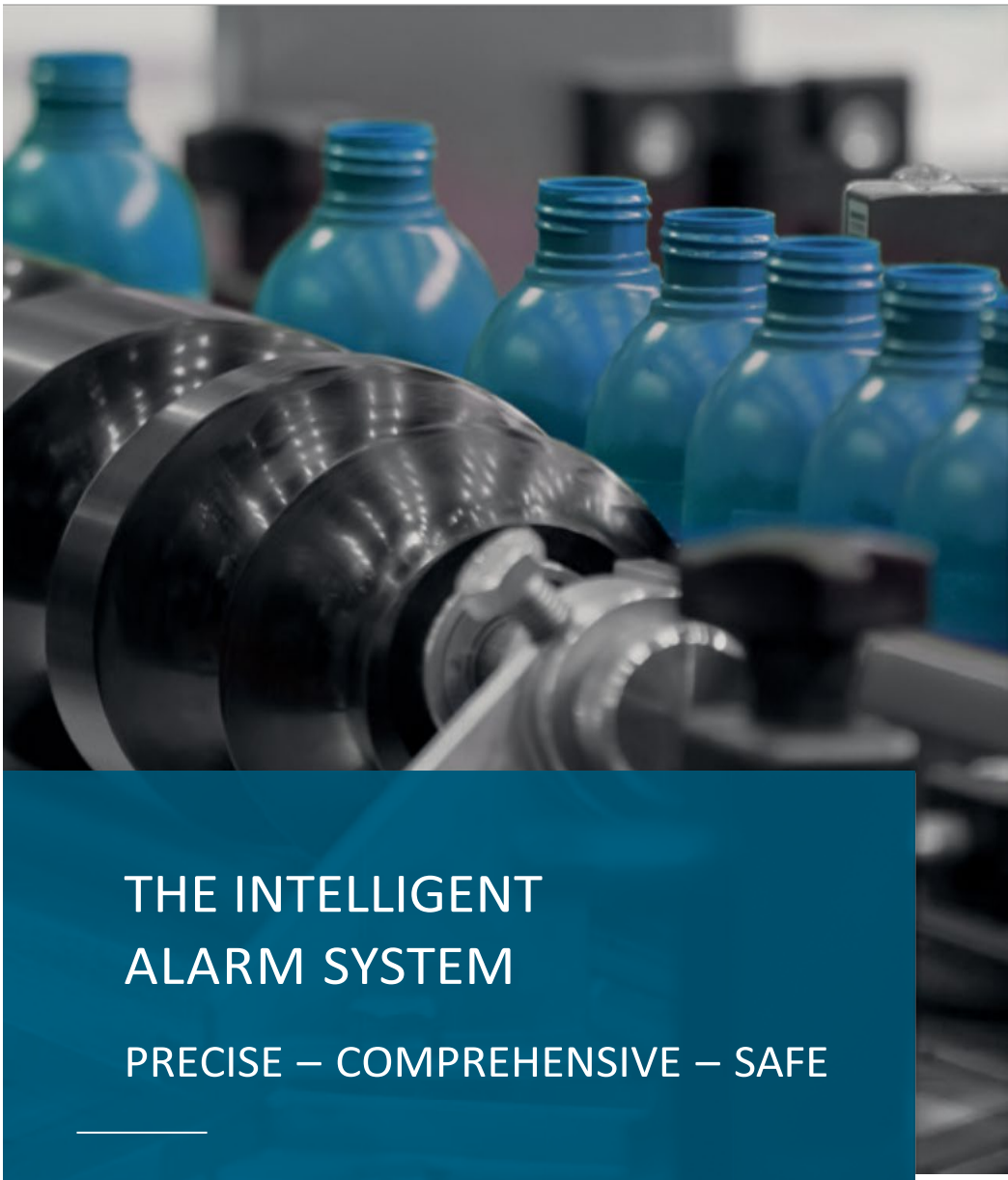
V. AIP



THE INTELLIGENT ALARM SYSTEM

PRECISE – COMPREHENSIVE – SAFE

- Immediate and targeted notification to relevant recipients
- Enables quick action and prevents downtime
- Service team coordination via messenger and acknowledgement functions
- Transparency through analysis of the alarms sent
- Maximum safety for shift operation

INDUSTRIAL AUTOMATION

AIP – THE ALARM AND INFORMATION PORTAL

The challenge

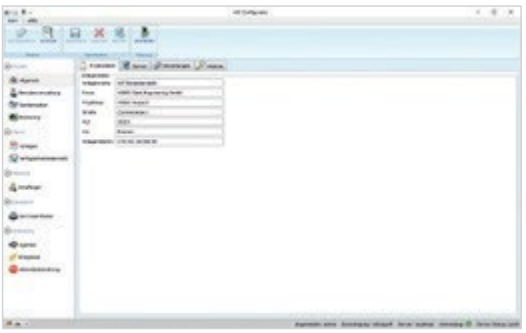
Years ago, it was merely a matter of automatically recording alarms and simply forwarding error messages, but the requirements today have increased considerably. The market demands a flexible reporting system that reaches the right contact people at the company in a targeted way through various modern transmission media. Responding quickly and safely are the top priority to avoid production downtimes and plant shutdowns.

Your demand

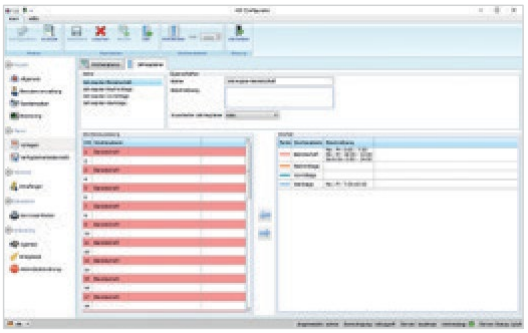
Do you want to be alerted immediately, specifically, and efficiently in the event of faults in your system? So that, if there is a problem, a rapid response is possible at any time and from any location, preventing stoppages and failures?

With AIP, we have developed a solution that is precisely tailored to your demands.

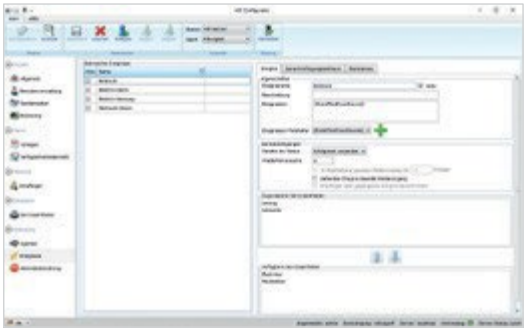
1.



2.



3.



AIP Screenshots: 1.General configuration
2. Configuration scheduler | 3. Event configuration

YOUR INTELLIGENT ALARM SYSTEM

The solution: AIP

The alarm portal AIP bridges the gap between a critical event occurring and being reported.

AIP ensures that alarms are reliably triggered and that the relevant target groups within your company are notified correctly. This means that the right decisions can be made within the shortest periods of time, protecting your plant from breakdowns and downtimes.
AIP automates alarm processes and, through defined escalation chains, ensures that any disruption can be rectified immediately.

Alarms reach the appropriate recipients immediately, wherever they are – via email, SMS, voice messages, audio, messenger, or pager.

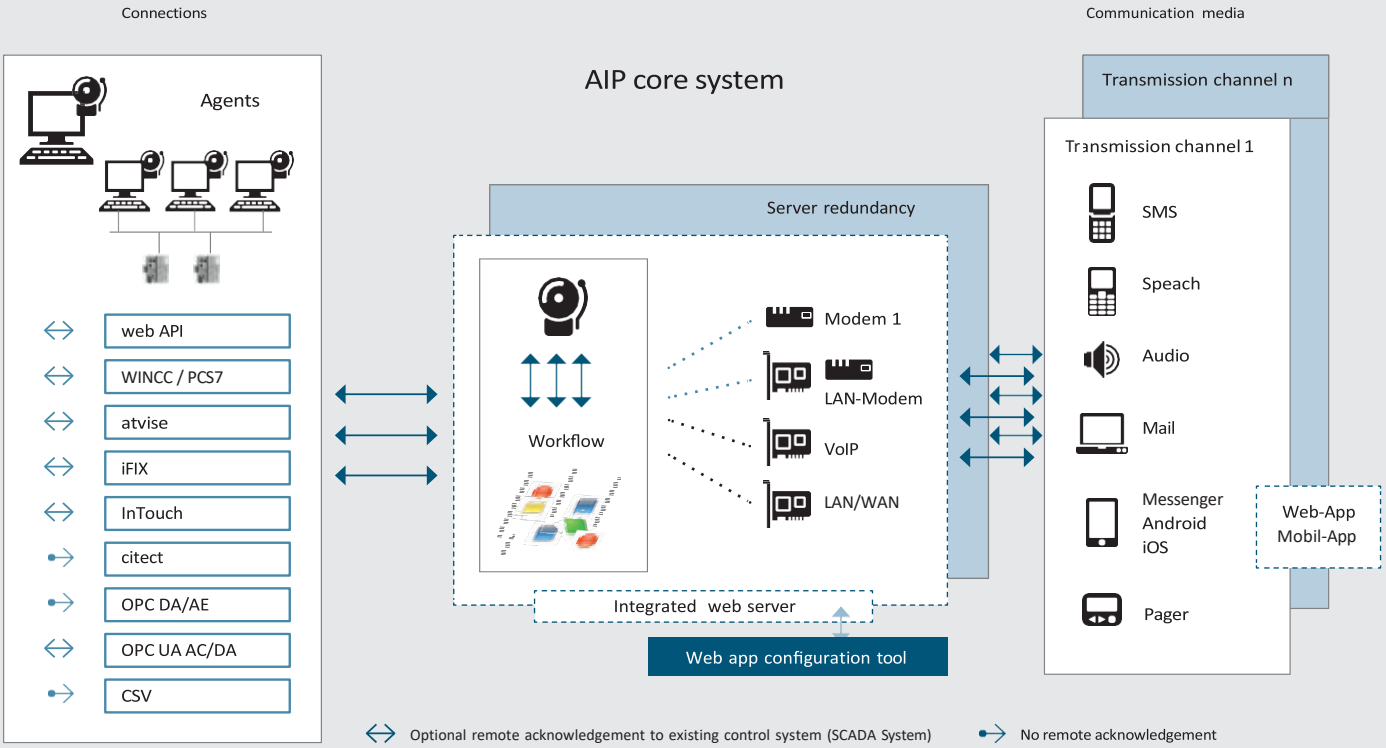
As an application platform with a modular design, AIP works together with existing HMI/SCADA, MES and ERP systems, and fits seamlessly into your company's IT architecture. Safe communication, flexible configuration and multiple redundancies are cornerstones of the concept.

With AIP, you can

- React quickly to faults and avoid system failures
- Record alarms, faults and events in a decentralised way and make them available centrally or to a universal information system.
- Accelerate alarm and communication processes
- Optimise the deployment of your service and maintenance staff
- Use a comprehensive alarm tool for multiple HMI/SCADA control systems
- Continuously monitor processes regardless of your location via remote alarms with suppression of faults
- Alerts across groups – with takeover of actions
- Store plant expertise and scenarios by defining rules and rule-based alarm linking
- Carry out cross-plant alarm analyses
- Create process protocols for safety and control

The benefits for you

- Allows service teams to work on the go
- Different media for sending alarms can be selected (SMS, email, pager, calls, audio, messenger)
- Optimised for use in companies with increased safety requirements
- Connection to multiple HMI/SCADA control systems, MES systems and ERP systems possible
- Reduction of downtimes and increase in availability of automated systems
- Efficiency optimisation and cost reduction through sensible use of on-call staff and app-based takeover of tasks for teams
- No creation of data points and variables necessary due to rule-based alarm design
- Very fast configuration thanks to automatic importing
- Applicable in small plants and complete factories
- Supports "active directory"



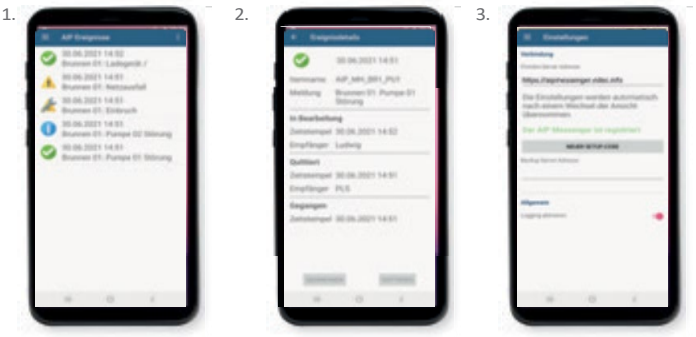
Precise alarms

With AIP, different control systems, HMI/SCADA components or visualisations can be connected via communication modules (agents). AIP supports handling alarms, events, messages, and faults, as well as processing and analysing them.

If an alarm, message, or fault is triggered in your process-related IT environment, the AIP agent generates a clear order with all the information required for further processing in the portal.

Orders are held, multiplied for redundant applications if applicable, and sent to the AIP server via IP communication.

AIP enables free design of the escalation list and secure delivery of the order to the recipient. Sources of faults can thus be reduced to a minimum.



AIP Messenger Screenshots: 1. Events | 2. Details | 3. Settings

Multiple applications

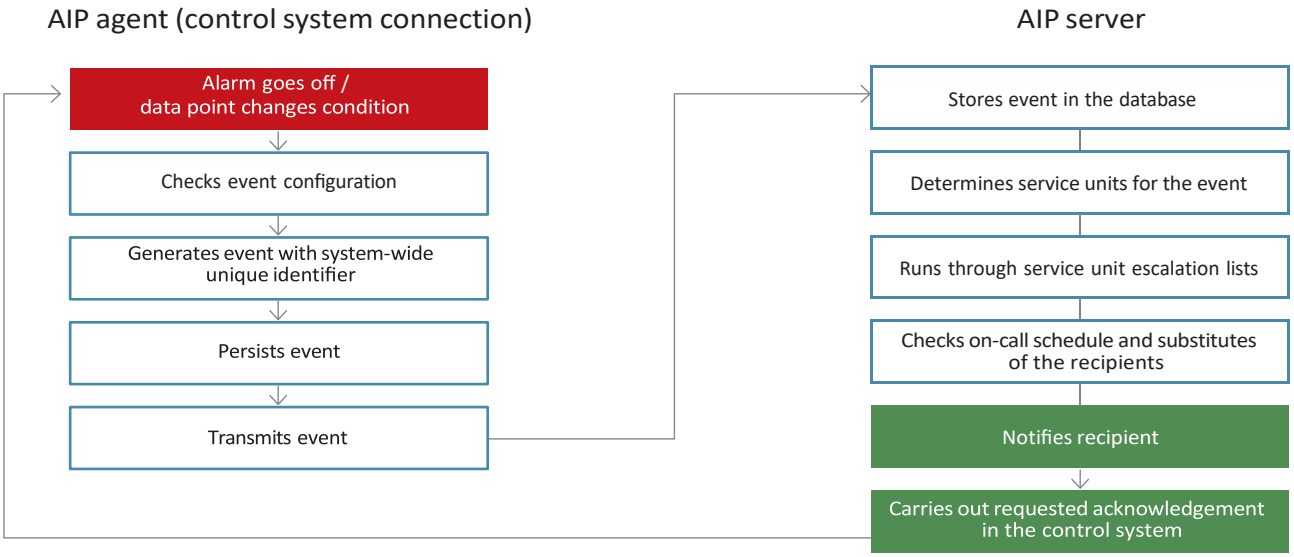
AIP was developed and optimised for various applications. For example, for use in companies with increased security requirements, when connecting multiple HMI/SCADA control systems, MES and ERP systems, or even for the comprehensive and optimised deployment of service and maintenance staff.

Events, regardless of the type, are recorded decentralised in AIP and processed centrally. After aggregation, the event can be provided universally to an information system. Plant expertise and alarm scenarios can be easily stored in graphic form.

Expanded functions

Integrated, selective alarm deactivation facilitates maintenance visits during operation. Targeted alarms can be silenced, e.g., via tag-based filters.

In the message flood concept, the number of messages can be reduced in the event of an increased volume of alarms so that only the most important information about the alarm is forwarded to service personnel.



Internal flow chart for an alarm

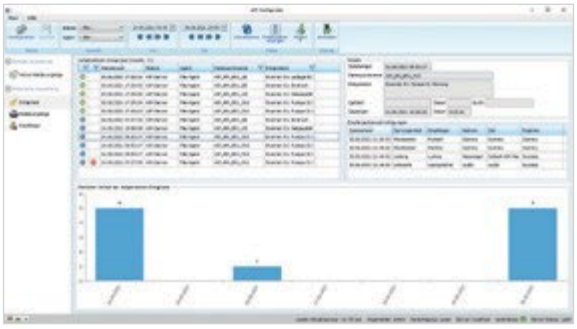
Custom configuration

Alarms/events are processed using an integrated workflow engine, through which different processes can be carried out and modelled.
First, the relevant service unit – which reveals the current shift, group, or person to be notified – is determined. If this step is completed, a transmission medium along with the corresponding recipient for forwarding to can be chosen. A variety of channels and methods are available. If the chosen recipient cannot be reached, other people can be notified – after a delay which can be freely defined – via an escalation setting.

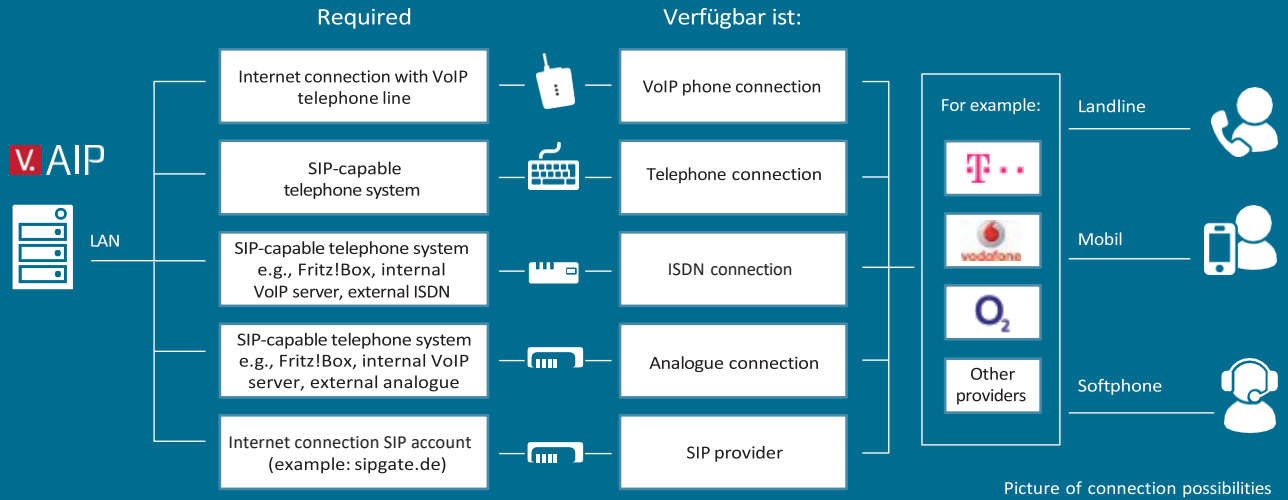
Convenient analysis functions

An easy-to-use module is available for examining and evaluating the alarms and events. The entire plant system can be analysed using this tool.

Current and historic event lists, top 10-alarms, alarm frequencies and detailed logging information allow for convenient analysis and classification according to problem areas.



AIP Screenshot:
Analysis – stations



Picture of connection possibilities

INTEGRATION + INTERFACES

Flexible connection

A wide variety of control systems can be connected to the platform as sources of information – even redundantly.

The connection via OPC AE/DA and OPC UA AC/DA ensures the connection to many universal automation components. In addition, there is native integration to WinCC / PCS7 from Siemens, iFIX, and Cimplicity from GE, atvise from Bachmann Visutec, as well as InTouch and Citect from Schneider. Other systems can, by request, be integrated into this concept or are already in development.

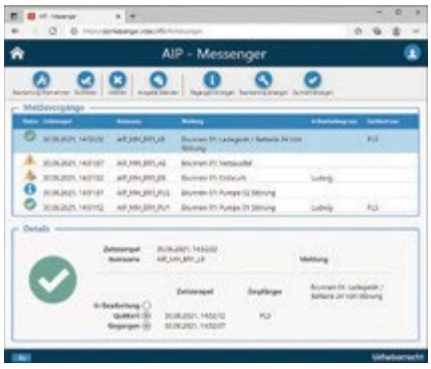
The variables can be automatically transferred into AIP from various control systems. Corresponding examples are available. The AIP agents supply the data from the control system or HMI/ SCADA. It is possible to automatically adopt alarm detection configurations from the control system, which significantly reduces configuration effort.

Web frontends

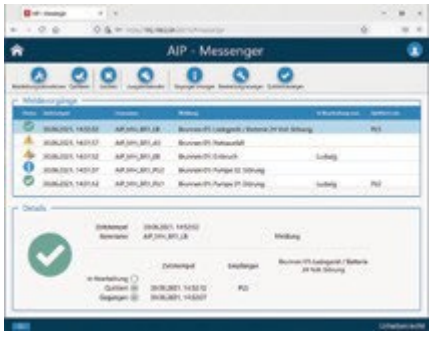
Planner and recipient parameters can be set remotely via a standard web browser. An analysis function is also integrated, e.g., to analyse the frequency of alarms. Other functions will follow in subsequent development steps in accordance with our customers' requirements.

1.

2.



3.



AIP messenger: 1. Desktop | 2. Edge | 3. Firefox

Multiple forms of transmission media

Integrating a diverse range of transmission media ensures the delivery of a task to the relevant recipients. Messages can be sent as text or speech (text-to-speech), with acknowledgement possible up to the PLC level.

A native app for the Android and iOS operating systems makes it possible to receive alarms and acknowledge them. That means the service teams have the option of synchronising and optimising deployment times. Acknowledgement is possible up to the control system and is also available as a desktop version for Microsoft operating systems.

Secure communication

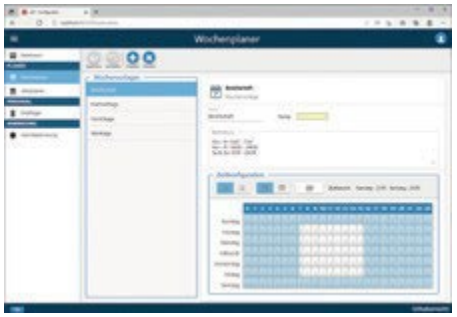
The system has a monitoring function, as well as internal self-monitoring for the agents. This guarantees that communication with the SCADA system can be monitored at all times.

Redundant design is considered in the core concept for the entire platform. A heartbeat function has also been implemented, which ensures the alarm system is monitored from the SCADA. A server redundancy for the design with two AIP servers is included with the configuration synchronisation.

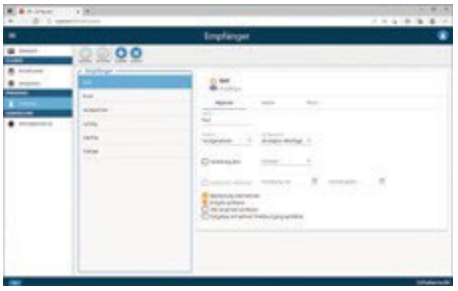
Only authenticated users are given access rights to the allocated areas of the system. The entire process and the associated data traffic can be traced and recorded, which guarantees seamless tracking. A complete process log is used for control and analysis.

1.

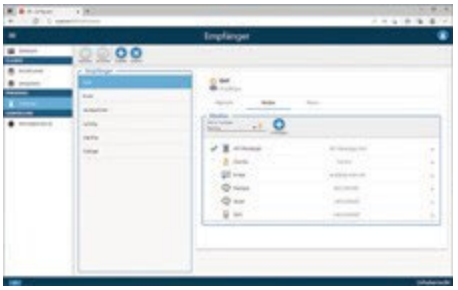
2.



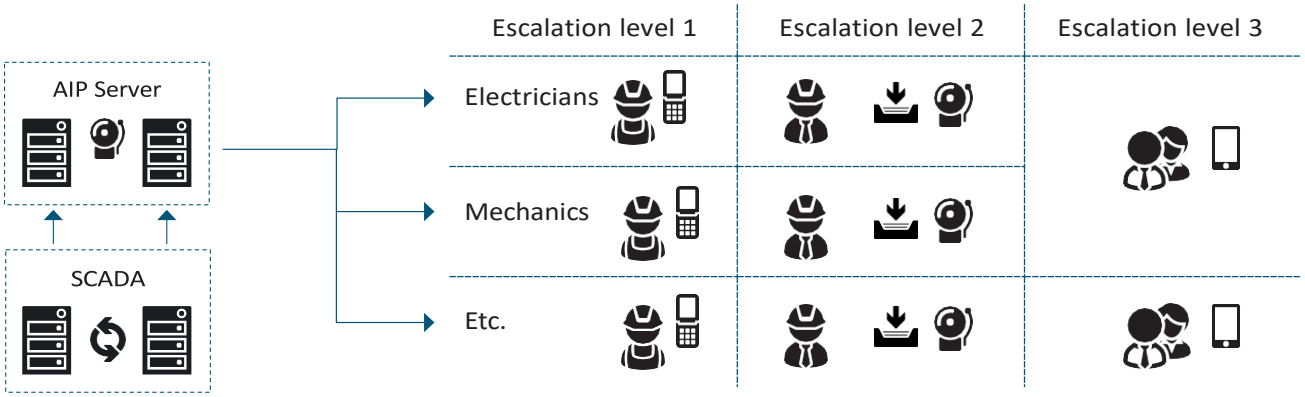
3.



4.



AIP web configuration: 1. Annual plan | 2. Weekly plan 3. Recipients | 4. Recipient media



TECHNICAL DATA

SERVER SOFTWARE

You can find the current approved operating system and compatibility lists for couplings on our website.
The AIP agents can also be run on Windows XP and Vista

CONNECTIVITY

Standard – OPC DA/AE and OPC UA AC/DA
Others by request

MODEM

EDGE AIP – ethernet LTE modem for AIP applications (see data sheet)

OUTPUT MEDIA

Speech via VoIP with acknowledgement
SMS with acknowledgement
Messenger (iOS, Android, Windows) with acknowledgement
Email
Audio
Pager
Web

LANGUAGES

German, English, Italian, Spanish and French – others by request

You can find more information about AIP on our website: www.industrial-automation.at

Industrial Automation GmbH
Technikerstraße 1 - 3 · AT-6020 Innsbruck· Phone +43(0)512 – 272271 0 · office@automation.team
Please refer to our website for branch offices and international representatives.

design: www.blaukontor.de
11/2021