Washington Military Department Emergency Management Division	Effective Date: July 1, 2009 **E911 CLOCK SYNCHRONIZER SUPPORT POLICY** **Cancels all previous E911 Clock Synchronizer Support Policies** **See Also:** WAC 118-66-050 E911 County Contract Policy E911 County Regionalization Policy E911 Training Policy NENA-04-002

CLOCK SYNCHRONIZER SUPPORT POLICY

This policy applies to all Washington State Counties eligible for the Operations Section of the County Contract.

A Clock Synchronizer is eligible for reimbursement as an Enhanced 911 (E911) expense in accordance with WAC 118-66-050.

1. Background

a. To ensure consistency of time stamps added to event records, reports and voice recordings, it is required that equipment such as Computer Aided Dispatch (CAD), Automatic Number Identification (ANI)/Automatic Location Identification (ALI) Controllers, Premise Computers, Voice Recorders, Radio Consoles, etc., will have the ability to synchronize internal clocks to a Public Safety Answering Point (PSAP) master clock. This requirement complies with National Emergency Number Association (NENA) document number NENA-04-002 recommended standard.

b. Prior to approval of this policy, the State E911 Office reimbursed $5,000 towards the purchase of a Clock Synchronizer, and, after warranty, maintenance not to exceed 10 percent of the original eligible purchase price per year.

2. Analysis

a. A Master Clock Synchronizer is recommended as equipment that should be operational in all PSAPs. Its E911 functionality is solely due to the need to assure that electronic records of E911 events captured at the PSAP can be verified for the sequence of events for post-event analysis.

b. As the number of electronic systems increases at the PSAP, the difficulty of post-event analysis is increased dramatically if system operational records cannot be compared against a common time standard.

c. Technical considerations for Master Clock Synchronizers have been developed that assure consistency in application of the technology.

d. The PSAP master clock shall be traceable to coordinated universal time (UTC) and have a continuous accuracy of .1 seconds relative to UTC when locked to the UTC time source. In the event the PSAP master clock becomes unlocked from the external UTC

source and must "free run", it will not exceed an error accumulation of more than 1 second per day.

e. The PSAP master clock system shall have a front panel display to indicate time and shall have the optional capability to provide time codes via an RS-232 serial, IRIG (Inter Range Instrumentation Group), and Ethernet 10/100 Base T interfaces. These interfaces will provide a time code that will be used by the PSAP equipment to synchronize their internal clocks. The master clock must have the ability to automatically adjust the master clock display, RS-232 and IRIG time codes for Daylight Saving Time. It must have a selectable 12- or 24-hour display of Hours, Minutes and Seconds. It must have a means to indicate its status; locked/unlocked and time synchronized or unsynchronized to the external UTC time source. The master clock shall have alarm dry contact closures that are activated upon loss of power or when the clock has lost time synchronization. Optionally, equipment synchronizing to the American Standard Code for Information Interchange (ASCII) time code data may derive alarm status by monitoring the Time Sync Status character within the data stream.
f. When developing site requirements for a PSAP it is important to consider that the type and number of time code interfaces required for each site will vary according to Customer Premise Equipment type, quantity, and manufacturer. The PSAP master clock system therefore must be configured accordingly to meet the quantity and types of time code interfaces required.
g. It is desirable that the PSAP master clock be connected to an uninterruptible power supply (UPS) or be equipped with internal batteries which are continually charged from main power. If equipped with internal batteries, the batteries must be capable of powering the equipment for a minimum of 15 minutes.
h. Equipment connected to the master clock must maintain a continuous accuracy of plus or minus .25 seconds relative to the PSAP master clock.

3. Decision

a. The State E911 Office will reimburse eligible counties for the purchase or lease and installation of the hardware and software components required for a basic Clock Synchronizer as recommended by NENA-04-002 Technical Reference PSAP Master Clock Standard requirements and the necessary modules purchased at the same time to integrate the master clock signaling to the PSAP's electronic systems. This should be claimed under line item C4.
b. The requested amount must be reasonable, prudent, and applicable to E911. Prior to purchasing or leasing the equipment, county must submit a written quote including shipping, handling, taxes, and installation charges to the State E911 Office for review and approval. Without prior written approval the purchase or lease may not be eligible for reimbursement by the State E911 Office.
c. Purchase or lease of any E911 equipment must follow PSAP or governing jurisdictional procurement policies.
d. Maintenance cost shall not exceed 10 percent of the approved purchase price and should be claimed under line item C4.1. Maintenance funds may be used for agreements with vendors, time and materials and/or salaries for internal employee to maintain equipment. Maintenance funds may also be used for training internal employees to maintain equipment. Maintenance funds may be used to purchase spare parts.
e. Reimbursement for lease costs shall be on a year-to-year basis.

4. Moratorium

In order for the State Office to complete the necessary adjustments for the Mid-Year review, a moratorium will be in place from **March 1** through **June 30**. During this moratorium, no equipment requests will be processed.

In the event of an emergency, an exception will be made on a case by case basis.

Approved by: 9/22/09
Robert Oenning, State E911 Administrator