

smartblue Simply intelligent Monitoring

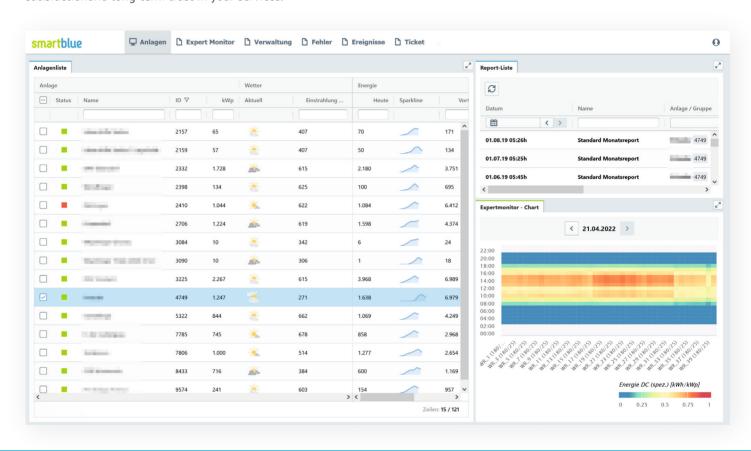
Smart Control 3.0

Hardware-agnostic web portal for monitoring and technical operation of power generation sites

www.smartblue.de

Smart Control Command Center 3.0

Smartblue develops and operates intelligent, cross-manufacturer soltuions for reliable monitoring and highly efficient technical service of photovoltaic sites. The Smart Control Command Center allows you to deliver first class service quality to your customers – for all-around control, fast and intelligent rectification of faults and the maximum performance of the PV sites. With Smart Control, you can lower your service costs, achieve higher electric yields, first class service quality, high customer satisfactionand long-term trust in your services.



Main Features:

- Cross-manufacturer: compatible with all common dataloggers
- All sites can be analyzed and compared at the component level
- Automatic error detection and notification
- · Automated reporting with custom templates
- Simple ticketing system
- Independent administration and setup of new sites

Properties

Our cross-manufacturer Smart Control command center was developed for professional operation and maintenance of photovoltaics portfolios. The user interface of the command center can be highly customized, including as a control room display across multiple screens. Through its use of intelligent and adjustable algorithms, Smart Control 3.0 provides the answer for cost reduction targets of investors in renewable energies.

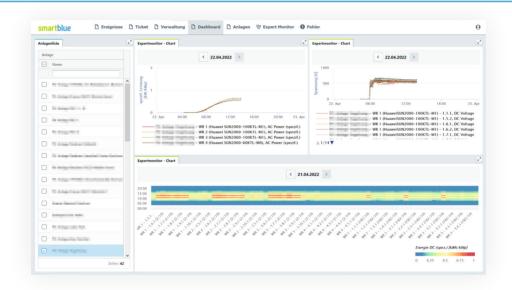
Your Benefits:

- Union of data streams from all sites, meters and external data sources in one clear command center view.
- Optimize workflows in servie operations with cusomisable user interface
- · Automatic analysis of all measurement data using intelligent algorithms
- · Notification only of relevant errors or safty-related event models
- · Affordable monitoring without compromises on quality
- Detection of gradual yield degradation and diminished performance



Operations Management View

- The Smart Control command center can be individually configured according to the requirements of your portfolio and workflows in both form and function.
- Based on standards settings, you can create your own views. To do this, combine one or mor widgets via Drag&Drop.
- JEvery widget can be configured individually. You can hide or shows columns, introduce fixed filters and adjust size and position.
- And if your portfolio has unusual requirements, we develop a specialized widget to meet them.

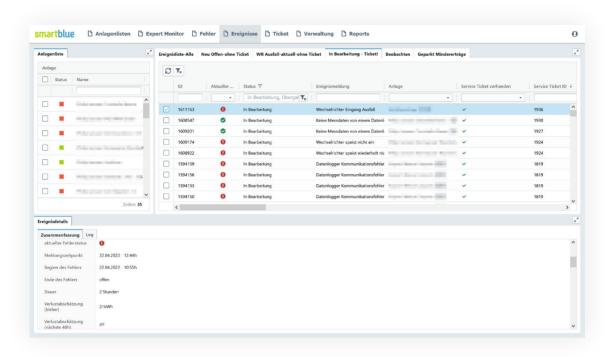


- Visualization of all recorded measurements at the site or component level.
- Individually adjustable site structure for better orientation in large sites.
- Visualization of weather data and yield simulation based on irradiation data (sensor or satellite based).

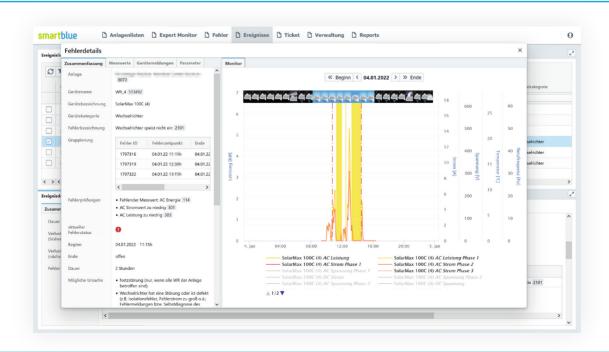
Key Widgets:

- Measurement time series (bar or line graph)
- Site map
- Fault notification with visualization
- Heatmap
- Ticketing system
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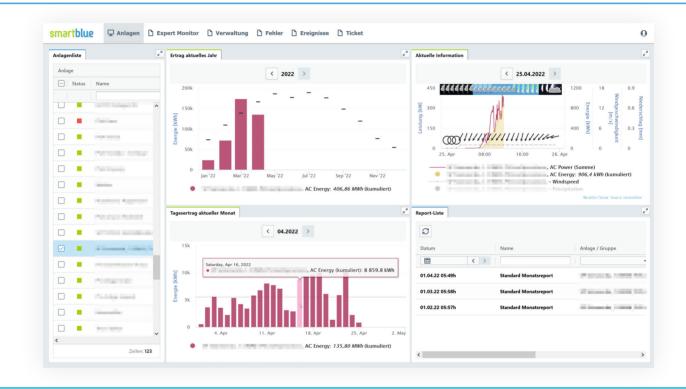
- You can create lists sorted by error model and workflow status and thereby track the repair process of faults.
- Group and summarize faults in included ticketing system.



- Visualization of the fault in context of the day's measurements.
- Reason for automatic detection is displayed.
- Assign a fault to a technician and document ist cause and the actions taken.

Investor View

- To create and investor's view, the visualized information can be reduced to the most significant data.
- The amount of technical data presented can be adjusted according to requirements.
- With scheduled, automatic reports, you can remain up to date with your sites without having to check the web portal daily.



- According the custom requirements by investors and owners, the operations managers can create a clear and concise visualization of the most important measurements.
- Compare sitewisee yield to simulation based on satellite or sensor data.
- Compare and analyze sites within a portfolio.

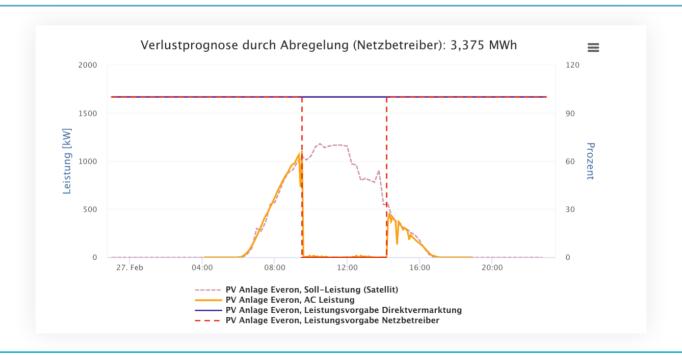
Key Widgets:

- Site list
- Yield comparison
- Power limitation by grid operator
- List of reports
- ...





- Site reports can be scheduled and sent out automatically via e-mail.
- · Additionaly, the entire history of reports is available for download in the web portal.
- Report using standardized template or custom formats.
- Yield analysis and reporting of fautl events and their rectification.



- Estimate the yield lost due to grid operator power limitation.
- · Loss estimate is based on yield simulation from satellite irradiation data.
- If configured, the power limitation event will be notified via e-mail.



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