

# DigiCORA III MW21 Sounding System



## Sounding equipment for the new millennium

The new radiosounding system, the DigiCORA III from Vaisala offers a simplified user interface and vastly improved system management, while employing the familiar terms and functions of previous models of the DigiCORA product family.

### ENHANCED USABILITY AND VERSATILE CONNECTIONS

The DigiCORA III (MW21) Sounding System introduces a new era of upper air observations. Offering a new level of usability, the system's core is a workstation computer which functions as the processing platform for the DigiCORA III software. The DigiCORA III is easy to set up, use and maintain. While it contains all the components necessary for a basic off-the-box sounding system, it is easily configurable for the most demanding requirements.

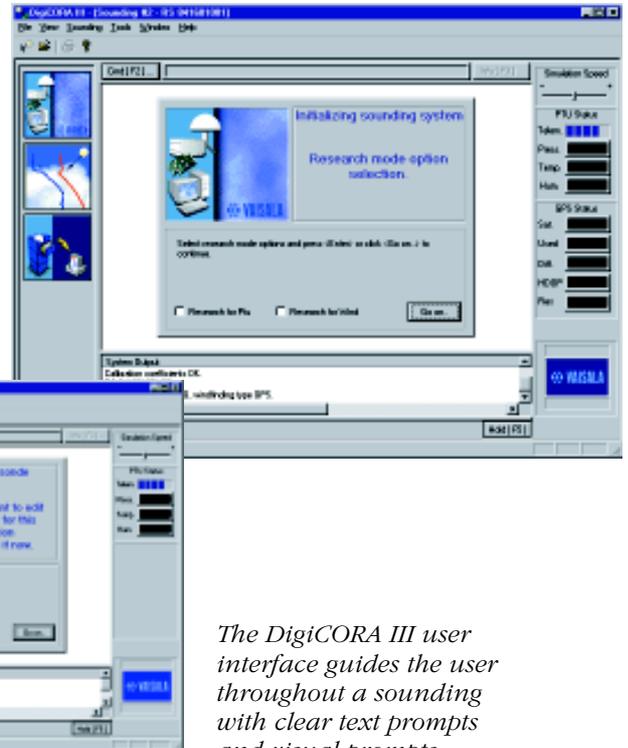
Beside improved usability, the DigiCORA III offers a wide range of connectivity options. Furthermore, the modular design means an easy upgrade path from earlier DigiCORA generations.

### MAIN SYSTEM COMPONENTS

The sounding system comprises two main components – a sounding workstation which runs the DigiCORA III software and stores sounding data, and a sounding processing subsystem which receives the data and preprocesses it.

The sounding processing subsystem can be any Vaisala system with ARCNET networking capabilities. While the preferred solution is the Sounding Processing Subsystem SPS220, all the MW systems (MW11, MW12 and MW15) can be used as such or upgraded for the sounding processing subsystem of DigiCORA III. The Vaisala Radiotheodolite RT20A is also suitable for this task.

The sounding processing subsystem gathers sounding data on air pressure, temperature, humidity (PTU) and wind. It then sends the data to the sounding workstation, where the DigiCORA III software collects, presents, analyses and stores it. The workstation can create and relay meteorological messages through serial connections, telephone services or various network protocols.



*The DigiCORA III user interface guides the user throughout a sounding with clear text prompts and visual prompts.*

### SIMPLIFIED USER INTERFACE

The user only needs to enter the surface observation values and the type of radiosonde to be used in the sounding. Once the radiosonde has been launched, the user does not need to operate the system in any way. An occasional check to ensure that the sounding is progressing as planned is all that is required.

### USER-FRIENDLY SOLUTION

The DigiCORA III user interface integrates sounding control, archiving and message creation, guiding the user through the various stages of preparing and launching the radiosonde. The user interface enhances system use also through configurable access level and translatable user prompts.

### **MULTIPLE SESSIONS**

The DigiCORA III utilizes the advanced multitasking properties of Windows NT, which allows to run many sounding sessions at the same time. Each session can access a common data source. Both live and simulated soundings are possible. With several sounding processing subsystems connected to a workstation, multiple simultaneous live soundings can be operated from that workstation.

### **EFFICIENT DATA MANAGEMENT**

The DigiCORA III provides an extensive collection of data from each sounding. The received data can be saved and stored for later analysis in a database which uses the Microsoft Access format. Standard Microsoft Office 97 tools (or newer) can be used to query the database.

Data and message creation and relaying are based on DigiCORA III's integration with Windows NT. The software has a number of predefined message formats, and customers can edit these messages with the message editor. Messages can be triggered manually or automatically at specified stages, during and

### **POWERFUL NETWORKING**

The meteorological messages are relayed forward using Windows NT's networking capabilities, including serial connection, dial-up networking and various LAN protocols.

DigiCORA III-based stations can be networked to a scalable, automatic data and meteorological message relaying infrastructure, useful for local, national and international needs alike.

### **SOUNDING PROCESSING SUBSYSTEM (SPS220)**

The Sounding Processing Subsystem (SPS220) is a separate unit with the PTU processor UPP210A and wind processing units: a GPS Processor MWG203 and/or VLF-Navaid Processor MWV201. The SPS220 collects the information for the PTU and wind calculations via a radio receiver and local antennas. The collected and processed data is then sent to the DigiCORA III workstation for analysis and storage.

Several SPS220 subsystems can be connected to a one workstation, with each SPS220 housing two wind processing cards.

### **RADIOSONDE COMPATIBILITY**

The DigiCORA III is compatible with the RS80 and RS90 family of radiosondes, operating at the frequency of 400 MHz or 1680 MHz. The standard radiosonde measures pressure, temperature and humidity and wind. Special sensors can be interfaced for radioactivity and ozone measurement.

### **INCREASED CUSTOMER VALUE**

With a focus on the customers' views, the DigiCORA III is an open system, based on industry standards. The system architecture provides many benefits for the customer, in terms of both cost and maintainability. The user interface offers the simplest possible operation, which lowers operator training requirements. However, the sounding software provides new functions and options that reach far into the future of upper air observations. This makes the DigiCORA III the perfect long-term solution in the DigiCORA family of sounding systems.

A service contract providing software maintenance (level 1) is always included, and system maintenance contracts can be extended to cover a wider range of services (level 2 and 3).



*A basic DigiCORA III system configuration includes a workstation computer running the DigiCORA III software, an SPS220 Sounding Processing Subsystem, antennas, and a printer.*

# Technical Information

## HARDWARE REQUIREMENTS

Sounding Workstation Computer	Pentium II 400 MHz or better 128 MB RAM 50 MB Hard Disk space for installation
Sounding data	binary
GPS	approx. 3-4 MB for each archived sounding
Loran-C	approx. 2-3 MB for each archived sounding
Radiotheodolite	approx. 2 MB for each archived sounding
PTU	approx. 2 MB for each archived sounding
Sounding data	SQL Typically 3-4 times the binary data file size, depending on the windfinding mode
SVGA Monitor	(800*600 or higher, 1024*768 preferred)
Accessories	MPA201 ARCNET adapter card Printer (optional)

## SOUNDING PROCESSING SUBSYSTEM

PTU Processor	UPP210A
GPS Processor	MWG203 or
VLF- Navaid Processor	MWV201

## ANTENNAS

UHF Antenna System (400 MHz)	RB21
Local GPS antenna	GA20 or
Local VLF antenna	CA21

## SOFTWARE REQUIREMENTS

Workstation Computer	Microsoft Windows NT 4.0 Workstation or Server Service Pack 5 for Windows NT DigiCORA III Sounding Software 1.01
Sounding Subsystem	Vaisala embedded software, version label 8.302 or newer



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