



BWT AQU@Vigilant

Next generation services with 100% digital data management

For You and Planet Blue.

 **BWT**
BEST WATER TECHNOLOGY

**Automation and digitalization
are key for successful and
compliant data management.**



Increase efficiency with improved data management

Data management is a serious hurdle, an ongoing concern and a huge cost factor. A decent amount of FDA warning letters refer to issues in documentation. AQU@Vigilant has been developed to release the user from this burden and to guarantee highest system availability with best performance.

The challenges

Equipment in pharmaceutical industries generate an incredible amount of data from the project start until end of lifetime.

Asset management, maintenance and process monitoring is continuously producing information that requires reporting analysis and interpretation.

Manual documentation is prone to human errors.

The consequence

- High effort, cost and potential data integrity issues
- Expert knowledge is required to understand all this data

The solution

AQU@Vigilant is a service concept that combines 100 % digital asset management, maintenance documentation and IPC. All data are automatically consolidated at one place, accessible from wherever you are. Always up to date.

- Real-time digital documentation follows all ALCOA+ requirements by design
- Continuous monitoring and interpretation of the data with the aid of BWT experts and AI

Your benefits

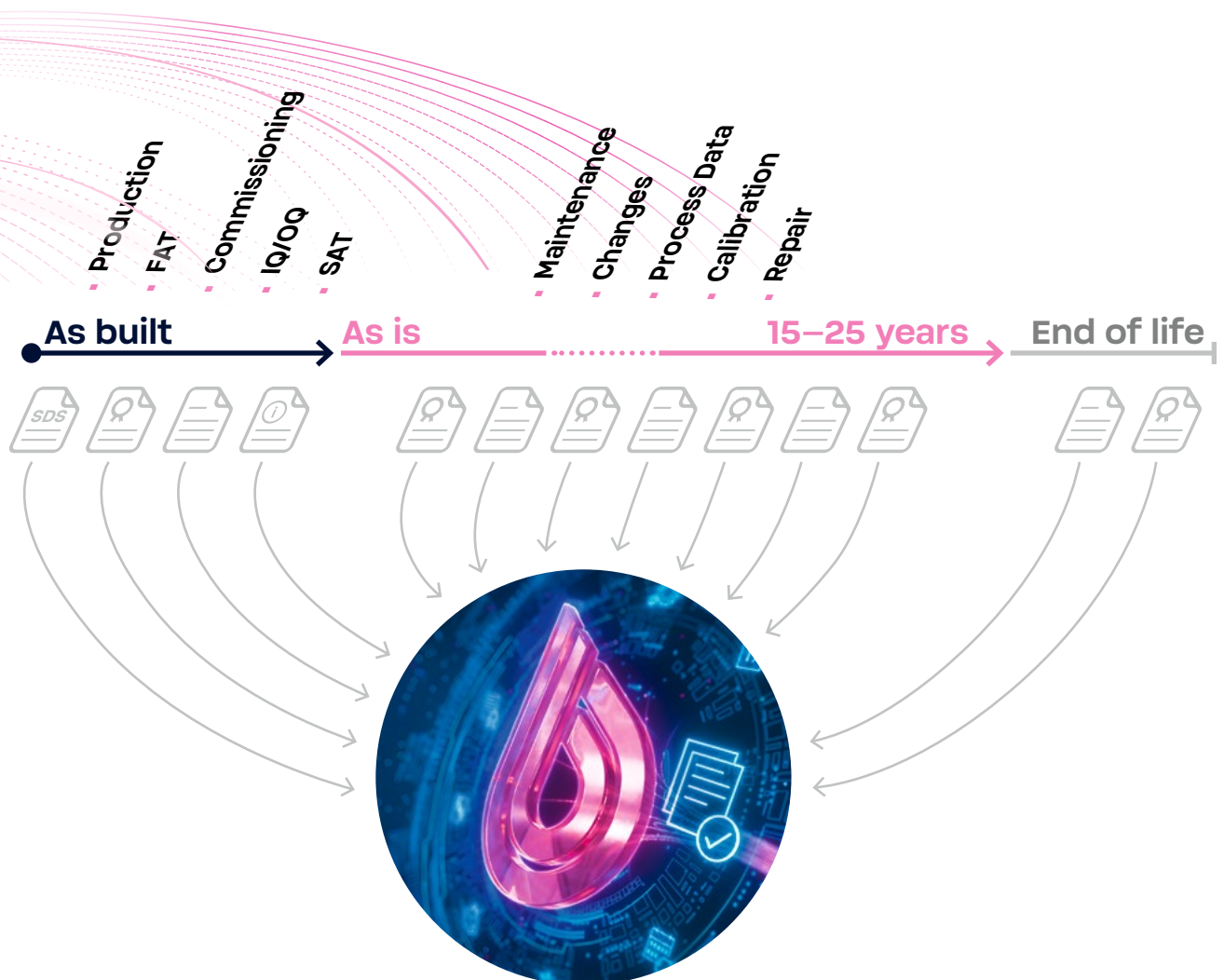
- Higher efficiency leads to reduced costs and effort
- Traceability in perfection
- Reliability: Remote diagnosis for early detection of potential problems significantly increases system reliability
- Audit proof: No complicated preparation of audits. All information directly accessible
- Better process understanding to optimize system performance and availability
- Sustainability is also getting the best out of your equipment



All lifecycle data at one place

All data generated throughout the lifetime of a system are stored in a database and linked to each other.

Gapless documentation from the cradle to the grave





Consultation



Prediction

**Predictive
maintenance**



Analysis

**Gapless
reporting**



Status

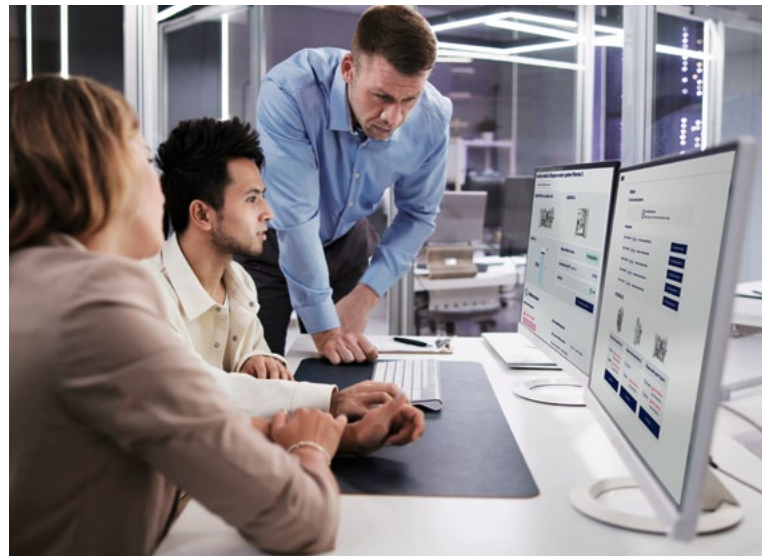
**Simple asset
management**



History

Transparent and useful data

AQU@Vigilant generates a digital twin, shows all relevant information. A data driven approach to maintain the system performance helps reducing the costs and downtime.



Consultative service

Without any user intervention, the BWT in house service analyzes all process data with the help of AI. This can provide valuable information to avoid unplanned downtime.

Our continuous improvement in the background

Uses historical data to describe possible optimizations for best performance.

Sustainability

Performance reports can help you to increase your sustainability.

Cost reduction

The better an instrument is maintained, the better is the performance and reliability.

**AQU@Vigilant:
your 24/7/365
service technician
on site**

AQU@Vigilant Portal

Your single point of contact to all relevant data of a BWT water system. It's all about giving the user all needed information with minimum effort. Actual and historical data, reports, maintenance planning and much more.

The user portal is your ultimate link to your assets; with all information you need. A tailored dashboard contains direct access to whatever system information you are looking for.

- **Maintenance planning**
- **Process data**
- **Data trending**
- **Historical data**
- **Reports**
- **Certificates**
- **Your direct contact to our BWT service team 24/7 with an embedded email communication**

All information in your pocket...

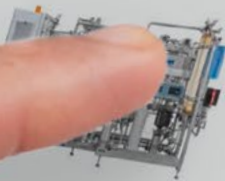
AQU@Vigilant is a web-based system. No software installation is required. Available with your computer, tablet or smartphone.



Facility details: Ultrapure water system Pharma 3

[← Back to Facilities Overview](#)

OSMOTRON Pro 3000 WFI



LOOPO H



Tank® [%]



Operational state

Production

Conductivity® [µS/cm]

0.310

Status

✓ OK

[Status report](#)

Maintenance

Next Maintenance

⚠ Not yet Confirmed

[Request Start of Planning](#)

Next Maintenance is due on the: 04.01.2026

Past Maintenance

Show past Maintenance:

Documents 01.07 – 04.07.2025:

01.07 – 04.07.2025

[Maintenance plan](#)

[Maintenance report](#)

↑ Calibration

How AQU@Vigilant supports you

In your daily tasks

- You start your computer and all system information are directly visible
- You will be informed about critical situations
- All data are easily accessible
- Early signs of malfunction are displayed on your dashboard
- Your routine work is already planned, like replacement of sterile filters or UV-lamps
- If there is a leakage or unusual sound of a pump, just scan the QR- or RFID code to access all relevant documentation about the part (i.e. part number, operating instructions and maintenance activities)

In your maintenance planning

- Forget about unnecessary process interruptions
- Avoid unplanned downtimes
- The online monitoring and AI supported data interpretation tells you what is the status of your equipment and gives clear advices for the next maintenance
- Perfect traceability of the system history together with prediction optimizes maintenance to do as less as possible but as much as really needed
- Maintenance protocols and maintenance planning is taken to the next level

In maintenance execution

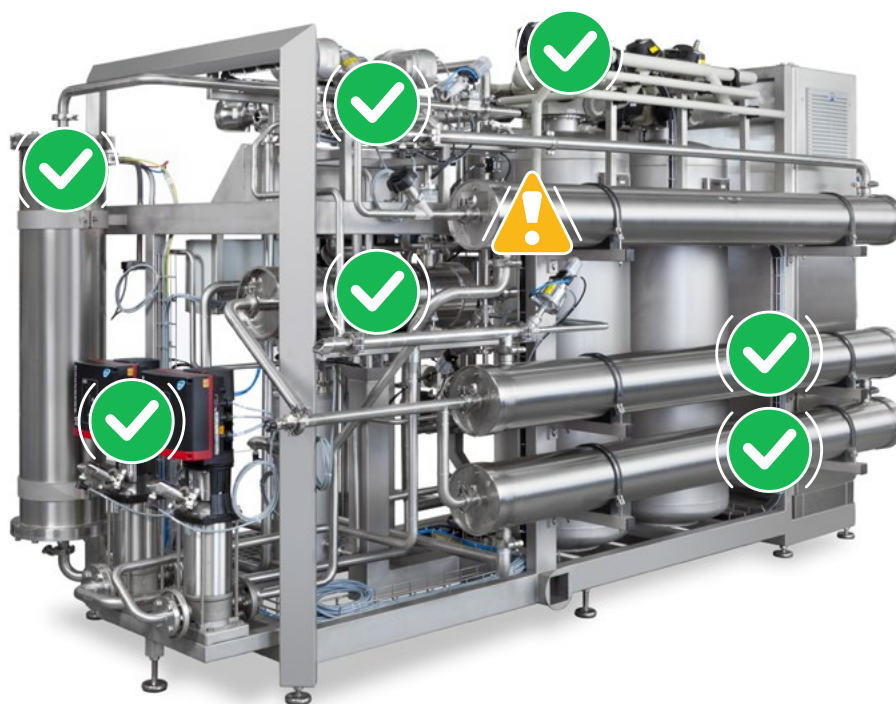
- Digital identification
- Equivalent replacement
- Fully automated documentation of all activities
- Picture documentation and judgement of the replaced components

In reporting and documentation












All activities are documented in real time. No need for manual transcription. All Reports, certificates, information about status, performance and efficiency are automatically created and stored in a database.

- Tracability, plannability and quality on a new level
- Audit Proof by design






Information could be integrated in your control system by standardized API interfaces.



Summary

State	Name	Comment
	Temperature SIP Softener	Temperature SIP Softener values outside of ideal range
	Conductivity EDI Concentrate	No action required
	Conductivity Purified Water	No action required
	Current EDI	No action required
	Voltage EDI	No action required
	Temperature Purified Water	No action required
	Temperature Heating Output	No action required
	Conductivity RO Outlet	No action required
	Temperature RO Outlet	No action required
	Conductivity Loop Return Uncompensated	Conductivity Loop Return Uncompensated values outside of ideal range
	TOC Loop	No action required

Component Summary

State	Module	Comment
	Feedwater	No action required
	Softener	Temperature SIP Softener values outside ideal range
	EDI	No action required
	RO	42.37% of PDI270A.5.7 Difference pressure concentrate stage outside of ideal range
	Membrane Degassing	12.77% of FIT270A.9.1. Flow process Air values outside of ideal range



**Online
monitoring**



Preparation



**Digital
identification**



Execution



Reporting



Forecast

**Digital
Traceable
Audit-Proof**

Maintenance process

From Planning to forecast, 100% digital data management, interpretation and activity monitoring. Reporting with just one click of a mouse button.



Online monitoring

BWT services is able to get the system data in real time and can take precautions for the next interventions.

Scheduled maintenance, plus maintenance on demand before a problem occurs.



Preparation

Based on an online system check, AQU@Vigilant develops a maintenance plan including all material, documents and scheduling.



Digital identification

Each machine, module or component is identified with a unique QR- or RFID code. This code is connected to a database which contains all information. Supplier, type, order number, installation date, maintenance activities as well as all additional documents like certificates, manuals etc.



Execution

- All maintenance steps are electronically monitored
- SOP's are digitally available and documents are signed with electronic signatures
- Paperless maintenance is possible



Reporting

GMP compliant electronic reporting gives gap-less information, traceable and is directly available. Just one mouse click away.

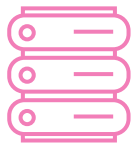


Forecast

Combining actual with historical data gives information about trends to predict future behavior.

Our product offering

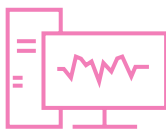
Tailored service to your individual needs.
Together with you, we create a service package, meeting all your requirements.



BASIC

Digital asset management, services and documentation

- Your individual user portal gives you access to maintenance or calibration reports, certificates and much more. Allows you a better maintenance planning and offers 100% digital documentation
- Digital identification of all components (QR / RFID) with history and all metadata (certificates, reports e.t.c.)
- Maintenance planning inside the user portal with direct contact to BWT service
- Actual system documentation "as built until as is"



ADVANCED

Performance analysis for predictive maintenance

- Analyzes all performance data and automatically provides you with information for maintenance planning and performance improvements
- Avoids unexpected downtimes with clear information to support predictive maintenance
- Reports (status, system performance) are available online
- Identifies potential risks and supports you with direct information (i.e. via mail)
- All historic data and trendings of your equipment online available



EXPERT

24/7/365 Expert service technician on site

- Combining power of data and AI with our in house service expertise
- Regular check of your system status by expert
- Analyze all data and react in case of upcoming events



