



#### Engineering

- Project Management
- CAD/CAE Electrical Planning
- System Design & Layouts
- Analysis & Concept Development
- Consulting
- Safety Concepts

#### Control Cabinet Construction

- Setup & Wiring
- Testing & Certification
- Prototype Construction, Individual/Variant/Series Production
- Machining
- Assembly

#### Machine Controls

- Programming
- Motion / Drive Systems
- Networks & Interfaces
- Integrated Safety
- Electronic Development

#### Visualisation & Software

- Application Development
- Production Control Systems, MES
- Database Applications
- Mobile & Web Applications

#### Network Technology

- Network Interfaces & Services
- Client / Server Applications
- Hardware Setup
- Virtualisation
- Backup & Recovery Solutions
- Data Security

#### Retrofit

- Customised Solutions
- International Installations
- Software Migration Solutions

#### Support

- Training
- Online & Telephone Support
- Commissioning
- Maintenance & Repair

#### Trade

- PE Rectifiers
- Subsidiary in Thailand
- Sales Network

# Our services at a glance

Reliable planning is the best basis for the economic implementation of an installation or application and its subsequent cost-effective operation and maintenance. We develop concepts together with our customers that are designed with the targeted application in mind. We are hugely flexible with regard to prototype and single piece construction as well as series production on 1500m<sup>2</sup> of floor space. Short delivery times and first-class quality are our goals and our ISO-certified processes help us achieve them continuously.

#### Electrical Planning

We develop the best possible solution for every application and every environment using state-of-the-art CAD and CAE systems. We can readily accommodate customised adjustments to layout and presentation. A detailed bill of materials as well as wiring and terminal diagrams are a matter of course.

#### Schematics

We also offer fair draughting of customer drawings in addition to electrical planning. Whether electric, hydraulic or pneumatic circuits: our drafters will be pleased to offer their skills.

#### Process Planning

New equipment brings changes to operations. Work flow and process flow need to be scrutinised in detail to optimise the interaction between people and machines. The result may turn out to be a solution that can be covered by a different technology (such as RFID). An ergonomically designed workplace or networked production control systems also make it possible to optimise interaction. Vonesco has successfully supported many companies through an uncomplicated approach and years of know-how in this field.

#### Prototypes

A spark ignites an idea that is waiting to be realised. We provide the development of hardware and software prototypes. From wire harnesses to special machine construction. You benefit from direct communication and uncomplicated implementation in our company thanks to our lean structure. We often implement preparations for series production with partners at home and abroad.

#### Standards

As an internationally active company, we are obligated to abide by all common standards in electrical manufacturing. Our employees are continuously trained with regard to the latest standards.



A handful of skilled and motivated experts in our construction department have everything you need. We attach great importance to a well-conceived, future-oriented design concept and high-quality implementation. Our control cabinets consist exclusively of high-quality materials from reputable manufacturers. As specialists for single-unit production and small series, we set great store by comprehensive performance testing of every system function.

**Structure** The structural design of a control system is the foundation for future-oriented system operation. We have a handful of tried-and-tested, flexible modular systems at our disposal that enable us to develop a basic structure for any application quickly and efficiently.

**Mounting & Wiring** Only high-quality components from reputable manufacturers are used in our control cabinets. Comprehensible, end-to-end identification from component to terminal is the key to efficient system maintenance in the future. Our control cabinets are wired by our trained electrical engineers in accordance with wiring diagrams. Comprehensively labelled and correctly dimensioned wiring is the neural system of a control setup. And, of course, completely environmentally friendly in accordance with current standards (SN/EN, UL).

**Testing** We spend an above-average amount of time on testing to ensure delivery of a fully functional system. A thorough check of every control circuit including a detailed test report is a matter of course for every assignment. We also offer entire simulation setups for more complex control systems to simulate machine operation prior to commissioning.

**Small Series Production** Our facility in Steinmaur is well equipped for handling contract orders for small series productions up to a certain batch size. Material provided by customers is treated with all due care and can be stored on call at our facility. Many customers of long-standing entrust us with the production of their small series and bank on Vonesco's proven quality. Our subsidiary in Thailand is an ideal and reliable partner for large series.

**Assembly** Our cable assembly workshop realises customer-specific requirements that standard solutions available on the market cannot satisfy. Wire harnesses are quick to install and can be produced from stock for small series.

## Versatile Control Cabinet Construction

Vonesco knows how to integrate technological change in its control system concepts. The principle of “Organic Control Systems” forms the basis for planning and implementing well-conceived, holistic control systems. System control is at the heart of the digital age: it no longer consists of simply regulating and controlling individual components, but works together with hardware and software to create an intelligent system that communicates cross-system processes and, when possible, actively intervenes in the interest of self-optimisation.

**Touch of Intelligence** The essence of a control system is a well-conceived concept based on extensive know-how and a healthy portion of inquisitiveness for the new. Current technology and trends must flow continuously into the development process, existing knowledge must be expanded and the latest developer tools mastered. Sustainable programming is the cornerstone of an extendible system capable of adaptation to an ever faster-changing market. We obtain our long-standing know-how from various areas of industry and feed it into every project.

**Functional Safety** Special control systems that fulfil requirements up to the highest SIL level are used wherever the safety of humans is the main focus. These sophisticated applications demand a clear understanding of safety and are designed and implemented with all due care. Our team consists of experienced process experts and employees well versed in the applicable standards who competently implement these special solutions.

**Communication** We can provide a wide variety of data interfaces and protocols for field communication depending on the application in hand. Communication can, for instance, take place via Ethernet/IP, ControlNet, Profibus/Net, or Modbus. OPC is used for communicating with visualisation technology or other superordinate systems.

**Additionally** A professional handover of the project is an essential element of Vonesco’s philosophy. To this end, we carry out FATs and SATs with our customers, assist with computer system validation (CSV) and train personnel (e.g. external commissioning staff) with specific regard to technical finesse. Benefit from our know-how. We are no strangers to agile software development and GAMP and utilise them where required.

# Reliable Machine Control Systems

Vonesco is renowned for inventive designs and user-friendliness. We use the latest tools to create our applications, be they for local machine operation or entire control technology systems. We exclusively design sustainable solutions that can be expanded over time and therefore create long-term added value.

**Sound Concepts** Well-conceived concepts, consultations with customers and a regular exchange guarantee that every function of the production system is available for use when it is taken into operation. We exclusively design sustainable solutions that can be expanded over time and therefore create long-term added value. Our key areas of expertise are:

- Machine control visualisation
- Complex process control visualisation
- Alarming, trending and recording by way of database-supported applications
- Production control systems at production level

**Realisation** Continuous evaluation and close cooperation with our partners enable Vonesco to be constantly in touch with the latest trends and utilise state-of-the-art technology. Interaction between human and machine is an integral part of evolution.

**Custom Made** We can cater for virtually any specific customer request thanks to versatile development and design tools (such as Delphi, Flash, 3DStudio, FactoryTalk and various databases).

**ERP System TQRTraveller** The TQR Traveller from Vonesco is designed specifically for small to medium-sized plating companies to meet their needs with regard to planning, control and quality management. Ease of operation and a clear layout were the guiding principles of development. The Traveller adapts quickly and reliably to any production environment thanks to its simple installation and flexible configuration. Every step from incoming goods to production monitoring and through to shipping is comprehensively documented.

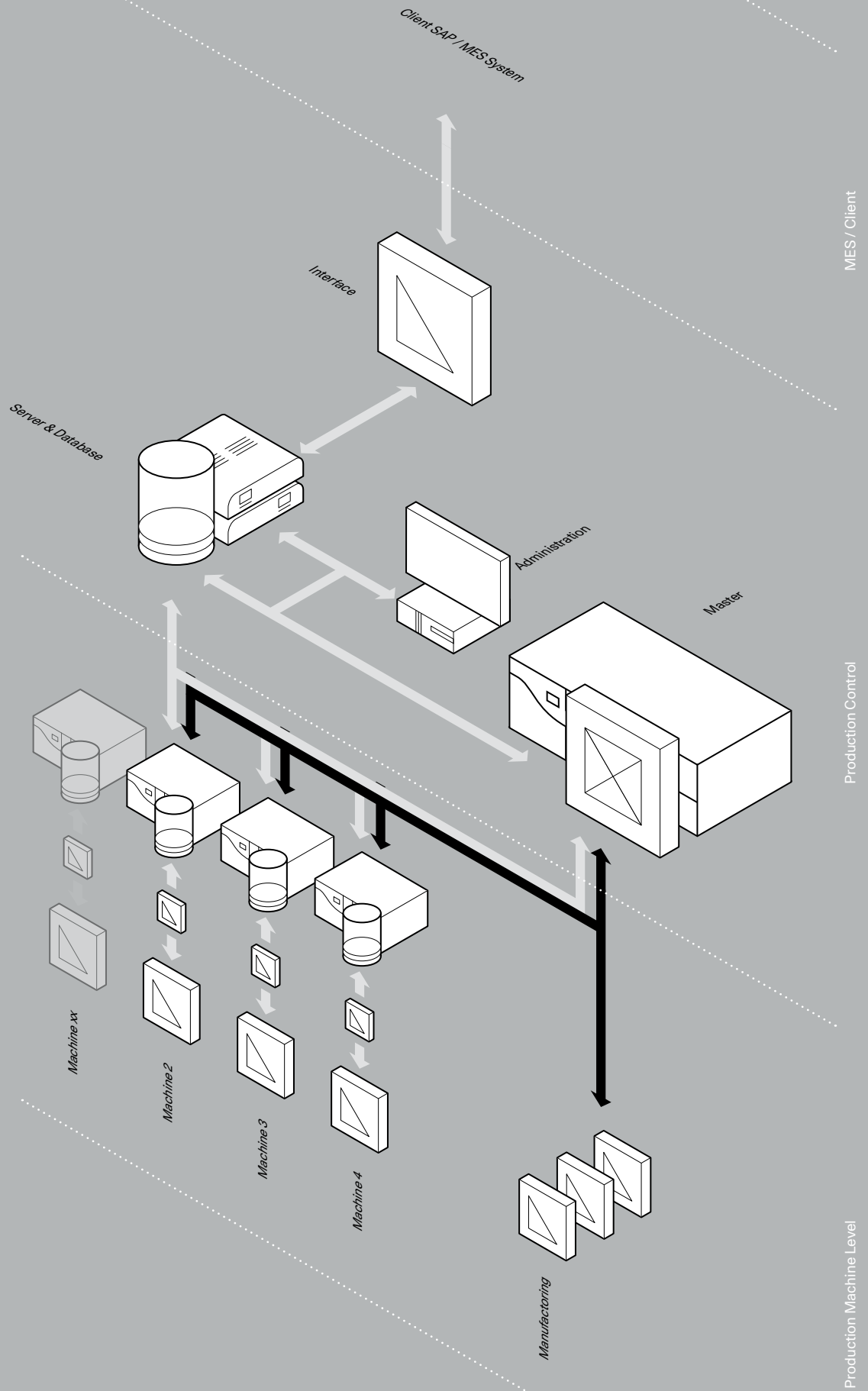
**Web & Mobile Applications** Cross-platform applications for iOS, Android and Windows Mobile make it possible for us to communicate directly with the machine. Apps restricted to a physical zone through highly encrypted communication protocols or that connect to the system via web-based relay servers integrate the machine in the overall value-adding chain. Vonesco offers various solutions for improving the dialogue with the machine.

## Intuitive Visualisation

The processes of the fourth industrial revolution are networked in the **Smart Factory**. They react to one another and ensure the continuous optimisation of production. Systems calculate the required materials based on orders **Supply Chain Networks**; automatically allocate resources **ERP**; collect production parameters for analysis **Analytics**; inform and react in real time to ambient adjustments. As soon as quality-relevant data from QM processes is available, it can be fed back into production to help save material costs, for instance. **MES** systems like these are already in use around the world and are spearheading the trend towards the so-called Smart Factory. However, the gateway to the world of **I4.0** and the Industrial Internet of Things **IIoT** is opened as soon as the product informs the systems and equipment how, when and with which materials it should be produced. The “gene code” is contained in the part to be produced, the end product. Intelligent sensor systems **RFID**, physical recognition **Vision** and broad-based IT know-how (server technologies/operating systems/network technology/security) all play major roles in this regard.

All of these points of contact need **interfaces**. Be it inside the system or across systems, e.g. for warehouse management and/or shipping, to make things more transparent for every sales partner.

## Broadband Information Technology





**Networks** Today, machines and humans are communicating more than ever before. Vonesco banks – wherever possible and expedient – on networking machine components as it enables them to make day-to-day production easier and more efficient. From concept to realisation through to construction: you will have a competent team at your side as a living interface between industry and IT.

**Database Applications** Our applications are based on the use of relational databases. We can fall back on a number of projects that were implemented with Oracle or Interbase. We see ourselves as specialists for database design, installation, maintenance and backup in connection with industrial applications.

**Interfaces** The following interfaces have already been realised should the production system be required to enable the exchange of data with a superordinate system:

- SAP, ABACUS
- REST – Services
- File-based exchange (.txt, .csv, etc.)
- Connection to other databases (MS-SQL, Oracle, MySQL, Interbase and many others)

**Hardware & Virtualisation** As partners of HP and VMware, we can unite the best of both worlds. We design the ideal combination of PCs and servers and take them into operation in dependence on project requirements.

**Data Security** We also provide support for customised IT infrastructure solutions to customers who do not have an in-house IT team. Support services range from network design and implementation to firewalls and the evaluation of security solutions aimed at making the production network more secure.

**Production Control Systems** Custom-made production control systems for production order management, control and monitoring are valuable automation tools. The central exchange of data at IT level between customer systems and production is channelled through reliable interfaces. Central to this concept is our core principle of creating a dialogue within the operating environment in which all processes are integrated. Vonesco has already successfully installed solutions of this nature for many long-standing customers. We design and implement everything from start to finish so that the customer has a single contact partner for every issue of relevance to production.

Why not use a small investment to create a lot of added value? Many older systems and production machines all over the world were designed and procured for the markets as they were at the time. **The current market and the products it demands are constantly changing, and with this the systems.** It is usually necessary to acquire a new machine or plant to manufacture these goods. It is, however, frequently the case that the system's hardware is generally well maintained and in keeping with the state of technology. The problem is often due to the control system and outdated components that are often no longer available. The risk of a prolonged outage is significant.

#### Retrofit

Vonesco therefore specialises in converting equipment and control systems all over the world. Vonesco can provide an end-to-end conversion package including planning, control cabinet construction, programming, delivery on location, conversion, commissioning and handover. Equipment and control system conversion goes hand in hand with many benefits:

- Minimisation of the risk of a system outage
- Use of the latest control technology and control components
- Highly flexible control functions to optimise throughput and production
- Small investment equals much added value
- Improved automation, traceability and inclusion in the quality management system
- System maintenance

#### Installation

We are often able to create other, as yet unrealised, added value during conversion alongside implementing the demands on the control system. Vonesco can provide the customer with comprehensive advice to lead the equipment and control system into the next generation.

A conversion can comprise many different areas:

- Replacement of the current control system / replacement of the entire control system cabinet
- Expansion of the system or its technology / integration of new processes in the system
- Replacement of system components / sensors / wiring
- Integration of an ERP system / QA system / traceability system / RFID

#### Responsibility

Machine standstill time and conversion time are extremely important aspects of any conversion. We give this aspect the consideration it deserves through our long-standing experience in equipment and system conversion and are well aware that standstill times must be kept as low as possible. Our experienced specialists plan the conversion down to the smallest detail together with the customer to enable the shortest possible conversion times. Vonesco adopts responsibility for conversions planned in great detail to guarantee the start of production on the scheduled date.

# New Life

Plant control systems are often characterised by their degree of customisation – the majority are developed for a specific process. The choice of control system supplier therefore demands considerable consideration as it can be the start of a long-standing relationship.

In this day and age, it is essential to adapt to continuously changing markets and technology. It is hugely important to minimise the time allocated to maintenance windows yet still avoid production down times. That is why control system support and maintenance are so important. The control system is a companion for life.

**Installations** The best options for optimum support need to be considered early on during installation. Vonesco can make a valuable contribution by utilising the latest proven technology during installation. Our technicians are responsible for wiring and then checking the system and its associated network.

**Commissioning** Our team accompanies the customer during commissioning and optimises the processes along the way. Commissioning also includes acceptance testing and test reports that are drawn up and shared with the customer. Our commissioning team has years of experience and carries out commissioning projects in many different fields around the world.

**Remote Maintenance** Machine and equipment maintenance via a remote system is now indispensable. Vonesco therefore utilises the latest tools to develop a highly efficient remote maintenance system in cooperation with the customer. Our remote maintenance team takes care of any problems and adjustment requests around the clock.

**Training** Using and operating a control system correctly is an important aspect. We therefore offer a range of training modules for our products. These are available in our training facilities in Steinmaur or Bangkok, but also directly on site at the customer's premises.

**Repair & Service** Our service and repair department takes care of every aspect of system repair and service work. Various service models are available, as well as service agreements that we can recommend to customers to ensure every disruption is handled quickly and efficiently.

# Support

# Your partner for complex control systems

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