

## PROCESS AND NETWORK CONTROL TECHNOLOGY & IT





# FIPRO+

## BUNDLED KNOW-HOW

- FIPRO+ merges our services for control and automation technology as well as higher-level IT solutions for:
  - automation
  - control systems
  - optimized process and network management
  - optimized plant management
  - management information systems.
- Under FIPRO+ we offer you a full range of services, from counseling through studies, conceptual engineering, planning and project management up to commissioning.
- Through FIPRO+ we make available to you our process and network know-how combined with our broad-based experience in IT.
- FIPRO+ is the services package that offers you all-inclusive project handling, so guaranteeing maximum benefits.



## ABOUT OUR ENTERPRISE

### INDEPENDENT, INTERDISCIPLINARY, CAPABLE

With its staff strength of some 1000, Fichtner is the biggest independent engineering and consultancy enterprise in Germany. Global experience, broad-based expertise and closeness to clients provide a sound basis for top-class consultancy services.

Thanks to the combination of our independence of vendors on the supply and manufacturing side and our experience in systems analysis, conceptual engineering, planning, project execution, detail engineering and IT consultancy, we can offer you a complete and objective services package. By bundling our expertise, we provide you with solutions that are future-proof. And we provide you with back-up for as long as you wish – from counseling through studies, conceptual engineering, planning and project management up to commissioning.

As the biggest independent consultancy and engineering enterprise in Germany, accredited under ISO 9001, with experience in the energy and infrastructure services sectors accumulated over decades and complemented by expertise in techniques and methodology through all project phases, we guarantee you maximum efficiency and the highest standards of quality in the execution of your tasks.



## TECHNOLOGY TODAY

Competition in today's deregulated and liberalized markets with the resulting pressure on costs makes it essential that potentials for optimization and cost cutting are exploited to the full when operating facilities and networks. But it is not enough just to make piecemeal upgrades: maximum cost savings can only be achieved if the system is examined and optimized in its entirety.

Taking as a starting point a modern control system, today complete solutions can be engineered, ranging from switching of individual circuit-breakers up to provision of complex information for the highest decision-making levels. These solutions support technical operation while optimizing working practices, offering decision-makers rapid access to all needed data and information.

## OPTIMIZED PROCESS AND NETWORK MANAGEMENT

- Latest control system technologies: distributed intelligence, modern communications techniques, interfaces to process and office computerization, all on the basis of low-cost standard hardware and high-availability software
- Process information system: acquire, validate, integrate, administer, forward and display data as a key module of the entire computer system architecture
- Optimization of integrated systems for energy conversion and distribution
- Monitoring electrical networks: evaluation and validation of measured data, load flow calculations, switching simulations, short-circuit calculations, fault localization
- Process optimization: specialized solutions for large-scale installations to optimize operations, for example when drawing up a generating unit commitment schedule
- Web-based remote diagnosis
- Metering and instrumentation: automatic acquisition and processing of meter data
- Intelligent process monitoring: appraisal of condition of equipment and plants

## OPTIMIZED PLANT MANAGEMENT

- Maintenance management: coordination and optimization of maintenance schedules on the basis of updated measured data, calculations of lifetime and efficiency as well as reliability analyses
- Workforce management: computer-aided task assignment and staff deployment
- Geographical information systems (GIS) for easy-to-read displays and analysis of networks or equipment installations in their actual physical configurations
- Document management systems (DMS) for storage and administration of texts, specifications, drawings, construction plans etc.
- Enterprise application integration (EAI): integration of different software applications throughout your enterprise

## MANAGEMENT INFORMATION SYSTEMS

- Management Information Systems (MIS) / oversight of company operations: processing and display of data critical for decision-making, with analyses of costs and company performance over the short and long terms
- Projections of costs and consumption, for example to provide a basis for energy trading and purchasing
- Transfer of process data into operation management software, like SAP R3

## ANALYSIS

In a first working step, we analyze with you your objectives, requirements, priorities, constraints and conditions together with your automation and IT environment, and set these in relation to each other. And this analysis draws not only on our knowledge in the sectors of control technology and IT systems, but also on our well-founded know-how of your technical processes: we are equally at home in the sectors of power generation, power distribution and supply networks.

We discuss with you improvement options and conduct a cost-benefit analysis. In doing so, we consider not only capital investment, but also costs for operation, servicing, maintenance and software updates.

On this basis, we work out proposals for extending or converting your systems. And our precept is: systems and equipment will only be modernized if this will actually produce a payback. For as independent engineers we have no hidden agenda to sell you new products: we work exclusively for your advantage.



## OUR APPROACH TO ANALYSIS

- Analysis of your objectives, requirements, priorities, constraints and conditions
- Compilation of data and information on existing process, automation, control and IT installations
- Determination of improvement potentials
- Cost-benefit analysis of all components throughout their life cycles
- Devising solution proposals
- Presentation and assistance during decision-making



## PLANNING

As we proceed into more detail, we can count on the enormous potential offered by experienced experts, systems specialists and project managers. Their know-how encompasses equally input of step sequences for start-up of a power plant, and design of switchgear, and configuration of the interface to the office intranet. And we deploy this know-how so that you do not just obtain a solution, but the right one – tailored to your needs while remaining cost-effective.

### WE ENGINEER FOR YOU

#### Architecture of complete, integrated systems

- Hardware components
- Software modules
- Interfaces
- Tie-in to company intranet

#### Power plant/process I&C and network control systems

- Equipment outage and reliability analyses while factoring in redundancies
- Specification of instrumentation: processes, locations, configuration, design etc.
- Substation SCADA, remote control and protection
- Data transmission
- Uninterruptible power supply (UPS)
- Closed- and open-loop control concepts, step sequences
- Signaling concepts and hierarchies
- Operating and monitoring concepts
- Communications, fire alarm and plant protection systems
- Process visualization
- Control room planning



#### ● **Process information system**

Process tie-in

Database technology, data security, availability

Tie-in to office intranet and the Internet

#### ● **Metering and instrumentation**

Data transfer concept

Data validation

#### ● **Maintenance**

Maintenance strategy

Reliability calculations

Tie-in of process data

#### ● **Workforce management**

Setting of objectives and devising strategy

Recording constraints and conditions: guidelines, internal procedures, contracts

Specification of working practices

#### ● **Management information systems**

Access rights

Tie-in to company intranet

Display and analysis possibilities, like forecasts and projections

#### ● **Geographical information system**

Corporate objective, type of displayed information

Acquisition and tie-in of existing data

Hookup to other systems

Presentation of information, analysis possibilities, information from Web

## IMPLEMENTATION AND SERVICE

Even after your systems are engineered, our work is by no means over. Performance and functional specifications have to be written, bidders screened and invited to submit proposals, bids evaluated and contracts awarded.

Then we take care of implementation, for your solution has to be finished on time and within budget. We undertake project management and, if you wish, look after the details, too.

Project management, though, not only involves monitoring progress to track compliance with time schedules and budgets, but above all resolving the many problems that arise when suppliers work together and different systems intermesh. Fichtner's project managers possess the technical expertise to rapidly take the correct decisions on questions of detail. This means there will be no hitches in the execution of your project.

But even when your installation becomes completely operational, we can still be of service to you for you will only continue to derive the full benefit if your system keeps pace with your developments. So, it requires continuous updating, optimization and expansion. We help you in this by counseling and supporting you during implementation. Or by taking over full responsibility for all servicing requirements of your IT environment. It's up to you.



## WHAT WE OFFER YOU

- Analysis
- Counseling
- Studies, cost estimates
- Plant management concepts
- Recording data and preparing documentation of existing process and I&C systems
- Devising technical concepts
- Drawing up functional specifications with schedules of supplies and services
- Tendering, bid evaluation, recommendation for contract award
- Contract formulation, permit engineering
- Drawing up performance and equipment specifications
- Project management, expediting and budgetary control
- Detail engineering
- Acceptances, shop tests
- Supervision of construction, installation and commissioning
- Documentation
- Staff training

  

# FIPRO+



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