

BMETS Battlefield METeorological System

Working to become a dependable partner of choice

BAE Systems Insyte's joint command & information systems solutions give decision makers the information to make mission critical decisions before opponents can react, minimising risk to our forces and creating greater operational effect.

Battlefield Meteorological System (BMETS) gathers and processes meteorological information before disseminating it to military command & control (C2) systems.

The highly mobile, passive, all weather, day/night upper air measurement system operates up to altitudes of 20 km (60,000 feet) above the Met Datum Plane (MDP).



BMETS is rapidly deployed

Measurements are made by tracking an ascending commercial radiosonde using a passive radio direction finding (RDF) system. The Met data is downlinked to and processed at a mobile ground station to produce computer formatted Met messages that are rapidly transmitted over a communications network to the user.

Benefits

- Passive, self contained, upper air wind finding
- Lightweight, highly mobile, all terrain vehicles
- All weather, day and night capability
- Capable of operating in most regions of the world
- High mean time between failures (MTBF) built-in test and simple maintenance
- Four man crew for 24 hour operation
- Into/out of action in less than 15 minutes

- Air transportable
- Produces Met messages in computer readable formats
- STANAG compliant (NATO)
- Automatic interface to artillery C2 systems
- Self contained low power usage (vehicle batteries or generator)
- Utilises a single FFR 28 V supply
- Capable of using more than one type of inexpensive commercial radiosonde
- Includes ground meteorological instrumentation and balloon inflation and launching device (BILD)
- On-board training mode
- Qualified for EMC requirements
- Assessed against Safety Def Stan 00-56 issue 2
- Spare capacity (software and hardware) for GPS and other upgrades.



Atmospheric measurements

- Wind speed and direction to an altitude of 20 km within the range 0-120 m/s
- Temperature from -80 °C to +52 °C
- Pressure throughout the ascent from 1060 hPa to 5 hPa
- Relative humidity throughout the ascent over the range 20% to 95%
- Cloud base level estimation
- Virtual temperature, ballistic temperature and ballistic density are also calculated.

Meteorological accuracies

The accuracy of the outputs from the Meteorological System are as follows.

Wind vector

The standard deviation (one sd) of the mean wind vector, measured over height zone intervals of the Standard Computer Meteorological Message, is within 1.5 m/s at all altitudes when the tracking angle is greater than 15°. When the tracking angle is less than 15° and greater than 10° the standard deviation will not exceed 2 m/s. BMETS continues tracking below 10° and reasonable data may be obtained down to 7°.

Temperature

The standard deviation of the temperature measured over height zone intervals of the Standard Computer Meteorological Message, does not exceed 0.2 °C.

Pressure

The standard deviation of the pressure measured over height zone intervals of the Standard Computer Meteorological Message, does not exceed 0.5 hPa.



BMETS includes ground meteorological instrumentation and balloon inflation and launching device (BILD)

Relative humidity

The standard deviation of the relative humidity measured over height zone intervals of the Standard Computer Meteorological Message, does not exceed 5% in the range 20% to 95% at temperatures greater than -40 °C.

Virtual temperature

Virtual temperature is calculated with an accuracy consistent with the requirements for temperature, relative humidity and pressure.

Ballistic density

Ballistic density is calculated with an accuracy consistent with that for virtual temperature.

Cloud base

Cloud base altitude is estimated to an accuracy of ± 50 m for altitudes up to 10 km above the MDP.

FOR MORE INFORMATION CONTACT:

BAE Systems Integrated System Technologies Limited
Victory Point
Lyon Way, Frimley, Camberley
Surrey, GU16 7EX, United Kingdom
Telephone +44 (0) 1276 603000
Fax +44 (0) 1276 603001
email insyte@baesystems.com
www.baesystems.com/insyte

Copyright © BAE Systems 2010. All rights reserved.

This publication is issued to provide outline information only which (unless agreed by BAE Systems in writing) may not be used, applied or reproduced for any purpose, or form part of any order or contract or be regarded as a representation relating to the products or services concerned. BAE Systems reserves the right to alter without notice the specification, design, price or conditions of supply of any product or service.

04.10.Insyte.BC049106.01.v01