**Requirement Specification**

**Mobile Automatic Weather Station (MAWS)**

1. **Requirements**

**1.1. Description of the requirement**

The document states the requirements for a Mobile Automatic Weather Station (MAWS) to be used by the Royal Danish Air Force (RDAF).

The Mobile Automatic Weather Station (MAWS) shall be in use for daily routine meteorological measurements and/or for expeditionary purposes.

**1.2. Description and definitions**

 Processing Subsystem

Tripod with GPS antenna and

Telemetry Antenna

The requirement specification, cf. section 1.4, describes all the requirements for the acquisition and consists of six columns with the following information:

|  |  |
| --- | --- |
| "#" | ID number |
| "Requirement" | Requirement description |
| "Classification" | The classification of the requirement as further described in section 1.3 |
| "DALO remarks" | Further information regarding the requirement |
| "Requirement compliance" | The tenderer's indication of compliance (YES or NO) |
| "Tender description" | Requirements regarding the tenderer's compliance description  |

**1.3. Classification**

All requirements are mandatory requirements (SHALL) and shall be fulfilled by the tenderer. If just one of the mandatory requirements is not fulfilled the tenderer's tender will not be taken into further consideration.

**1.4. Requirement and response sheet**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | **Requirement** | **Classification** | **DALO remarks** | **To be filled out be the tenderer** |
| **Requirement compliance****(tick a box)** | **Tenderer's description** |
| **YES** | **NO** |
| **1** |  The vendor SHALL supply One Mobile Automatic Weather Station (MAWS) | SHALL |  |  |  |  |
| **2** | The MAWS SHALL be a field-deployable mobile compact weather station | SHALL |  |  |  |  |
| **3** | It SHALL be possible to set-up the MAWS within 45 min | SHALL |  |  |  |  |
| **4** | The MAWS SHALL be able to function within the following environmental conditions:* -40 to + 50°C
* 5 – 100%RH
* 0 - 30 m/s
 | SHALL |  |  |  |  |
| **5** | The MAWS SHALL be based upon a steady tripod design | SHALL |  |  |  |  |
| **6** | It SHALL be possible to secure the tripod to the ground with ground spears | SHALL |  |  |  |  |
| **7** | The color of the MAWS tripod, sensors etc. SHALL be in dark (military) green | SHALL |  |  |  |  |
| **8** | The MAWS SHALL be delivered with all the necessary power- and signal cables | SHALL |  |  |  |  |
| **9** | It SHALL at the tripod be possible to mount at least the wind sensor, temperature sensor, humidity sensor, solar panel, hand held terminal, antenna etc. | SHALL |  |  |  |  |
| **10** | With the MAWS it SHALL be possible to measure the following meteorological parameters:* Wind direction
* Wind speed
* Air temperature
* Humidity
* Atmospheric pressure
* Rain/precipitation
* Cloud height and coverage
* Visibility and present weather
 | SHALL |  |  |  |  |
| **11** | The accuracy of the measured parameters SHALL be:* Wind direction (0 to 360° – with accuracy <±4°)
* Wind speed (1 to 55 m/s with accuracy ±0,5 m/s (<10 m/s) and < 3 % (>=10 m/s))
* Air temperature (-35 °C to +55 °C with accuracy <±0,5 °C)
* Humidity (5 to 100 % with accuracy ±3 %)
* Atmospheric pressure (700 to 1050 hPa with accuracy ±0,5 hPa)
* Rain/precipitation (with accuracy <±10 %)
* Cloud height and coverage (0 to 25.000 ft with accuracy ±3% in 50 ft resolution and up to at least 4 layers)
* Visibility (10 – 20.000 m with accuracy ±15 %)
* Present weather (with accuracy <0,1 mm/h)
 | SHALL |  |  |  |  |
| **12** | The Present weather sensor SHALL be able to identify:* Drizzle, Rain, Snow, Rain and snow, Ice pellets, Freezing rain, Freezing drizzle, Fog, Mist, Haze
 | SHALL |  |  |  |  |
| **13** | It SHALL be possible to adjust the wind sensor mast from 1,8 m to 3,5 m | SHALL |  |  |  |  |
| **14** | The MAWS SHALL be powered by Mains power 100 – 240 VAC, 50 – 60 Hz | SHALL |  |  |  |  |
| **15** | The MAWS SHALL have a backup battery (with build-in charger) and a solar panel in order to operate without mains power for at least 24 hours | SHALL |  |  |  |  |
| **16** | The MAWS system SHALL be delivered with light weight Transport cases | SHALL |  |  |  |  |
| **17** | The MAWS MTBF SHALL be better than 12.000 h | SHALL |  |  |  |  |
| **18** | It SHALL be possible to remove, replace and set up sensors in a plug and play way | SHALL |  |  |  |  |
| **19** | The MAWS SHALL be delivered with at least 2 hand held terminals in order to set up the MAWS | SHALL |  |  |  |  |
| **20** | The MAWS SHALL be delivered with a workstation (laptop PC) | SHALL |  |  |  |  |
| **21** | The workstation SHALL be able to handle the data from the sensors and display these in a numerical and graphical way | SHALL |  |  |  |  |
| **22** | The workstation SHALL be able to receive data from the MAWS by wire (distance > 50m) and via a radio modem connection | SHALL |  |  |  |  |
| **23** | The workstation SHALL be able to automatically code and present METAR/SPECI aviation weather reports or when initiated by an operator | SHALL |  |  |  |  |
| **24** | The MAWS SHALL be delivered with all necessary software licenses and all hardware and software shall support use of the Danish or English character set | SHALL |  |  |  |  |
| **25** | **Optional 1**It SHALL be possible to transfer the METAR/SPECI messages to remote locations via an internet connection by e-mail or FTP or etc. | SHALL |  |  |  |  |
| **26** | **Optional 2**It SHALL be possible to set up the workstation in order to make it possible to present the MAWS workstation presentation at a remote location via an internet connection  | SHALL |  |  |  |  |