Zeta Automation
Automation for pharma industry
About Zeta Automation

Zeta Automation GmbH, based in Freising, Germany, is an associate of Zeta Holding GmbH based in Lieboch in Austria.

Zeta Automation GmbH offers ready-to-use automation solutions for products, systems and complete plants in process engineering with liquid media. Zeta Automation has been active in the pharmaceutical, biotechnology and food industries for many years and has operated in European countries and neighbouring regions.

The scope of the automated solutions consists of:

- Unit control
- Process control systems (PCS) for plants
- SCADA systems
- Distributed control systems (DCS)
- Batch management / MES
- Data backup systems
- Remote maintenance

For such automated systems, state of the art software tools by well known producers or dedicated systems named by customers are used.

Our scope of services includes:

- Preparation of specifications
- Design and engineering of hardware and software
- Supply of hardware
- On site installation
- Test and Commissioning
- Qualification
- Customer training

Zeta Automation delivers turn-key automation systems for:

- Modernisation (upgrades),
- Expansion and
- New plants.
Health is the most important thing in the world.

**Automation technology for liquid processes**

Examples of these sophisticated process automation solutions for the pharmaceutical industry and for biotechnology are:
- Upstream Processing (USP)
- Downstream Processing (DSP)
- Buffer and media preparation systems
- Formulation systems
- Process utilities supply and disposal
- Freeze / thaw systems
- CIP / SIP systems

**Zeta Automation’s fields of action are:**
- Pharmaceutical industry
- Biotechnology
- Food / Dairy industry

For these industrial sectors, Zeta offers „customized“ automation solutions.

Examples of the varied automation solutions in the production processes in the food industry / dairies are:
- Raw milk reception
- Tank farms
- Mixing and Dispensing
- Batch management, standardisation
- Yoghurt and dessert production
- UHT systems
- CIP / SIP systems

The allure of milk comes from its variety.
Pharma and biotechnology – keep liquid in motion

Pharma and biotechnology require highly sophisticated standard procedures, which comply with the requirements of the regulated industry. It is our benchmark to have established the highest standard in this industry as our working standard. Our automation projects basically are designed to comply with the relevant regulations, such as GAMP 5 or 21 CFR Part 11.

The automation concepts are based on standards as ANSI / ISA S88. The compliance of the module structure is reflected by the design specifications and the software as well as by our qualification concept.

Due to our strict application of clear structures we finish projects to the highest quality, with reliable adherence to deadlines and calculated costs.

Zeta Automation creates automation solutions for the whole process chain of modern production plants – from upstream to downstream, from single user systems (skid systems) to complex process control systems. The automation of process media preparation such as buffers or ultrapure water (PW, WFI) is included in our scope along with the cleaning (CIP) or sterilising (SIP) of the plants.
Process automation

The varied processes of production plants are individually designed for each product. The automation of these processes therefore is just as varied and complex.

The automation system are made up of
- Server platforms (batch control, data bases)
- SCADA systems
- Networks
- PLC controls
- Peripheral equipment

Tools of various manufacturers are used for process control systems (PCS), SCADA systems and PLC controls. Networks are implemented as loop or star configuration, optionally using fibre optic cable technology. Database connections to enterprise servers can of course be established optionally.
Technologies, products and services

Products and services implemented by Zeta Automation are designed to the client demands.

Technologies and products:

We offer „custom design“ automation concepts for the control of
- Stand alone systems
- Multi unit control systems
- Process control systems (PCS)

For the implementation we offer hardware and software including
- Switch gear and electronic assembly
- Control and server cabinets
- Networks
- Operator stations (HMI)

Services:

The execution of a project requires the complete range of our engineering services.

Zeta Automation structures these in the following way:

- Design engineering
  - Hardware Design Specification (HDS)
  - Functional Design Specification (FDS)
  - Software Design Specification (SDS)
- Hardware engineering
- Software engineering
- Testing (Integration test, FAT, SAT, IQ, OQ)
Engineering

**Hardware engineering**

The hardware engineering of the automation system includes power components, control systems and field equipment such as pumps, valves and measuring devices.

**Focus on Service**

Hardware engineering is not limited to design and planning. Moreover, it’s the base for life cycle management of the complete automated system.

Latest CAE tools are used for fully transparent and detailed documentation of all system components which enables prospective maintenance.

**Software engineering**

Software engineering starts with the conception of the system and its components. Criteria for the selection of the system may be compatibility to already existing automation system or the availability of system know how at the customers site. In the end, the application software always is fully customized but based on our pre-qualified standard module libraries.

The architecture of the application software is aligned on the defined functions of ANSI / ISA 88. Frequently used systems include, among others, PCS 7, WinCC, WinCC flexible, ArchestrA / InTouch, iFix, DeltaV, Experion PKS and Step7.

Due to detailed knowledge of many different automation systems, Zeta Automation is completely prepared to carry out modernisation and expansion for its clients. Often older legacy systems which are already installed on site can be integrated in the automation concepts so that these may be used in or through new system controls.
These additional requirements of a process control system arise from the integration of MES functions which are increasingly present on the SCADA level of modern systems. This gives the manufacturing department the opportunity on the SCADA level to guarantee the traceability of production, such as the materials used (input and output) and the mapping of data (e.g. temperature diagrams) in sections of the system.

For the optimisation and increase of plant efficiency, the reduction of ancillary and down time is important. It is required for the maintenance and update of the plant that the necessary data are transparent and available and that there are tools for planning production and set-up.

Furthermore, our clients increasingly expect dialogue between SCADA and the ERP system and a mutual exchange of IT information. The primary ERP system offers product data on components of each batch quantity. The process system registers of its consumption, batch mapping and information on the completed product. This dialogue between the data base of the control system and the ERP system can arise without involvement of an additional MES system.

**With the evolution system, Zeta Automation offers clients software modules for**

- Life cycle management of components
- Traceability of batches and production
- Archiving the data of participating units
- Schedulers for production and CIP
- Documentation for production and quality control

as part of the control system.
To meet the requirements of production system automation, Zeta Automation has developed the operator and control concept (process control software) *evolution*.

The program modules are made by software tools Step7, WinCC and the WinCC integrated databank MS SQL. The development of the concept is aimed at an open source, functional solution for the automated system.

The visualisation includes the complete production lines and is built up by modules with individual aligned packages. In order to execute the different tasks with various levels of complexity, the automated solutions come as

- **Stand alone unit controls** – for the operation and control of one section of the facility or one unit
- **Multi-unit controls** – for the operation and control of several parts of the facility
- **Client- / Server configuration** – for complete facilities
- **Redundant Client- / Server configuration** – for whole systems with redundant data management.

The hardware for the components used in *evolution* is structured in different levels. The linking takes place with network and field bus systems, even in fibre optic cable technology.

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**evolution comprises of**

- Operation of systems / process stages
- Visual displays of operational parameters, operational status
- Weighing and dispensing
- Route control
- Batch management
- Batch logging
- Production traceability
- Life cycle management
- Adjustment of control loops and set values
- Batch scheduler
The qualified software modules from the Zeta standard library are used to execute automation projects. If desired, modules from clients’ or vendors’ libraries can, of course, also be used. The Zeta standard modules are compiled in many languages and offer the operator a visual display in his own language.

All systems are internet compatible; this offers the client the advantage of our remote maintenance, if desired. Pre-configured workstations are available in our factory to establish direct online dialogue with the system if necessary and help the operator quickly in case of disturbance.
Company history and mission statement

Zeta Automation was founded in 1997 as ARCHYTAS Automation by managing director Dipl.-Ing. Norbert Pechstein and Prof. Hermann Heiler, who lectures at the Weihenstephan University of Applied Sciences in Freising, Germany.

Today Zeta Automation belongs to the Zeta group and is a highly valued company in the market for the automation of production systems for the pharma- and biotechnology and food industries.

Values
- Long-term cooperation with clients, suppliers and partners
- Environmental care
- Social environment and economic protection of our employees
- Guarantee and transparent presentation of corporate success
- Fair treatment of all employees in the individual companies, from different levels in the company hierarchies and with one another.

Mission
- We provide quality work
- We are solution focussed
- We are reliable and uncomplicated
- We work efficiently with:
  - highly technical competency
  - an universal project structure
  - high personal commitment
- We avoid interfaces through overlapping performances within the project
- We offer technical process and automation specialists
- We endeavour to have a long term partnership with our clients
As a technology supplier of the biotechnological and pharmaceutical industry, we design, manufacture and install customised solutions for renowned companies around the world.

- Biopharmaceutical systems
- Preparation and formulation systems
- CIP/SIP- and media systems
- Process equipment
- Sterile plant installation
- Automation solutions
- Agitation and mixing technology
- Freeze & thaw systems

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