

# IEA Wind Task 43 WRA Data Model – New features and industry adoption update



Amit Bohara<sup>1</sup>, Gibson Kersting<sup>2</sup>, Stephen Holleran<sup>3</sup>, Jason Fields<sup>4</sup>, Oriol Lacave<sup>5</sup>, Guillermo Tornero<sup>6</sup> and many more.  
 Altosphere<sup>1</sup>, RWE<sup>2</sup>, BrightWind<sup>3</sup>, RES<sup>4</sup>, Vortex<sup>5</sup>, OceanWinds<sup>6</sup>

# A data model powering efficient, automated energy yield assessments.

## THE WRA DATA MODEL

The Wind Resource Assessment (WRA) Data Model establishes a standard for digitally representing the configuration of met mast, lidar, sodar, floating lidar, buoy or solar measurement stations. It specifies parameters such as

- installation coordinates
- logger type and averaging period
- sensor height, type and mounting arrangement
- sensor calibrations and how these are programmed into the logger
- and how all these properties may have changed over time.

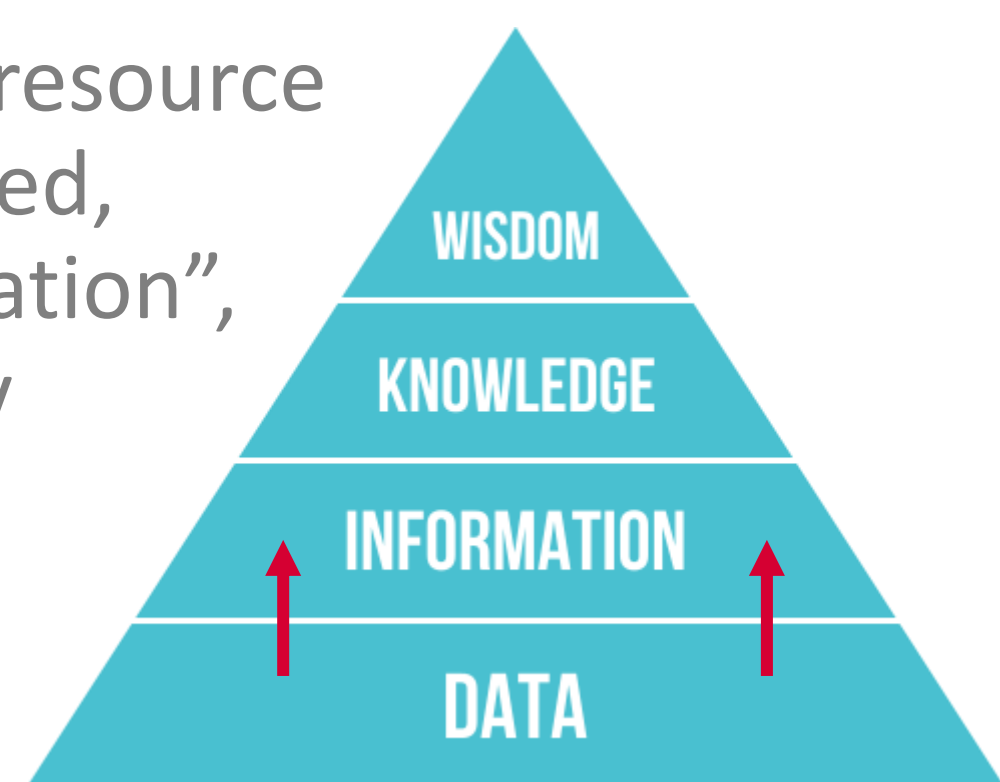
	PDF Format		JSON Format
Sensor Channel	1	2	
Type	Anemo.	Anemo.	{ "channel": "1", "type": "Anemo.", "OEM Model": "Thies 4.3351", "Serial": "9183000", "Height": 80.1, "Orientation": 315, "Logger Slope": 0.045, "Logger Offset": 0.25, "Calibration slope": 0.04573, "Calibration offset": 0.2419 }
OEM / Model	Thies 4.3351	Thies 4.3351	
Serial	9183000	9183001	
Height	80.1	80.2	
Orientation	315	315	
Logger Slope	0.045	0.045	
Logger Offset	0.25	0.25	
Calibration slope	0.04573	0.04568	
Calibration offset	0.2419	0.2487	

Requires manual data entry into analysis software

Ingested directly into analysis software

Sensor information in PDF forms (left) and JSON format (right)

It transforms wind resource "Data" into organised, structured "Information", powering efficiency and automation in energy yield assessments.



## INDUSTRY ADOPTION ACTIVITIES (that we know of)

- WRA Data Model specified in commercial contracts.
- Joint offshore industry letter of support.
- Multiple software providers are adopting as an I/O format.
- 20+ organisations contributing to development.
- Products & services created around the WRA Data Model.



## WHATS NEW IN v1.3.0-2024.03

- Now includes independent wave buoys.
- Includes modelled data e.g. VMM & Reanalysis.
- Other non-breaking enhancements, maintenance and bug fixes.

## USE CASES

- 144 lidars in the WRA Data Model format underwent comparative analysis of various shear and MCP methods. The standardised format allowed automated measurement height determination and method comparison automatically, thus facilitating the study. <https://windeurope.org/tech2023/programme/posters/PO052/>
- BrightHub ([www.brighthouse.io](http://www.brighthouse.io)) is a wind & solar resource data management platform powered by the WRA Data Model. It enables wind analysts to efficiently share the required data for a bankable EYA with 3<sup>rd</sup> party consultants who can quickly grasp the mast configuration and seamlessly integrate it into their analysis tool chain.

## DIGITAL CALIBRATION CERTIFICATE

There is also a digital calibration certificate data model which can capture the relevant data for a wind analyst.

Anemometer calibration certificate in pdf

## FIND OUT MORE

[https://github.com/IEA-Task-43/digital\\_wra\\_data\\_standard](https://github.com/IEA-Task-43/digital_wra_data_standard)

