

Automated Surface Observing System (ASOS) FAC: 1341

CATCODE: 149XX3

OPR: AFWA/A5/A8, MAJCOM/A3W

OCR: MAJCOM/A6

1.1. Description. The ASOS provides automated aviation weather observations 24/7, updates observations every minute, and continuously reports significant weather changes as they occur. ASOS is capable of attended and unattended operation, and continuously conducts self-tests for electronic, mechanical, and sensor related issues and provides isolation of failures of the subsystems and components. The system provides current weather information, automatically generating Aviation Routine Weather Reports (METAR) and Aviation Selected Special Weather (SPECI) reports to local, area, and national reporting levels when conditions warrant.

1.2. Requirements Determination. ASOS is a Tri-Agency program managed by the NWS, the FAA, and the DoD. The Air Force Weather Agency is DoD's and Air Force's executive agent for 44 of the 1,003 government systems. The ASOS is designed to support weather forecast activities and aviation operations and, at the same time, support the research needs of the meteorological, hydrological, and climatological communities. Obtain further information through AFWA/A5/8 or MAJCOM A3 weather staff.

1.3. Scope Determination. The basic ASOS consists of one Acquisition Control Unit (ACU) and a Data Collection Package (DCP), sensors, wind mast, concrete mounting pads, cabling rails for the associated cabling, Ground to Air (GTA) radio, Operator Interface Device (OID), and Video Display Unit (VDU). The ACU/DCP collects, processes, and disseminates the data to local, area, and national levels. The OID and VDUs are located per user requirements to support local mission.

1.4. Dimensions. The ASOS primary sensor group physically requires a 75 ft x 59 ft area clear of ground obstructions, reflective surfaces, and light sources. The remote sensor site (dual cabinet with a discontinuity) requires an additional 41 ft 5 in x 75 ft area clear of ground obstructions, reflective surfaces, and light sources. The sensor groups require a crushed rock walkway three feet deep around the rail system to mitigate plant growth. Under the ACU/DCP cabinet a 2 ft x 4 ft concrete pad is installed for maintenance access area.

1.5. Design Considerations.

1.5.1. Communications Requirements. USAF ASOS has a dial in/out capability of METAR/SPECI observations to an NWS gateway and the ASOS Operations and Monitoring Center (AOMC). Dual cabinet systems require a low band UHF radio link to transfer information. The ASOS also provides automatic reporting with a GTA radio (117.975 to 136.975MHz) and requires telephone lines for weather reporting and access. Future connection to the Air Force GIG is planned in FY12.

1.5.2. Power Requirements. Stable/reliable 240/115 VAC, 30 A service. The requirement for emergency power is determined under AFI 32-1063.