

Speedwell Weather Derivatives Ltd



SuperPack Data Subscription

The Speedwell SuperPack makes available to the user an unprecedented range of historical weather data and weather data feeds for a single annual fee.

	<h3>Historical Data</h3>	<ul style="list-style-type: none"> Global historical data (100+ countries) Synoptic data for 6,000+ stations Climate data for 2,000+ stations Weather variables including temperature, precipitation, snowfall, wind speed, sunshine, cloud cover, radiation,... Hourly & daily data available Cleaned & raw data Cleaned hourly data
	<h3>Ongoing Feeds</h3>	<ul style="list-style-type: none"> Global historical data (100+ countries) Synoptic data for 6,000+ stations Climate data for 2,000+ stations Real-time, preliminary, and final settlement as released by relevant National Met Services Hourly & daily data Cleaned & raw data
	<h3>Recalibrated Data</h3> <p>Optional Add-On</p>	<ul style="list-style-type: none"> Recalibrated data for 35+ locations Australia Europe United States Historical Recalibration, real-time web updates, monthly reports

Global Data Coverage



Antarctica	Ghana	Niger
Argentina	Gibraltar	Nigeria
Armenia	Greece	Norway
Australia	Greenland	Panama
Austria	Guatemala	Paraguay
Bahamas	Honduras	Peru
Barbados	Hong Kong	Philippines
Belarus	Hungary	Poland
Belgium	Iceland	Portugal
Bermuda	India	Romania
Bolivia	Indonesia	Russia
Bosnia	Ireland	Serbia
Botswana	Italy	Slovakia
Brazil	Jamaica	Slovenia
Bulgaria	Japan	S. Africa
Canada	Kazak.	Spain
Chile	Kenya	Sri Lanka
China	Korea S.	Sweden
Costa Rica	Latvia	Switz.
Croatia	Lebanon	Taiwan
Cyprus	Lithuania	Thailand
Czech R.	Lux.	Trinidad
Denmark	Malaysia	Turkey
Egypt	Maldives	UK
Estonia	Mali	Ukraine
Ethiopia	Malta	USA
Finland	Mexico	Uruguay
France	Morocco	Vietnam
Georgia	Netherland	Zambia
Germany	New Zeal.	

The SuperPack provides the following:

Any dataset from our extensive and growing archive of standard data sets

- Historical data and real-time feeds for hundred of locations
- Access to our extensive archive of cleaned Climate including Europe, USA, ... Australia data [daily / hourly]
- Access to our library of ultra-long historical data sets

Web-based user interface

- Ability to extract and analyze data
- Access to the Speedwell suite of data analysis and visualization tools including Data Viewer, Weather Index Cone, Monthly/Weekly value calculator, Statistics Extractor, Index Calculator, Actuals Vs. Climatology tracker, Analogue Years...
- Available to all corporate employees
- Accessible 24-hours per day

Speedwell Recalibrated data (optional add-on)

- Historical Recalibrated data
- Web-based live weather station monitor
- Monthly station reports



Some of the National Met Services (NMS) with whom Speedwell has arrangements for the provision of climate data

SuperPack Data Subscription

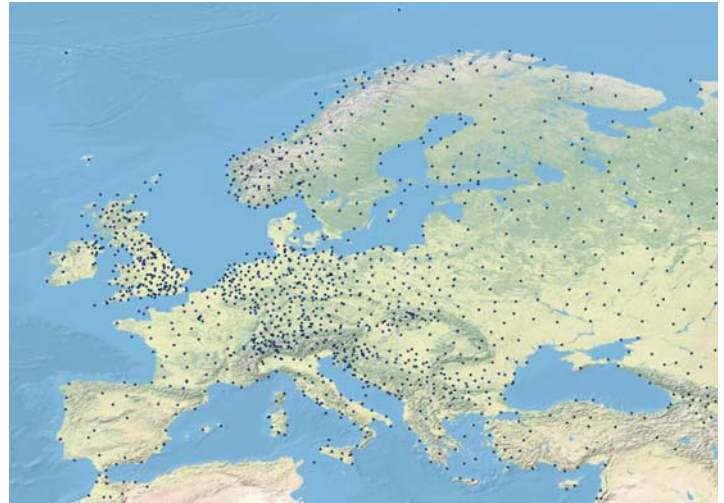


Data Availability

A detailed station inventory is provided with SuperPack. Availability of meteorological observations can be broken down by a number of criteria including temporal duration (hourly data, daily data), variable observed (temperature, precipitation,..), data quality (cleaned, raw, Recalibrated), length of history, type of observation (Climate, Synoptic, METAR), percentage of data available and global co-ordinates.

The SuperPack inventory:

- Station attribute information (station name, WMO #, National ID #, Speedwell ID, latitude, longitude, elevation)
- Data source by data type (i.e. historical climate / synoptic data, ongoing climate / synoptic data)
- Breakdown of statistics by variable
 - Begin date of raw data, begin date of cleaned data
 - Percentage raw data missing by period
 - Availability of Recalibrated data
- Indication of the temporal duration of the data (hourly, daily)



European Data Availability

The SuperPack is intended to be a “living product” that is constantly growing and being updated. As of November 1, 2010 the SuperPack list consists of circa 8,500 data sets. As additional datasets are sourced and decoded they will be added to the SuperPack and updates of the stationary inventory provided.

Important Questions

(1) How is the data delivered?

The Speedwell web site, interrogate the data and download daily data. **Data feeds and hourly data will be made available per request via FTP. The standard SuperPack offering will provide historical datasets and feeds via FTP in the standard Speedwell format. Additional delivery mechanisms and formats may be available at an additional cost.**

(2) What if a station I need isn't in the SuperPack?

This depends upon the nature of the data... Firstly, the SuperPack station inventory may not yet fully reflect our available archive. This is particularly the case for hourly data in the USA where many hundreds of additional sites are available but not yet listed. For other datasets that are accessible to us (eg Synoptic data) these can be provided on a reasonable-request-basis free-of-charge and will then become part of the SuperPack inventory. Datasets that require substantial processing or the payment of fees or royalties to NMS can be purchased as add-ons to the subscription.

(3) What if I need cleaned data? (for situations where the data is currently raw)

Subject to data quality and the availability of proxy stations, cleaned data will be provided on a reasonable-request-basis free-of-charge and will then become part of the SuperPack inventory. Datasets that require substantial processing can be purchased as add-ons to the subscription.

Web Tools

Subscribers to the SuperPack have unlimited access to a number of data tools available through, www.SpeedwellWeather.com.

Hourly Data Tables View hourly values of temperature in real-time or access historical hourly data by day	Speedwell Climatologies View Kernel-smoothed 10-year average values of temperature and rainfall for a range of sites
Conditional Probability Calculator Interrogate our extensive historical archive to find historical patterns: e.g. understand the chance of seeing a warm February after a cold January.	Index Calculator Calculate the historical values of any weather index.
Correlation Analysis Calculate daily, monthly correlations and auto-correlations.	Weather Statistics Extractor Extract weekly, or monthly statistics such as cumulative temperature, HDDs, CDDs.
Data Viewer Generate graphs of up to 50 years of historical weather data. Or graph the difference between two sites.	Analogue Years View the evolution of a weather index relative to other chosen historical periods to see possible out-turns
Weather Analytics The Speedwell weather analytics tool presents weather data summaries for retailers and energy companies.	Weather Data Feeds Definitive feeds of observed weather data available as hourly, daily or as weekly/monthly summaries.
Super Long Data Sets Access data sets going back to 1900 for correlation analysis.	Actuals Vs Climatology Tabular or graphical view of any weather variable relative to climate normals for any period.

Station ID	Station #	Station	Latitude	Longitude	Altitude	WMO	WSBAN	ICAO	COOP ID	State	Country
50029	19019	AACHEN	50.793	6.300	202	19901					Germany
51440	GER_108	Augsburg	48.433	10.933	461	13052	34193	EDMA			Germany
51443	GER_100	Bamberg	49.917	10.900	239	10675	34183				Germany
50840	19029	BERLIN DAKLEM	52.467	13.300	51	10381					Germany
50841	19090	BERLIN TIGEL	52.567	13.317	37	10380	35110				Germany
50803	16096	BERLIN TEMPELHOF	52.466	13.399	50	10384	35104	EDBB			Germany
50845	19064	BONN COLOGNE BONN	50.867	7.167	100	10513		EDCC			Germany
50850	19059	BREMEN	53.000	8.600	5	10024	35003	EDBW			Germany
50869	16901	DRESDEN FLOTZSCHE	51.130	13.780	222	10488		EDDC			Germany

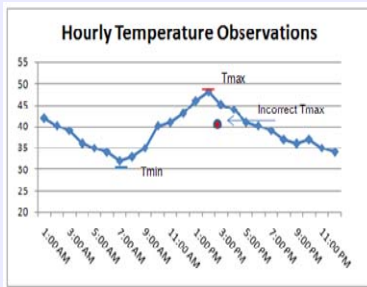
Speedwell Cleaned Data

SuperPack includes 100s of cleaned historical and real-time data sets

Cleaned data is data that has been processed to fill missing values and correct erroneous observations. The end result is a dataset that is ready to be use for analysis.

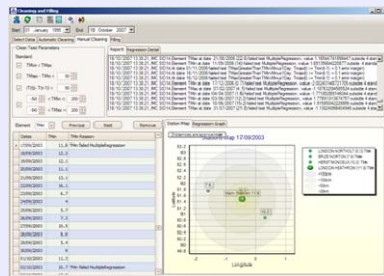
Speedwell's proprietary cleaning methodologies use a mixture of automated processing to flag possible errors followed by manual inspection. In relation to the cleaning of daily data*, tests that are performed include:

- How does the observation compare against climatology?
- How does the observation compare against consecutive observations?
- Is the observation meteorologically possible?
- How do the daily observations compare with hourly data?
- How does the observation compare against the forecast?
- How do observations compare against observations from surrounding stations? Observations are compared against the median of a basket of proxies



Observations that are missing or declared suspect undergo further testing and manual review. In the event that a value needs to be filled or corrected a series of estimation techniques are employed including:

- median and local regression using de-seasonalized data,
- daily estimates based upon hourly observations
- reconstructed data from other data types (eg Synoptic),
- ECMWF forecasted values,
- direct communication with the NWS,...
- Archived local media sources and private weather networks



Speedwell Recalibrated Data Sets

Recalibrated Data Sets are available as an optional add-on to SuperPack.

Speedwell Recalibrated Data Sets re-base historical data to current site location, conditions and instrumentation by adjusting for historical temperature discontinuities. This is critical to a complete understanding of the behavior of a weather reference site. Recalibration does not involve detrending



Historical Recalibration

- Cleaned time series
- Recalibrated time series
- Supporting documentation (station overview, proxy stations, statistical results, metadata, discontinuities, valuation impact)

On-going Recalibration

- Monthly station updates alerting to developing behavior or notified (eg via NWS) changes
- Client access to web-based real-time monitoring tool allowing analysis of current performance or recent discontinuities.

About Speedwell Weather Derivatives, SWD

Founded in 1999, SWD provides software, weather data, forecasts and consultancy to the energy and weather derivative markets. SWD is the provider of the Speedwell Weather System (SWS), the pre-eminent weather derivative pricing and risk management software.

Speedwell Weather Derivatives supplies historical and real-time weather data feeds for thousands of weather reference sites across the globe. SWD has direct data supply agreements with a wide range of national meteorological services and provides a single-point of contact for the provision of official weather data to the energy, agriculture and weather derivative markets.

Regulated by the UK Financial Services Authority, SWD helps companies looking to hedge against weather risk by quantifying such exposure, structuring an appropriate hedge and placing the risk within the weather market.

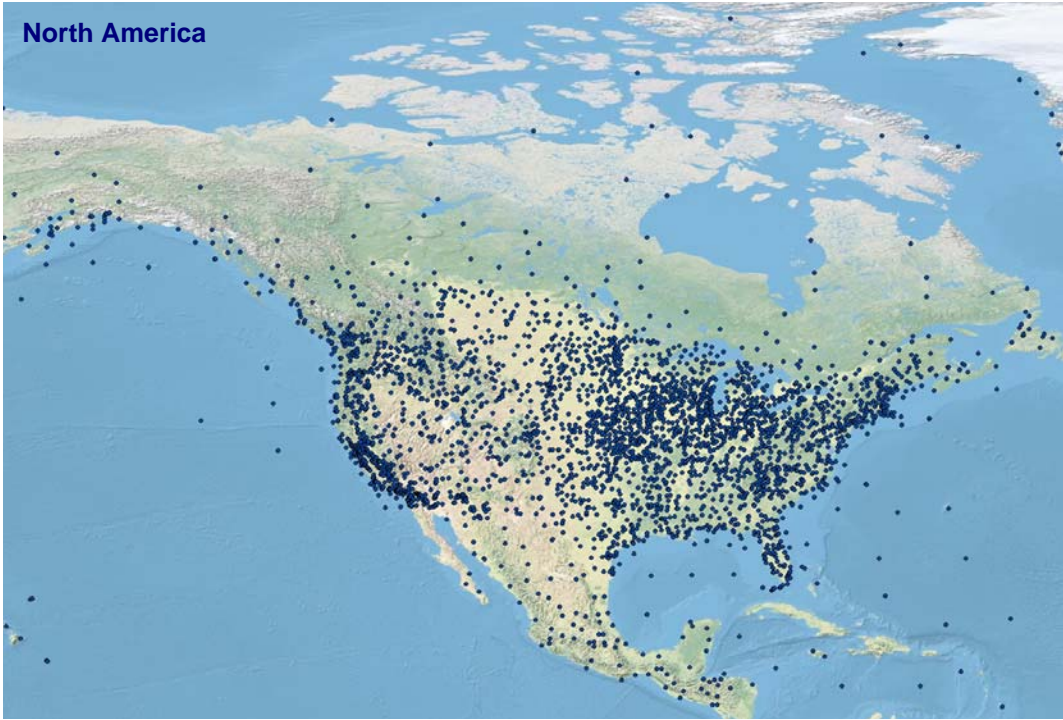
With offices in the United Kingdom and the USA, Speedwell Weather Derivatives have clients in insurance, banking and energy sectors in Europe, North America, Africa and the Asia Pacific region.

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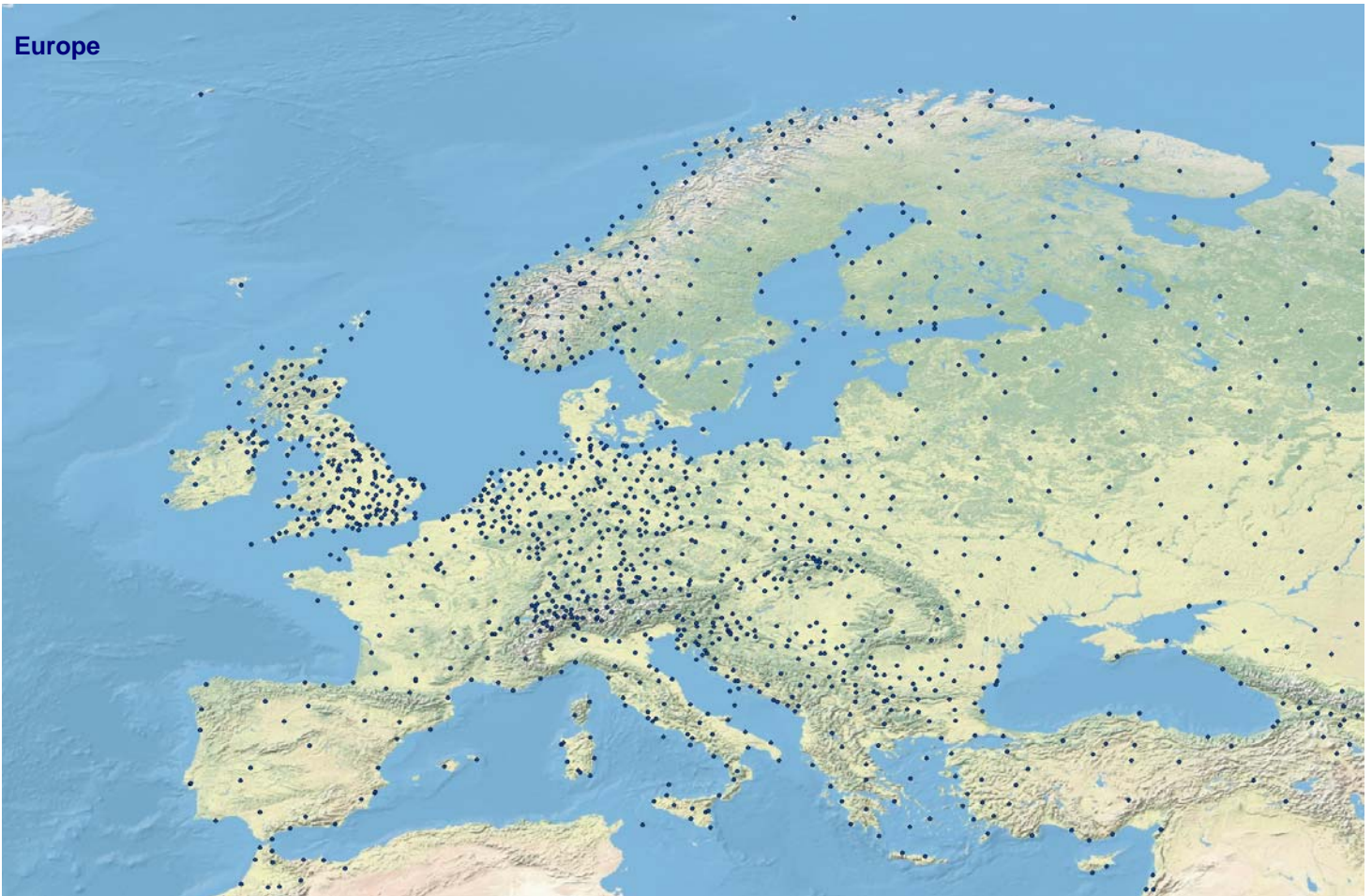
Data Availability

North America



- Full support for the 24 U.S. stations traded on the CME (*ATL, BWI, BOS, ORD, COS, CVG, DCA, DFW, DSM, DTW, IAH, JAX, MCI, LAS, LIT, CQT, MSP, LGA, PHL, PDX, RDU, SAC, SLC, TUS*)
- Cleaned daily temperature and precipitation for 750+ U.S. stations (both historical and on-going feeds)
- Full support for the six Canadian CME-traded stations (Calgary, Edmonton, Montreal, Toronto, Vancouver, and Winnipeg)
- Official data sourced from NOAA (U.S.) and Environment Canada
- Thousands of U.S. & Canadian locations
- Hundreds of hourly data sets including temperature, wind, rainfall, humidity

Europe



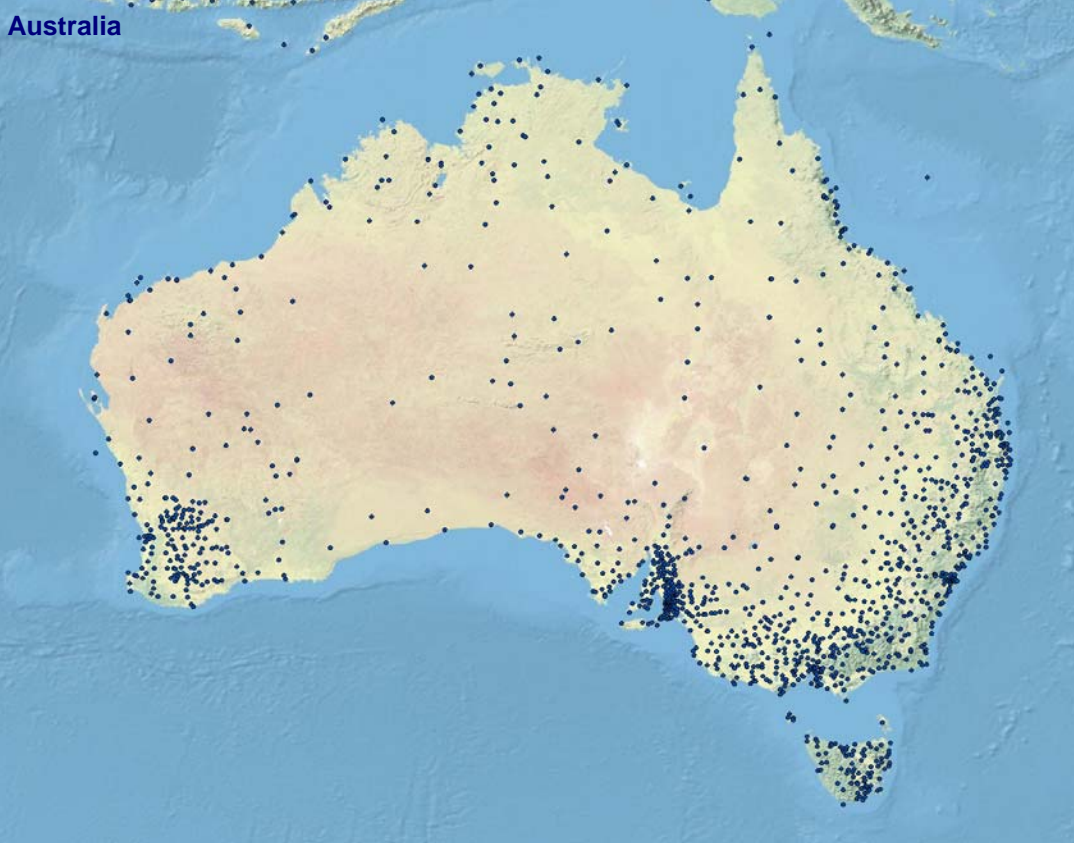
- 100's stations of historical daily CLIMATE data
- Significant archives of rainfall, wind, sunshine including hourly data
- Support for the 11 CME-traded weather derivative sites (Amsterdam, Barcelona, Berlin, Essen, London, Madrid, Oslo, Paris, Prague, Rome, and Stockholm)
- SuperLong datasets allow for extended analysis (many pre 1900)
- Significant archives of hourly data for temperature, rainfall, wind, sunshine...
- Ability to source additional hourly data and histories on a reasonable-request basis
- Russia: historical data may be limited

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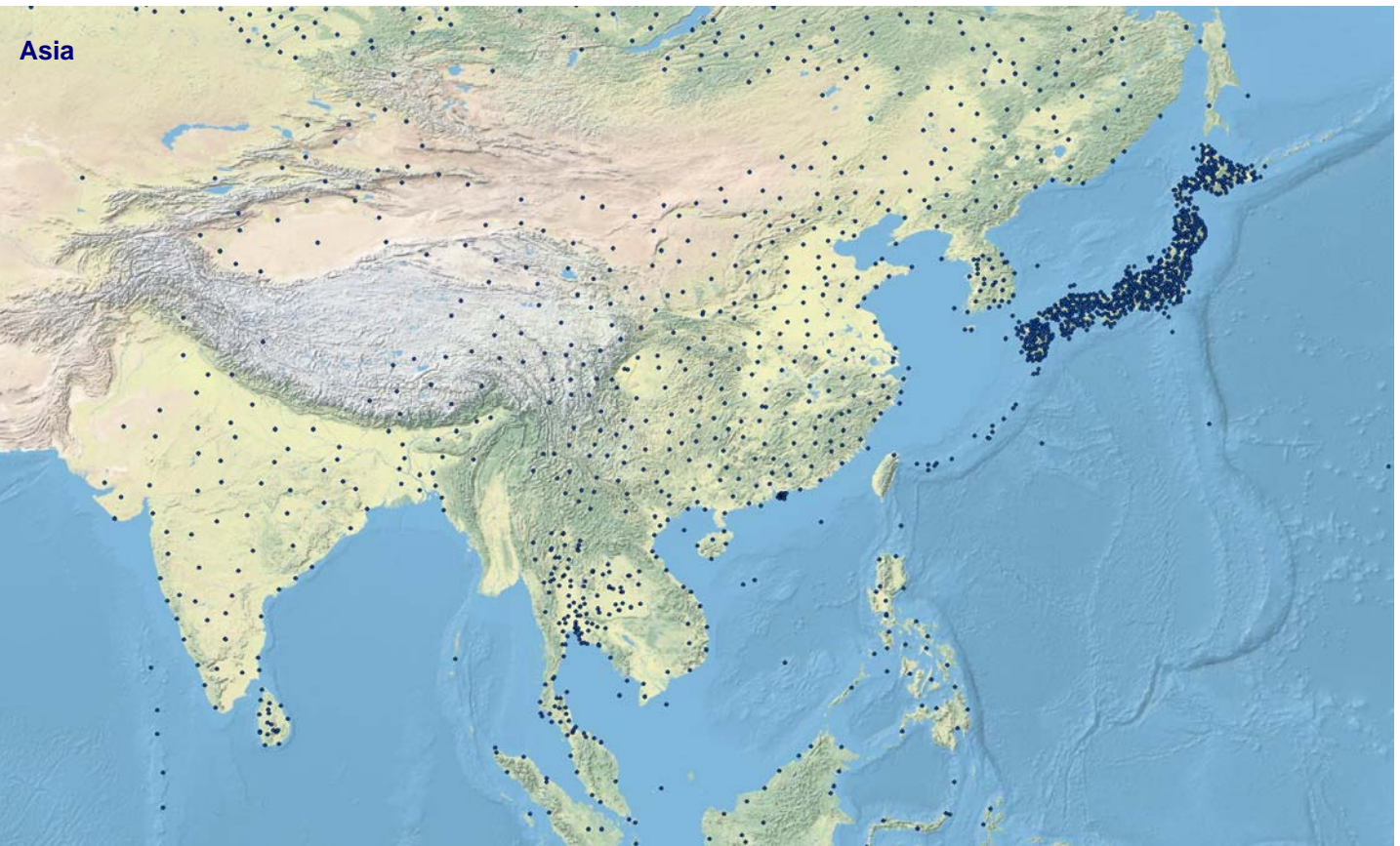
Data Availability

Australia



- Full support for the 3 station traded on the CME (*Brisbane, Melbourne, Sydney*)
- Cleaned data available for 60 sites
- 1000+ station available (*historical data and real-time feeds*)
- Temperature, precipitation, wind speed, wind direction, sunshine,...
- Hourly / half-hourly observations
- Official data sourced from the Australian Bureau of Meteorology

Asia



- Official China climate data sourced from the *China Meteorological Administration*
- 190+ China stations (temperature,

- precipitation, wind, sunshine)
- 750+ Japan stations (SYNOP and AMEDAS network)
- T24 avg temperature data for Japan

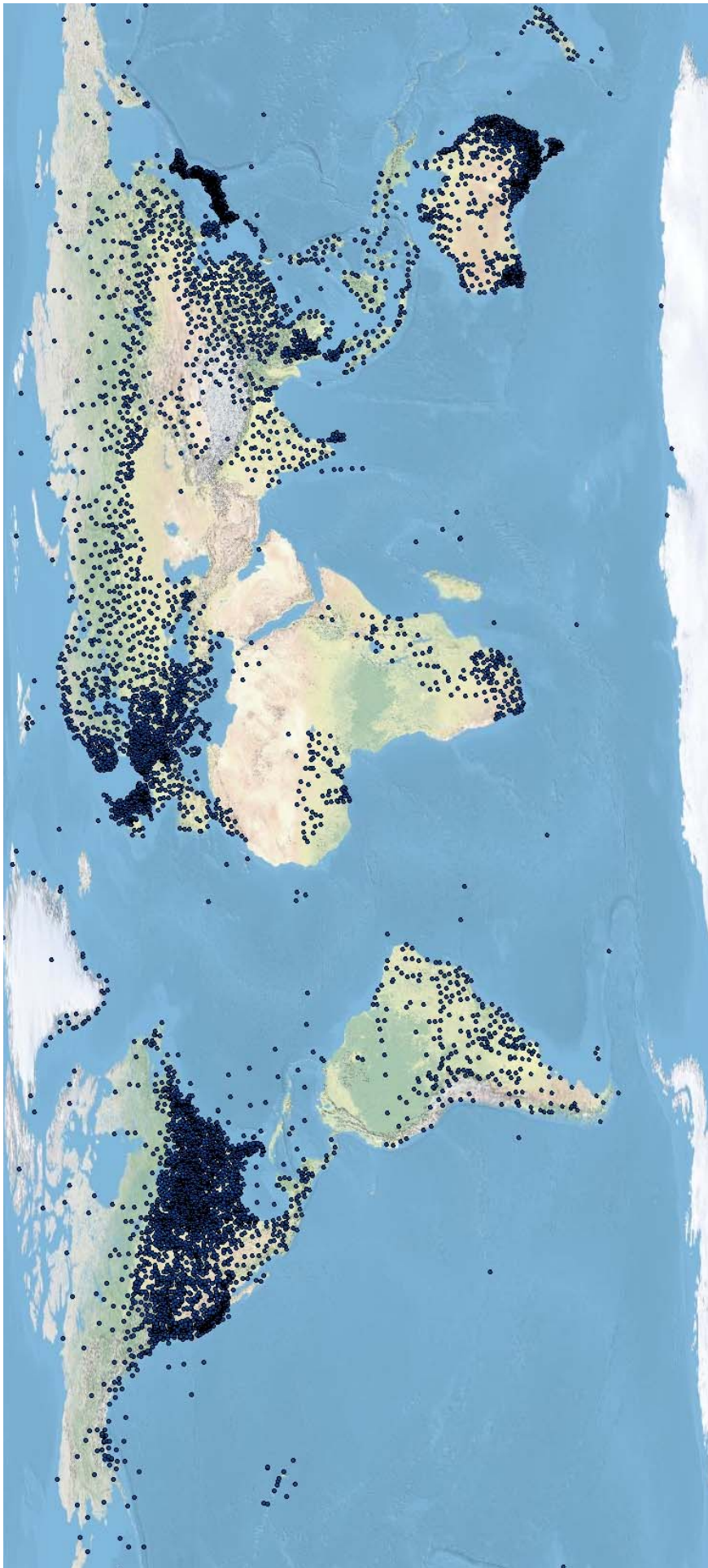
- Full support for the CME-traded stations (*Hiroshima, Osaka, Tokyo*)

SuperPack Data Subscription

Data Availability



Speedwell
Weather



Global

Note: Additional global Synoptic data may be available on a request basis

Contacts

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