Networked Micro-environmental Sensor Pods

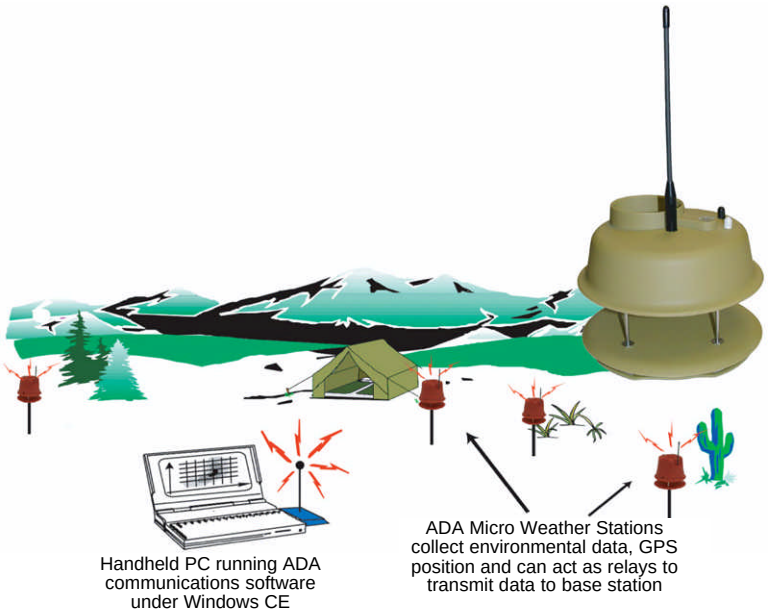
smiths

Smiths Detection

Date Revised: 25 NOV 03

VENDOR DESCRIPTION

Smiths Detection is a commercial partner for ADA Technologies, which has developed auto-networking Micro-environmental Sensor Pods (MSP). The MSPs are robust, lightweight, low-power, expendable and capable of measuring multiple parameters: Wind speed and direction, compass orientation, pressure, air temperature, radiant temperature, humidity, rainfall, and location (via GPS). Each unit is extremely compact and weighs less than 1 lb with batteries. The MSP may be deployed to create a network that covers an entire battlefield. Data from the pods (including GPS location) is transmitted to remote handheld stations via a radio modem, providing a snapshot of environmental conditions in the area of interest. For widely distributed networks, the radio modems in individual MSPs also function as relays to extend the network's range. The networking tasks are seamless to the operator, who merely needs to turn on the unit and place it in the area to be monitored.



Product Manager Robotic & Unmanned Sensors
Telephone: (732) 427-5827 / DSN 987
Fax: (732) 427-5072 / DSN 987
e-mail: SFAE-IEWS-NV-RUS@iews.monmouth.army.mil

Business Category: Large Business

UGS

Power Source	
Sensors	4 COTS AA lithium batteries 7 days @ 96 activations/day @ -40°C 10 days @ 96 activations/day @ +20°C
Monitor	Standard COTS PC running Windows
Repeater	4 COTS AA lithium batteries 7 days @ 96 activations/day @ -40°C 10 days @ 96 activations/day @ +20°C

Environmental			
Currently undergoing testing, targets are as follows:			
High Temp	+60°C	Low Temp	-40°C
Altitude	15000 ft (Operating)		40000 ft (Transit)
Humidity	100% relative humidity per MIL-STD-810E		
Shock/Vibe	Random vibration, drop test & loose cargo test/MIL-STD-810E		
EMI/EMC	Complies w/MIL-STD-461A, Level CE06, RE02, RE02.1, RS03		

Sensor	Description	Detection	Size/ Weight	Features
Meteorological Sensor Suite with Integral GPS and Communications	• Wind speed • Wind direction • GPS location • Barometric pressure • Relative Humidity • Rainfall rate/accumulation • Air temperature • 2-axis of tilt • Compass orientation Communications uses 900 MHz spread spectrum radio at 4800 baud.	1) Range 0-35m/s, ±0.2 m/s or 5% 2) Range 0-360°, ± 5° 3) Location <10m 4) Range 600-1100 hPa, ± 0.65 hPa 5) Range 0-100 percent, ±2 percent 6) Range 0 to 12" per hour, ±10% 7) Range -30°C to +55°C ±0.3°C 8) Range ± 30°, ±5 percent 9) ±2° Communications: 10 mile line-of-sight	Unit w/ batteries: 15.9 oz Diameter: 15.5 cm Height: 11 cm	■ Auto-networking operation ■ Every station is a relay ■ Low weight (1 lb) permits soldiers to carry and deploy systems by hand ■ Extremely robust with no moving parts ■ Transmits when interrogated by remote handheld terminals

Device	Description	Message Type	Size/Weight	Features
Monitor	Any PC running ADA communications software	Binary communication with CRC	COTS laptop	■ 900 MHz spread spectrum, frequency hopping, 10 mile LOS communications
Repeater	All MSPs function as repeaters		MSP < 1 lb	