

TECHNICAL NOTE: windPRO Meteo API

Access meteo data from windPRO using bridge API

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1. Introduction

With windPRO 4.0, EMD has implemented a new feature that lets windPRO users access meteo data from the user organization's internal data stores, using a bridge/adapter API. The API contract is defined by EMD for windPRO, while the API server is operated and hosted by the user organization.

Figure 1 shows an overview.

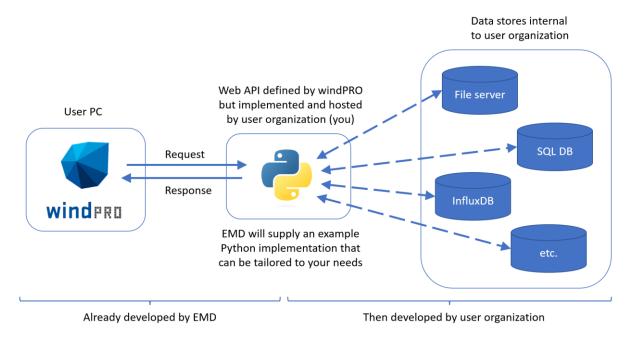


Figure 1 – Overview of the Meteo API architecture

Through the windPRO knowledgebase, EMD supplies an example Python implementation of the Meteo API that you can tailor to your needs. If you prefer to use another technology besides Python, the API is following the OpenAPI specification allowing you to implement the API by hand. The Meteo API is relatively simple in its current version 1.0 with only three endpoints.

Besides windPRO using the API, the user organization could also choose to make the API accessible from other clients, such as data science applications.

windPRO supports receiving different data formats through the Meteo API feature:

- Plaintext timeseries data (same as the windPRO Meteo "GO time series" function)
- windPRO meteo export (same as the windPRO Meteo "Import" function)
- windPRO .mesores (see documentation at the <u>windPRO knowledgebase</u> <u>here</u>)

Figure 2 shows a screenshot of adding a Meteo object and accessing the Meteo API feature.

🕑 Meteorological Data (Default Meteo data description (6))		
Position Layers Guide Purpose Data Graphics Statistics Shear Report Description		
Meteo object - getting started	Qk	
INTRO: The Meteo object is an advanced "data container" and data screening/analysis tool for meteorological data, specifically focused on wind speed and direction data for wind energy calculation purposes. A Meteo object shall only include data from one position (one measurement mast or one "model" point), preferably with data for more heights a.g.l. to utilize the strong features for wind profile analyses. Comparing data from more positions (masts) or substituting (patching) data for a specific mast are done in the Meteo analyser, which writes back the data to the relevant METEO objects.	<u>C</u> ancel Apply	Faulbach
GO time series Import logger data files or ASCII time series and setup import filter	Prev Next	Training and the second
GO statistics Get data from histogram or weibull data		Commercede
G0 web API Fetch merev dute through a web API		Pasberg
GO Online Go directly to load data placed on accessible server at EMD (see what is available)		Veimeden 🕁
Wizard Help me learn more about wind data and getting data loaded into METEO object		
Import Import a Meteo Data Export. Meteo Data can be exported by clicking 'Export' in the Data Setup.		Iburg

Figure 2 – How to access the Meteo API feature in windPRO

2. Security

Everything runs inside your own network, which also requires hosting your own web server.

windPRO authenticates against the API using HTTP BasicAuth. That means the API server should be hosted using HTTPS only, which requires a TLS certificate.

The API server can be programmed with fine-grained user roles and permissions, if relevant.

3. Versioning

The windPRO 4.0 supports version 1 of the windPRO Meteo API.

Future windPRO releases may add new features to the Meteo API, such as new metadata fields or server-side data filtering. If a new feature is compatible with the existing API version (e.g., a new optional metadata field), the API version will not be incremented. If the new feature is *not* backwards compatible, a new version of the Meteo API will be created. The user organization may choose to implement the new version if desired, but windPRO will remain backwards compatible with all versions of the Meteo API.