



Interview

ASi-5 Future-oriented technology for Automation in process technology

Like most, the process industry is under intense cost pressure. For years, AS-Interface has been succeeding in reducing installation costs. The introduction of ASi-5 technology provided additional features to increase plant performance significantly.

The GEMU Group operates close to the customers with a product portfolio of automation components for process technology in its strategic business units pharma, food and biotech, industry, semiconductors, and medical.

Now, GEMU is expanding its product portfolio of automation components with ASi-5 technology to meet the increased demands of modern automation.

In conversation: Interview with Martin Schifferdecker, Head of EPA, GEMÜ-Group

ASi: Hello, Mr. Schifferdecker! Thank you for being available for this interview. Please introduce yourself to our readers.

M. Schifferdecker (M.S.): *My name is Martin Schifferdecker. I have been working at GEMU for 20 years. As the head of EPA (electronic products and applications), I am responsible for product and application management for GEMU's electronic products. The extensive electronic product range includes measuring instruments, pilot valves, position feedback devices, valve interfaces, position and process controllers, solenoid valves, and electromotive valve drives. Our portfolio also includes products with AS-Interface interfaces, such as the GEMU 4242 valve interface.*

ASi: AS-Interface in process technology? Sounds interesting. Where do you see the general advantages?

M.S.: *AS-Interface's simplicity impresses throughout the entire cycle of a plant. AS-Interface technology draws attention across the board: simple design, simple installation and wiring, simple commissioning, simple troubleshooting, and finally, simple expansion.*

This simplicity is particularly crucial since our service personnel is primarily involved in mechanical issues due to the specifics of valve technology. Experience shows that operating AS-Interface is manageable for any personnel

„ASi-5 technology is a pivotal steppingstone on the way to the digital future of process technology.“

Martin Schifferdecker

Head of EPA, GEMÜ Gebr. Müller Apparatebau GmbH & Co.



without any problems. Wiring in process technology cannot be done any easier, more flexible, and safer. In addition, we can future-orientally digitalize sensors and actuators, i.e., valves on the lowest field level, and cost-efficiently make them network-compatible. Another advantage: AS-Interface is inherently designed to operate in hazardous areas (zone 2 or class 1 div 2) without problems. Users experience the reliability in the installed valves, especially in plants with high safety or quality requirements.

ASi: Mr. Schifferdecker, you have gained plenty of experience using AS-Interface. How long have you been working with AS-Interface technology?

M.S.: The GEMU Group has successfully been using AS-Interface technology since the late 1990s. I have been working with AS-Interface since my first day at GEMU. For example, valve automation is essential for modern, high-performance plant control. Precise detection of the end position of valves provides, for instance, the foundation for reliable process automation. This is why a globally active company like GEMU uses a future-oriented communication technology like AS-Interface. The internationally standardized AS-Interface tech-

nology is impressive due to its easy installation, reduced wiring efforts, high flexibility, fast transmission of large amounts of data, and low costs. This is the reason why AS-Interface is well-established within the GEMU Group as well as with global customers. Succinctly said, AS-Interface technology has a very positive connotation and is specifically sought after.

ASi: This sounds like a real jack-of-all-trades. Are there certain areas that particularly rely on AS-Interface?

M.S.: In fact, AS-Interface is quite universal in its applications. Our customers yield from the global process industry. These companies use ASi for field device automation – i.e., directly on-site. The end position of valves in the process can be determined through AS-Interface and, therefore, be automated – for example, in open/close applications. Using an integrated sensor, the combination of position detection devices and valve interfaces detects the process valves' end position. It uses AS-Interface technology to transmit the signal to the system control. We implement the communication between position detection and measuring devices through ASi-5

and its fast transmission of large data amounts with short cycle times.

Based on years of experience, ASi is exceptionally well-suited for pharmaceutical, food, and biotech applications. These customers appreciate AS-Interface technology; it is very popular. The same can be said for industrial applications.

ASi: Really? Could you describe such an application? And what exactly are the advantages of AS-Interface for you?

M.S.: Let's take a look at a plant using process technology. In principle, the plant consists of different sub-processes. Individual plant sections that contain the respective sub-processes are designed to be as compact as possible and are then combined. This combination includes a large number of valves. When connecting the valves, AS-Interface technology shows its impressive electro-mechanical advantage. The AS-Interface cable comes from a reel and can be cut to the exact length required for the specific application. This eliminates unnecessary wiring. Wiring in process technology can currently not be done any easier, more space-saving, more flexible, and safer.

So, GEMU uses AS-Interface in a wide range of applications. Has ASi-5 technology already been implemented into any applications?

M.S.: Yes! Interestingly enough, at the beginning of GEMU's ASi-5 development, a pharmaceutical company announced its interest in ASi-5 technology for its new plant. The customer had been successfully using AS-Interface for years and was impressed with its simplicity and performance spectrum. Since the customer's new plant was intended to apply predictive maintenance, he decided to implement ASi-5 technology. ASi-5 is especially suitable as a communication system for managing and transmitting advanced device functions related to powerful condition monitoring. Ultimately, he used the new generation GEMU 4242 valve control unit with an ASi-5 interface. Easy to see: AS-Interface technology offers enormous economic and technological potential. This is why ASi-5 guarantees high investment security for us and our customers.

ASi: So, digitalization is on the rise in process technology. To what extent do you benefit from AS-Interface technology?

M.S.: *The digital future in process automation can be implemented cost-effectively and reliably using AS-Interface technology. This fact is crucial since process automation was always considered rather conservative compared to factory automation.*

The main argument for using the ASi-technology was cost savings for design and installation. Digitalization topics in the context of Industry 4.0 tended to be exceptions. This has changed. In the meantime, Industry 4.0 and the related digitalization found its way into process technology and has become a major topic.

ASi-5 technology and its performance features ideally support digitalization. ASi-5 perfectly combines and precisely

implements data collection and modern communication. There is a distinction between device digitalization and communication digitalization. For years, devices have become increasingly intelligent and, therefore, are transmitting more data. The communication channel has often been the bottleneck. Accordingly, ASi-5 technology was created as a standard that enables Industry 4.0 in process automation.

ASi-5 offers many new capabilities. What are the most important for you?

M.S.: *ASi-5 technology offers two main advantages for GEMU and its customers.*



Firstly, adopting simple and reliable wiring can reduce costs significantly. The commonly known yellow two-conductor flat cable for data and energy transmission, protected against polarity reversal, as well as the efficient and safe connection using piercing technology, is the foundation of AS-Interface technology. The convenient, robust wiring without connectors or pre-assembled cable is well-known to us and our customers. It has contributed significantly to the global success of AS-Interface and enables easy connection to already existing AS-Interface technology.

Secondly, on the automation side, ASi-5 enables significantly faster transmission of large amounts of data.

ASi-5 technology's extensive data width permits the implementation of the increased device requirements related to digitalization, enabling the complete integration of devices at the field level of a high-performance network. On the software side, ASi-5 offers functions such as automatic device detection, an overview of all devices in the system, and supported differentiated diagnostics options. Simple wiring and installation remain an advantage.

ASi-5 technology can easily be combined with Ethernet-based systems.

This combination ensures continuous communication up to the specific field device at the first level of automation.

ASi: ASi-5 enables receiving considerably more data from your devices. How do you use this data?

M.S.: *Data acquisition and collection are driven by Industry 4.0 and are now on everyone's mind. Industry 4.0 promises companies significant potential through digitalizing and linking of their value-added processes. In addition to increased flexibility and efficiency, constant availability and process optimization are geared to get the most out of plants and to ensure competitiveness. Ultimately, the goal is to generate added value for the customer, such as precise data analysis, which enables predictive maintenance. This allows maintenance intervals to be planned more precisely or to reduce them, significantly increasing plant availability. The foundation of data analysis is condition monitoring data provided by intelligent devices. In our devices, this integrated sensor technology records physical values such as pressure, temperature, humidity, vibrations, etc.*

„ASi-5 achieves a significant performance increase while retaining the ingenious connecting technology – a substantial advantage in process automation.“

Furthermore, energy efficiency (keyword ISO 50001) and the resulting topic of energy management become increasingly more relevant. Status data of various devices greatly assist in the understanding of energy influences and support the consistent increase of energy efficiency in the respective plant. Therefore, a continuous dataflow of large quantities at high speed is essential. This is where ASi-5 shines with its consistent and fast transmission of large amounts of data. ASi-5 technology is the first choice, both technologically and economically.

ASi: What other possibilities does the new ASi-5 technology provide?

***M.S.:** For years, we successfully used the well-established AS-Interface system for simple open/close functions. Devices performing these functions form the most significant part of valve technology in a processing plant. More complex devices such as position and process controllers and the entire measurement technology were conventio-*

nally connected to the control system via 4-20mA signals or more complex and cost-intensive bus systems. Now, ASi-5 technology with its impressive performance spectrum – the commonly known simple wiring, high data width with short cycle times – is joining the game. ASi-5 not only presents an upgrade for existing AS-Interface products but also opens up new product varieties, such as position and process controllers, for example, for measuring devices. This provides our customers with a more extensive product portfolio and, therefore, a wider use of GEMU products with an AS-Interface interface. In addition, AS-Interface technology is an attractive foundation for other device manufacturers.

ASi: Overall, there are many advantages for your customers. How important is ASi-5 for GEMU?

***M.S.:** ASi-5 technology is crucial to GEMU. It forms the foundation of our consistent platform strategy. Through its simplicity and high performance,*

AS-Interface is the ideal communication system for the majority of our products and is therefore used as the standard device interface. We integrated ASi-5 technology and its impressive technological and economic features into our platform and have begun converting existing products. We are currently working on additional devices with ASi-5 technology.

ASi: Mr. Schifferdecker, thank you for this interview.

Company profile: GEMÜ Gebr. Müller Apparatebau GmbH & Co.

GEMU group develops and manufactures valve, measuring, and control systems for liquids, vapors, and gases. The company is the global leader in sterile process solutions.

Founded in 1964, the globally oriented, independent family-owned company has, since 2011, been managed in its second generation by Gerd Müller as managing partner with his cousin Stephan Müller.

In 2022, GEMU group achieved 530 million euros in sales and employed more than 2,400 employees worldwide, including more than 1,300 in Germany.

There are six production sites: Germany, Switzerland, and France, as well as China, Brazil, and the US.

Global sales are handled by 27 subsidiaries and coordinated in Germany. Through a dense network of distributors, GEMU is active in more than 50 countries on all continents.

For more information, visit www.gemu-group.com.

