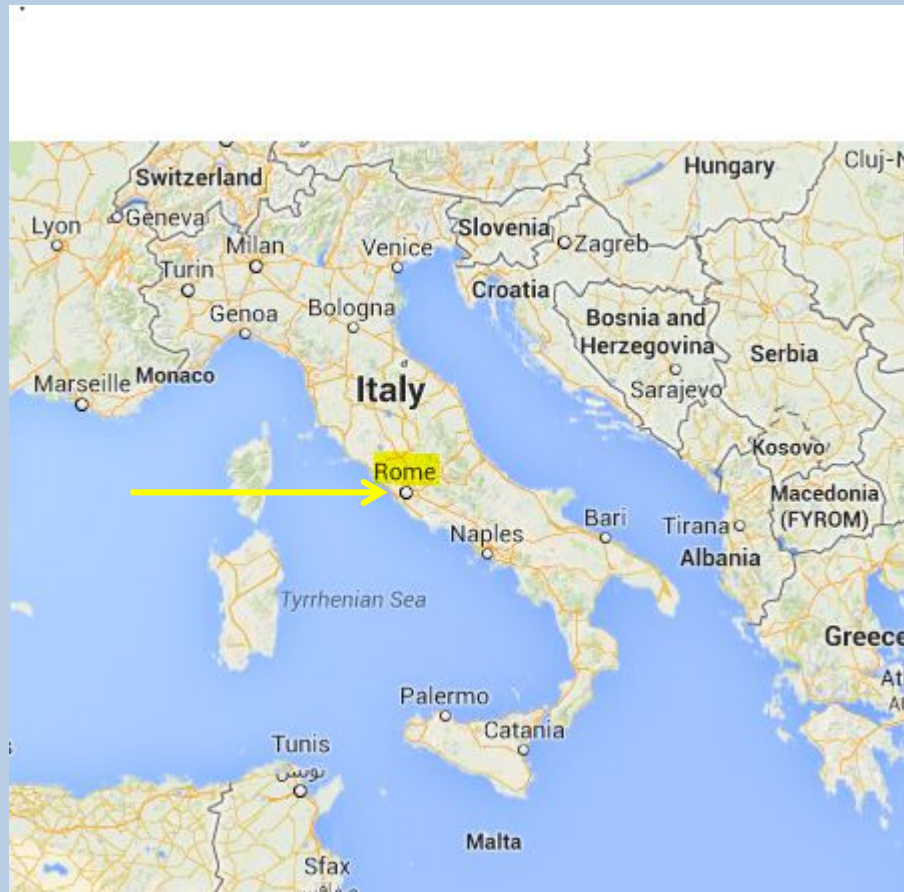


Synoptic Soundings in Italy and migration to RS41 radiosonde



Quality & Value Through Innovation in Soundings

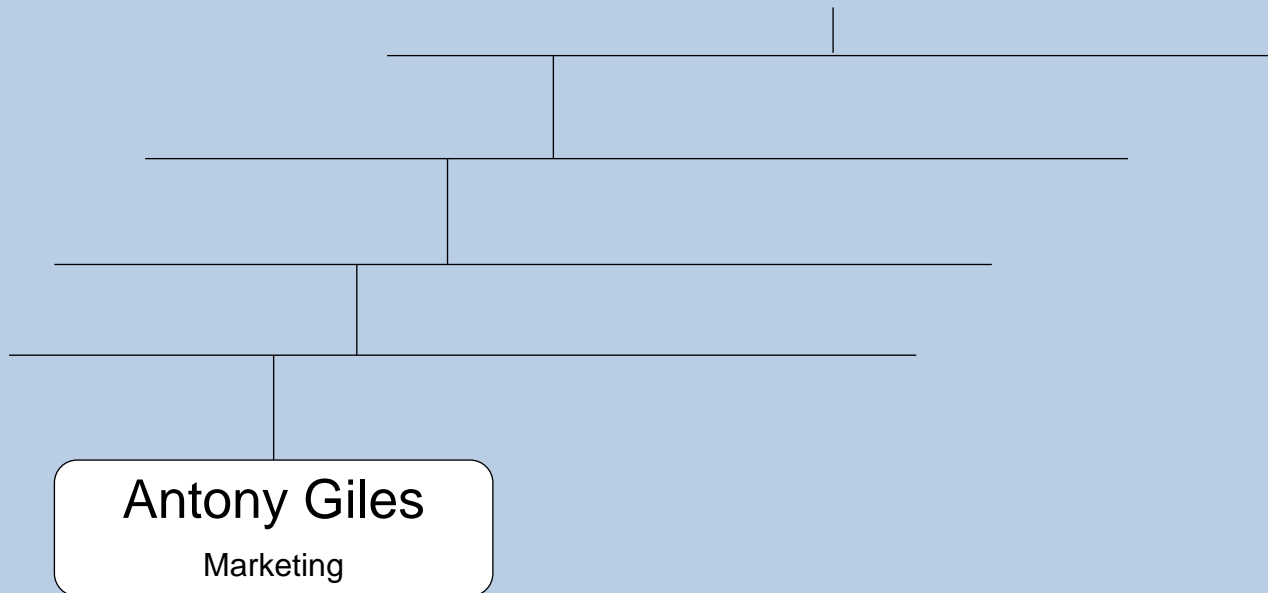
Eurelettronica ICAS srl



Eurelettronica

Maria Rita Leccese

Managing Director



Antony Giles

Marketing

Key Products

VAISALA
AUTHORIZED DISTRIBUTOR



TOTEX

ATTEX

Scintec 

AEROSTAR
INTERNATIONAL INC.



Atmospheric Systems Corporation
Setting the Standard in Sodar



Who is making Radio Soundings in ITALY?

| | | |
|---------------------------------|---|-------------------------|
| Daily Synoptic Soundings | Italian Air Force | Milano Linate |
| | | Udine Campoformido |
| | | Pratica di Mare |
| | | Brindis |
| | | Trapani Birgi |
| | | Sardegna Decimomannu |
| | ARPA ER (Autosonde) | San Pietro Capofiume |
| | ARPA Piemonte (Autosonde) | Levaldigi |
| Other | CNR IMAA (Autosonde and manual launches) | Tito Scalo Potenza |
| | CNR | Lampedusa |
| | Italian Air Force | Re.S.M.A.Vigna di Valle |
| | CETEMPS | L'Aquila |
| | ENEA | Antartic |

What is Gen4?

- Considerable effort on improving the consistency of the observations and the usability of the products 2012-



Gen
4

Gen
3

- Active de-icing, reconditioning, silicon pressure sensor
- GPS, digital telemetry
- Desktop PC, automatization

1990-2010



Gen
2

- Aluminized sensor boom, electronic switch, HUMICAP
- Navaid wind finding
- Computer-based systems

1970-1990



Gen
1

- Bi-metal temperature sensor, hair hygistor, mechanical switch
- Radio or optical theodolite

1936-1970



Development background

- User centric design methodologies
 - Requirements
 - Field observations
 - Usability testing and feedback
- Extensive testing
 - Laboratory tests
 - Over 1000 test soundings during development



- 4 application areas
- 5 countries
- 17 user groups
- More than 50 people



Vaisala Radiosonde RS41-SG

Platinum Resistive Temperature Sensor

features very fast response time with small solar radiation error.

Humidity Sensor element is accurate throughout the whole flight.

Light Weight RS41 weighs 109 gr. With respect to RS92 saving in amount of helium gas is approx 20%.

Pressure derived from **GPS**.

LED Status Lights clearly indicate when the RS41 is ready to launch.

Ozone interface connector, also for other sensors with X-DATA protocol

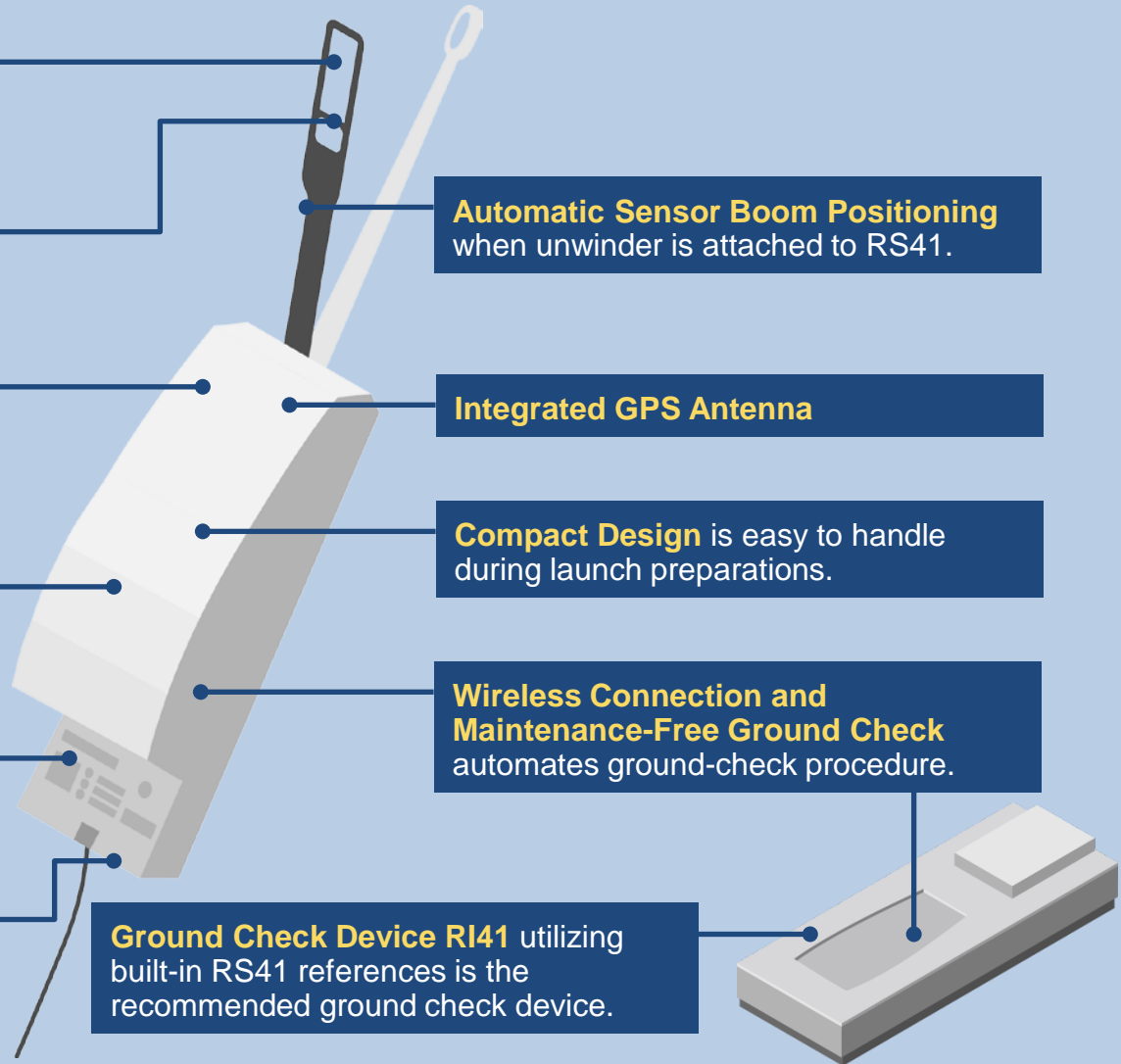
Automatic Sensor Boom Positioning when unwinder is attached to RS41.

Integrated GPS Antenna

Compact Design is easy to handle during launch preparations.

Wireless Connection and Maintenance-Free Ground Check automates ground-check procedure.

Ground Check Device RI41 utilizing built-in RS41 references is the recommended ground check device.



RS41-SG Vaisala Radiosonde

TEMPERATURE MEASUREMENT

Platinum technology temperature sensor

- Pt-reference class features
 - Stability and linearity
 - No need for ground correction
- Low measurement noise
- Protection from evaporating cooling effects
- Robust



RS41-SG Vaisala Radiosonde

HUMIDITY MEASUREMENT

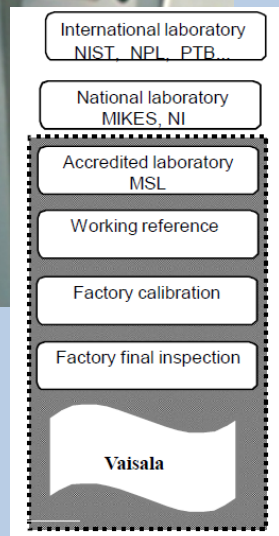
Humidity sensor with integrated features

- Humicap® polymer sensor
- Active de-icing method
- On-chip temperature measurement
 - Precision
 - No solar radiation effect
- Physical 0 %RH check



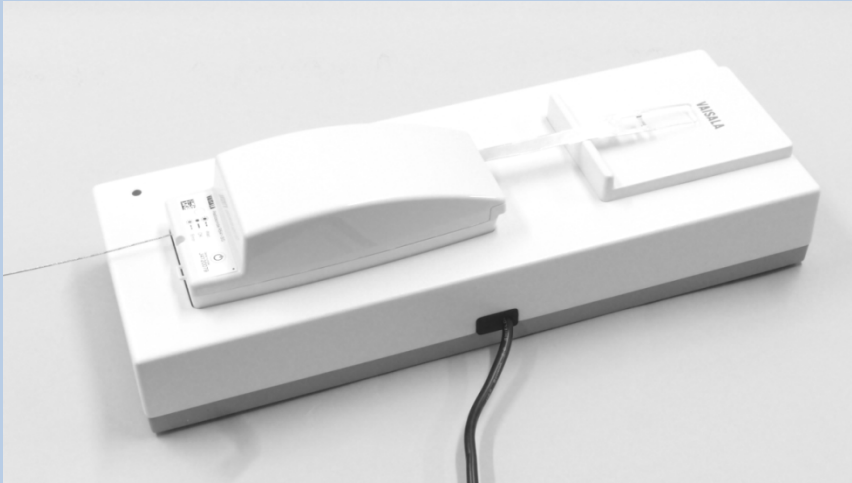
Consistency of observations

- Manufacturing
 - Clean room facilities
 - Automation of production
 - Quality Assurance
- SI-traceable calibration
 - Confidence in data accuracy throughout the measurement range
- Long-term reliability of supply



Automatic sensor preparation

contributing to the data quality



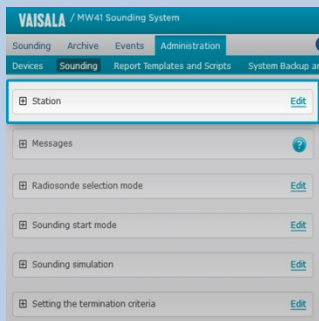
No cable is needed for start-up of RS41 radiosonde. Connection to ground check is **wireless**.

- Automatic sensor preparation contributing to the data quality
 - Temperature sensor check
 - Humidity sensor reconditioning
 - Humidity sensor 0% RH check and correction without use of drying dessiccant material
- Transmitter control
 - Frequency setting
 - Transmitter cut-off setting

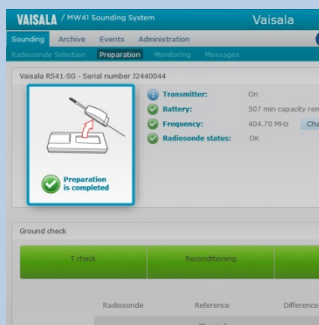
Vaisala MW41 Sounding Platform

Efficient Administration gives you complete control of sounding operation, even remotely. System and station parameters can be saved and restored with only a few clicks, saving you time.

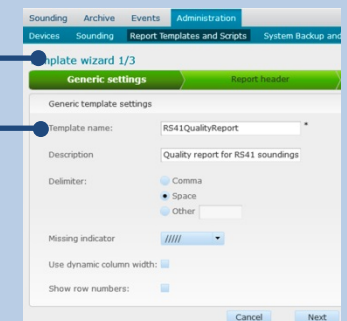
Intuitive Web-Based User Interface makes operating and setting up a sounding station quick and easy.



Diagnostics with clear status indicators and animations give you quick visibility to RS41 status.



Python Scripting to create complex data outputs and perform any calculations.



Flexible Report Templates for customized reports.

Increased Flexibility through advanced network options. Control transfer and data sharing on public and private TCP/IP networks with a **Secure Web Connection**.

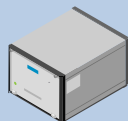


Vaisala RS41 Radiosonde and AUTOSONDE®

RS41 & AUTOSONDE

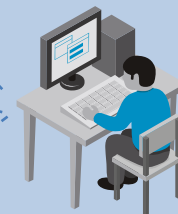
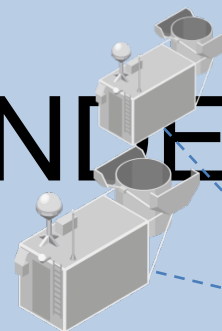
DigiCORA® MW41 Sounding System

- MW41 Sounding System Software
- SPS311G
- RB31R
- GA31R



Radiosonde

- RS41-SG
- RS41-SGP



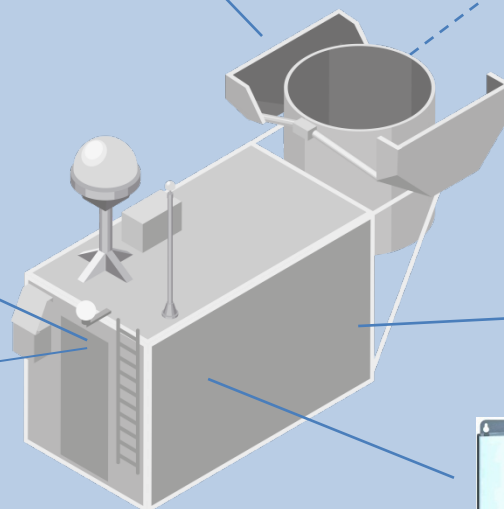
Vaisala Observation Network Manager Software NM10



Surface Observations



AUTOSONDE Control Software



Radiosonde Preparation in Autosonde

| | RS92-SGPD + GC25 | RS41-SG + RI41 |
|--|---|--|
| Preparation | Ground check at loading, reconditioning at launch | Ground check and reconditioning at launch |
| Loading time | 4h+ (24 pcs) | ~1h (24 pcs) |
| Usability & Maintenance | Drying Dessiccants Temperature reference Cable connection | Fully automated (0 click) Maintenance Free Wireless connection |

CONCLUSIONS

Summary

1

Vaisala has > 80 years experience and application knowledge on sounding equipment and radiosonde.

2

RS41 Radiosonde, tested also by UK Met Office, has proven to excel RS92 performances.

3

RS41 is light weight and easy to use with automatic sensor preparation

4

Vaisala provides reliable and easy-to-use systems for years to come: Low total life cycle cost and long product life-cycle support

*Thank You for your
attention*

