Sparv Embedded

Miniature systems for atmospheric measurements

Sparv Embedded is an engineering company that offers the following measuring capabilities to advance the state of atmospheric research. We both develop and sell off-the-shelf products and do custom development.

"Windsond" radiosonde (more info)
The smallest radiosonde on the market, from 8 grams. PBL sounding with 30 liters of helium. Portable and easy to use. Option for fast response T/RH. Option for 100 sondes on one radio frequency. (link)

TRL: 9 ("Actual system proven in operational environment")
A new version is in the testing phase.

Dropsonde (more info)
The lightweight radiosonde can be used as dropsonde. Drop from balloon or small UAV. Equipped with a parasol to adjust the descent speed.

TRL: 7 ("Technology demonstrated in relevant environment")
A basic version is being evaluated by a university research team.

Turbulence measurements (more info)
A dropsonde equipped with accelerometers to measure turbulence. The low weight and low fall speed make the sonde sense turbulence as it falls.

TRL: soon 7 ("System prototype demonstration in operational environment")
A basic version is being evaluated by a university research team.
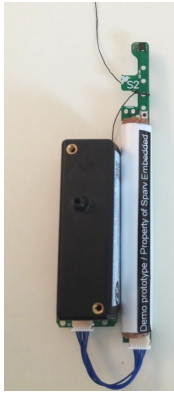
Air pollution measurements

Our new radiosonde version can be equipped with external sensors to measure air pollution with balloon soundings, for example various PM sensors as pictured. A novel nitrogen dioxide (NO_2) sensor has also been tested with the radiosonde (link).

The UAV sensor system (mentioned below) can also be equipped with sensors to measure air pollution.

TRL: 3 ("Experimental proof of concept")

"Sparvio" sensor system for UAVs (more info)

A modular system for data collection with logging, real-time telemetry and visualisation, supporting a range of sensors. Integrated to date: Winds, Particulates, Carbon Dioxide, Methane, Temperature, Humidity, Pressure and Ozone. It is designed to start immediate measurements without any further integration.

TRL: 9 ("Actual system proven in operational environment")
On the market since 2017.
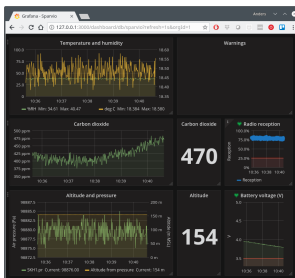
Sensor platform

Firmware libraries, protocol and computer software to connect and interface sensors and embedded systems. Automatically detects devices and features at runtime. Generic and extendable. Useful in research projects, in prototypes and in commercial products.

TRL: 4 ("Technology validated in lab")
Used in Sparvs products.

TRL is "Technology readiness level", as self-assessed by Sparv Embedded
en.wikipedia.org/wiki/Technology_readiness_level