Based on Azbil Corporation’s concept of human-centered automation, our Harmonas-DEO™ process monitoring and control system, in addition to offering reliable and proven automatic control, supports efficient situation recognition, swift decision-making and correct operation by all personnel working in all sections of the manufacturing site in order to maximize manufacturing value.

We Maximize the Value of Your Manufacturing Site through Human-Centered Automation.

In addition to achieving safe and stable plant control by virtue of its high reliability, the Harmonas-DEO process control system combines the advantages of convenient open architecture, compatibility with other systems, and decision-making support.

**Versatility**
Harmonas-DEO can be configured to serve in a wide range of applications, whether small- or large-scale.

- Pharmaceuticals
- Fine chemicals
- Food & beverages
- Metals & minerals
- Semiconductors (clean room control)
- Oil & gas plants
- Fuel supply systems
- Utility & boiler control
- Garbage incineration
- District cooling systems
- Water/wastewater treatment
- Automated assembly operations
- Automobile & related plants
A Scalable System that Allows Real-Time Tracking of Operation Status

Harmonas-DEO is a flexible system that can adapt to the scale of the manufacturing site and process, from the smallest configurations, consisting mainly of PLCs, to the largest, consisting of multiple process controllers.

- **Human-Centered HMI**
  - Through an HMI that can indicate the constantly changing status of the process, we facilitate enhanced situation recognition and support quick judgment/understanding by personnel involved in operation, and offer an operation monitoring environment (HCI: Human-Centered Interface) which guides operators towards correct operation.

- **Screen layouts that match operation types**
  - By recording and calling up trend screens or group screens related to a graphical screen as a set, specific information can immediately be deployed to specific locations. In this way, reliance on screen display format to recognize situations, as well as delay in making judgments, can be avoided.

- **DOPC™ III Process Controller**
  - A triple modular redundancy architecture is used for the CPUs of DOPC™ III. The redundant architecture adopts the “2 out of 3” standard used in systems requiring a high degree of reliability. Calculations are performed by 3 constantly synchronized CPUs, and by outputting after comparing results, the reliability of the output data is enhanced. Also, tripling of the CPU modules allows automatic recovery, except in the case of a permanent fault. The parallel redundancy system allows seamless switchover, without the unavoidable processing time required by standby redundancy systems when switching from the execution device to the standby device.

- **Digital Field Support**
  - Digital communication with intelligent field equipment and information-utilizing applications provide new value in the course of maintenance work. Information from field equipment can also be examined through the HMI.
  - Through the constant monitoring of field equipment that digital communication facilitates, small irregularities that previously went unrecognized can be identified.
We offer various applications linked to Harmonas-DEO that support manufacturing tasks, from production to information analysis and company-wide information integration.

### Applications

**Task Support from a Full Range of Applications**

**Production Information Portal**
- **Manufacturing Information Briefing™**
  - Enables the user to assemble, in the necessary form and in an easily readable layout, manufacturing information that is distributed among various systems and databases. Supports quick decision-making for each relevant task through site-level information gathering and company-wide information integration.

**Relational Production Information Control System**
- **PREXION™**
  - Collects and stores process and manufacturing data from the various systems within a plant or factory. Clearly presents operation information in an understandable way and supports production management tasks through its statistical analysis functions.

**Device Management System**
- **InnovativeField Organizer™**
  - Constantly monitors the condition of field equipment and brings to light the symptoms of potential equipment failure. Facilitates safe, stable plant operation and greater efficiency in maintenance work.

**Digital Shift-Change Log and Knowledge Base**
- **OperationKnowledgeBase™**
  - Computerizes management of the progress, importance and chronology of operations and events that previously were managed using the medium of paper. In addition to preventing tasks from being omitted or forgotten in the course of everyday work, this system supports faster communication of information at a company-wide level.

**Alarm and Event Analysis Software**
- **Detects causes of failure based on historical event data without generating a process model in the tool. By analyzing and assessing the soundness of alarm systems, it facilitates the introduction of improvements in operation.**

**Operation Support System**
- **Knowledge Power™**
  - Enables the user to assemble, in the necessary form and in an easily readable layout, manufacturing information that is distributed among various systems and databases. Supports quick decision-making for each relevant task through site-level information gathering and company-wide information integration.

**Advanced Process Control Solutions**
- **SORTIA™ Series**
  - Using soft sensors and multivariate models, prediction/control, etc., and fusing research on process control with experience on the factory floor, this system facilitates improvements in the stability, optimization and profitability of equipment used in sequenced processes.

**Batch Management Package**
- **BatchSuite™**
  - A package conforming to international batch standards ISA-S88.01 and ISA-950.01, and Japanese standard JIS C1807. Facilitates batch process review and execution management.

**Energy Management and Analysis System**
- **EneSCOPE™**
  - Information about energy consumption, CO2 emissions and cost, etc., is summarized and made highly visible and understandable at a company-wide level on the Web. Supports information sharing and education regarding energy-saving, and facilitates analysis of energy usage using accumulated data.
Enhancing the Productivity of Control System Architecture with a High-Efficiency Engineering Environment

Offeres an environment for the efficient creation, debugging and control simulation of graphics, control logic, sequence programs, etc.

Control Application Builder & Library

Control Application Builder is an application for designing the control logic of systems. Various input/output and adjustment control points are provided in the form of separate parts, and control loops can be created simply by connecting the parts on the screen. Since the resulting control flowcharts indicate relationships using arrow connections—including parts and signal flow—they can be used without alteration as instrumentation flowcharts.

Soft Controller Simulator & Online Debugger

The Soft Controller Simulator offers the ability to create virtual process controllers on ordinary, general-purpose PCs. Using the Online Debugger, the input/output signal flows and calculated values on flowcharts created with Control Application Builder can be checked. Since the debugger allows PID tuning, etc. to be performed from the level of individual parts, debugging can be carried out in an intuitive manner while looking at the flowchart.

VIEW Client Builder

This is a tool for creating graphics screens. The equipment and instrumentation of which plants and factories consist—such as various types of valves, pumps and tanks—are provided as standard parts. Screens can be created simply by laying out the parts, indicating properties with different colors, and setting up conditions and information at the relevant points. Creation of user-defined parts and utilization of scripts is also possible, allowing the design of operation monitoring screens that meet various requirements.

Recipe Loader

This tool supports data creation and download. In addition to the HMI, data editing can also be performed in Excel, making data creation and alteration easy to carry out. Switching between recipes is easy, since they can be selected in the loader and the corresponding data downloaded into the controller in one operation.
In response to various customer needs, we offer a wide range of services for different stages of the product life cycle, from implementation and operation through to eventual decommissioning.

### Implementation Support

**New installation work/restructuring work**
From design through to the start of operation, we perform installation of new equipment or restructuring of existing equipment with thorough safety and quality management, using an integrated organizational structure that includes cooperating companies.

**Environment improvement work**
We perform environment improvement work based on the results of a diagnosis of the installation environment that surrounds the system’s equipment.

**Instrumentation engineering support**
Our engineers carry out your required instrumentation engineering, preparing detailed control programs, custom applications, and graphics.

**Test operation support**
Our highly experienced technicians support the smooth start-up of your instrumentation system.

**Instrument panel room design service**
Based on ISO 11064, the flow of people’s movements, monitor and operation desk layouts, and desk designs for easy operation, etc., we offer design of an instrument panel room space that is easy to work in.

### Operation and Maintenance Support

**Maintenance data book**
On delivery, we include a data book giving all the information necessary for maintaining and updating the system. In addition to our contact details for support and information on the composition of the system, etc., this data book also contains inspection histories and version update histories, and is utilized in the maintenance plan.

**Periodic inspections**
In order to prevent problems from occurring, system and equipment inspections and adjustments are implemented to maintain or restore system reliability.

**Hard disk backup service**
All hard disk data is stored on other media. This allows smooth recovery to be performed if a crash occurs.

**No oxygen No moisture packs**
These packs provide optimal storage conditions, protecting valuable replacement parts from oxygen, moisture and corrosive gases.

**Virus diagnosis service**
We verify the soundness of the system by searching for the presence of virus infections in applicable equipment, and propose responses and measures in the case of a virus being detected.

### Emergency Maintenance Support

**Service hotline**
We have a free-dial emergency contact line, and can respond to urgent problems 24 hours a day, 365 days a year.

**Emergency service**
Technicians are dispatched upon receipt of emergency callout requests from customers. Our specialized technicians will work to repair the fault.

**Parts management**
We store the necessary replacement parts instead of the customer, our high-level quality control ensuring that we are always prepared for emergencies.

### Improvement Support

**Event analysis**
Based on event information accumulated in the DCS, we organize awareness of qualitatively apprehended phenomena into a quantitative form, expose the inherent issues and propose corresponding measures for improvement.

**DCS deterioration diagnosis service**
In accordance with the installation environment and number of years of operation, we comprehensively examine and measure the state of deterioration of the system, and propose the best maintenance plan for maintaining its reliability and extending its life.

**Installation environment diagnosis service**
We measure and assess six environmental factors pertaining to the installation environment, determining the effects on the system and proposing corresponding measures. We then apply these results to the future long-term maintenance plan and propose an effective maintenance regime.