. Pollution Control. If during the performance of this Contract, the CONTRACTOR encounters a "release" or a "threatened release" of a reportable quantity of a "hazardous substance," "pollutant," or "contaminant" as those terms are defined in section 128D-1, HRS, the CONTRACTOR shall immediately notify the STATE and all other appropriate state, county, or federal agencies as required by law. The Contractor shall take all necessary actions, including stopping work, to avoid causing, contributing to, or making worse a release of a hazardous substance, pollutant, or contaminant, and shall promptly obey any orders the Environmental Protection Agency or the state Department of Health issues in response to the release. In the event there is an ensuing cease-work period, and the STATE determines that this Contract requires an adjustment of the time for performance, the Contract shall be modified in writing accordingly.
41. Campaign Contributions. The CONTRACTOR is hereby notified of the applicability of 11-355, HRS, which states that campaign contributions are prohibited from specified state or county government contractors during the terms of their contracts if the contractors are paid with funds appropriated by a legislative body.
42. Confidentiality of Personal Information.
- a. Definitions.
- "Personal information" means an individual's first name or first initial and last name in combination with any one or more of the following data elements, when either name or data elements are not encrypted:
- (1) Social security number;
 - (2) Driver's license number or Hawaii identification card number; or

- (3) Account number, credit or debit card number, access code, or password that would permit access to an individual's financial information.

Personal information does not include publicly available information that is lawfully made available to the general public from federal, state, or local government records.

"Technological safeguards" means the technology and the policy and procedures for use of the technology to protect and control access to personal information.

b. Confidentiality of Material.

- (1) All material given to or made available to the CONTRACTOR by the STATE by virtue of this Contract which is identified as personal information, shall be safeguarded by the CONTRACTOR and shall not be disclosed without the prior written approval of the STATE.
- (2) CONTRACTOR agrees not to retain, use, or disclose personal information for any purpose other than as permitted or required by this Contract.
- (3) CONTRACTOR agrees to implement appropriate "technological safeguards" that are acceptable to the STATE to reduce the risk of unauthorized access to personal information.
- (4) CONTRACTOR shall report to the STATE in a prompt and complete manner any security breaches involving personal information.
- (5) CONTRACTOR agrees to mitigate, to the extent practicable, any harmful effect that is known to CONTRACTOR because of a use or disclosure of personal information by CONTRACTOR in violation of the requirements of this paragraph.
- (6) CONTRACTOR shall complete and retain a log of all disclosures made of personal information received from the STATE, or personal information created or received by CONTRACTOR on behalf of the STATE.

c. Security Awareness Training and Confidentiality Agreements.

- (1) CONTRACTOR certifies that all of its employees who will have access to the personal information have completed training on security awareness topics relating to protecting personal information.
- (2) CONTRACTOR certifies that confidentiality agreements have been signed by all of its employees who will have access to the personal information acknowledging that:
 - (A) The personal information collected, used, or maintained by the CONTRACTOR will be treated as confidential;
 - (B) Access to the personal information will be allowed only as necessary to perform the Contract; and
 - (C) Use of the personal information will be restricted to uses consistent with the services subject to this Contract.

d. Termination for Cause. In addition to any other remedies provided by this Contract, if the STATE learns of a material breach by CONTRACTOR of this paragraph by CONTRACTOR, the STATE may at its sole discretion:

- (1) Provide an opportunity for the CONTRACTOR to cure the breach or end the violation; or
- (2) Immediately terminate this Contract.

In either instance, the CONTRACTOR and the STATE shall follow chapter 487N, HRS, with respect to notification of a security breach of personal information.

e. Records Retention.

- (1) Upon any termination of this Contract or as otherwise required by applicable law, CONTRACTOR shall, pursuant to chapter 487R, HRS, destroy all copies (paper or electronic form) of personal information received from the STATE.
- (2) The CONTRACTOR and any subcontractors shall maintain the files, books, and records that relate to the Contract, including any personal information created or received by the CONTRACTOR on behalf of the STATE, and any cost or pricing data, for at least three (3) years after the date of final payment under the Contract. The personal information shall continue to be confidential and shall only be disclosed as permitted or required by law. After the three (3) year, or longer retention period as required by law has ended, the files, books, and records that contain personal information shall be destroyed pursuant to chapter 487R, HRS or returned to the STATE at the request of the STATE.