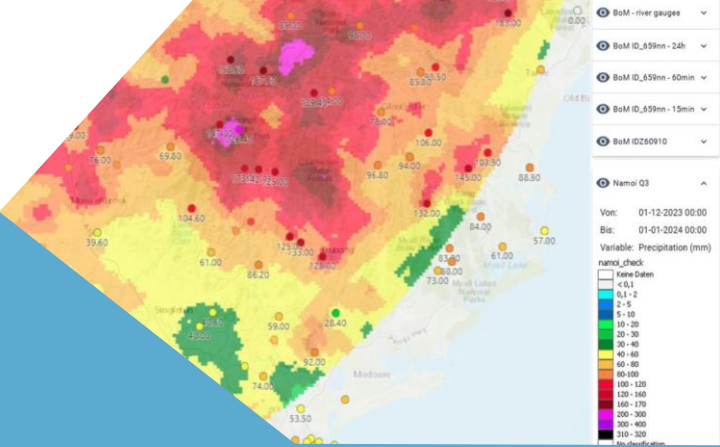




# hydro & meteo



## High quality corrected and gauge adjusted radar rainfall

Location, timing, duration, and intensity of precipitation plays a central role for many applications at many scales. Despite their potential for highly accurate precipitation measurements at a point scale rain gauges alone are often not sufficient due to their limited spatial representativeness. In contrast, radar data is ideally suited to represent spatial precipitation patterns. High quality gauge adjusted radar data combines the strengths of both instruments.

### Our Services

Our service carefully combines quality-controlled data from automatically reporting rain gauges and radar data resulting in a dataset with :

- high accuracy
- good temporal and spatial resolution
- low latency
- good spatial coverage

### Your Benefits

Accurate precipitation information at every location:

- Available for Namoi and other selected areas
- Automatic aggregation to desired parcels
- Access to data immediately after the event
- Access to historic data from October 2020 until now
- Easy comparison of rainfall e.g., seasonal rainfall across different years
- Directly usable as model input
- Never miss a precipitation event
- Integrated in HydroNET

## hydro & meteo GmbH

We are a highly specialized hydrometeorological service provider in Lübeck, Germany with 25 years of experience in:

- Prediction & Warning
- SCOUT radar software
- Data processing & quality assurance
- Analyses & evaluations
- Climate studies & climate assessment
- Training & advice

Hydrometeorological services on your request!

[www.hydrometeo.de](http://www.hydrometeo.de)

### A WaterSENSE Service

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MURRAY-DARLING BASIN

LOCAL IMPACT

WaterSENSE offers Water Managers and Growers a comprehensive and easy-to-use Water Management Toolbox with a variety of up-to-date information for operational water management. For more information about our Services and Subscription models, go to [www.watersense.eu](http://www.watersense.eu)



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# hydro & meteo

## From separate instruments to a combined dataset

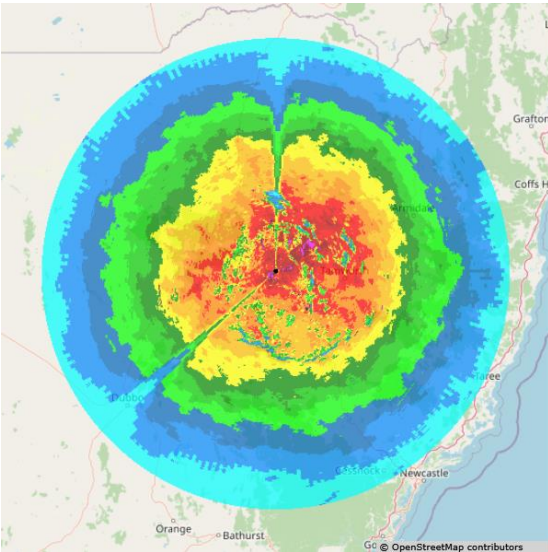
Uncorrected radar data is not directly suitable for most hydrological and agricultural applications. Unknown drop size distributions, anomalous propagation of the radar beam and echoes from non-meteorological targets are some of the important challenges. At the same time also rain gauge data suffers from limited spatial representativeness and potential reliability issues.

hydro & meteo's rainfall service addresses all of the above issues by carefully quality controlling, correcting and combining the measurements from both instrument types into a high-quality dataset.

The accumulated radar data over one year depicted below shows the shortcomings in the raw data as well as the effect of the automatically applied corrections. Before correction prominent features in the radar image are:

- A decrease of precipitation amounts with distance from the radar due to overshooting
- Areas along the radar beam and small areas distributed in the radar image with less precipitation than the surrounding
- Small areas with more precipitation than the surrounding
- Generally, too low precipitation sums compared to after corrections

### Before corrections



Filters applied to the radar data to generate an image with more homogeneous data quality include:

- Advection correction
- Speckle filter
- Clutter map filter
- Texture filter
- Reverse speckle filter
- Beam block filter

After correcting the radar data and quality checking the rain gauge data a spatially variable correction factor field can be determined by the comparison of radar and rain gauge data. This is then applied to the radar data. Thereby, it increases the usable range of the data indicated by the black circle.

### After corrections

