spiGATE™

spiGATE™ is a decision support software application for enterprise level process & quality control.

spiGATE™ provides users with an accurate and comprehensive view of the manufacturing process with detailed information that can help increase production efficiency.

spiGATE™ has the following functionality:

- Data consolidation from disparate enterprise sources;
- Enterprise history creation;
- Information analysis and statistical processing;
- Generation of online add-hoc reports;
- Data preparation for higher level systems.

spiGATE™ Main Benefits

Creation of the unitary information space

spiGATE™ facilitates transparent access to process information via intuitive selection of data sets. This enables users to focus on analysis and problem solving not on finding and compiling the information.

Enterprise history maintenance

Most often enterprise manufacturing data must be collected from numerous servers and/or directly from a host of control & information systems aimed primarily at real-time process control not data storage.

Companies have a need for retrospective process information to perform manufacturing process analysis and statistical data processing. spiGATE™ accomplishes this by enabling the user to determine data selection criteria with the following benefits:

- Quick access to large data sets;
- Long periods of actual data storage;
- Reduced load on industrial servers;
- The user can select required data set, presentation, and data collection frequency.

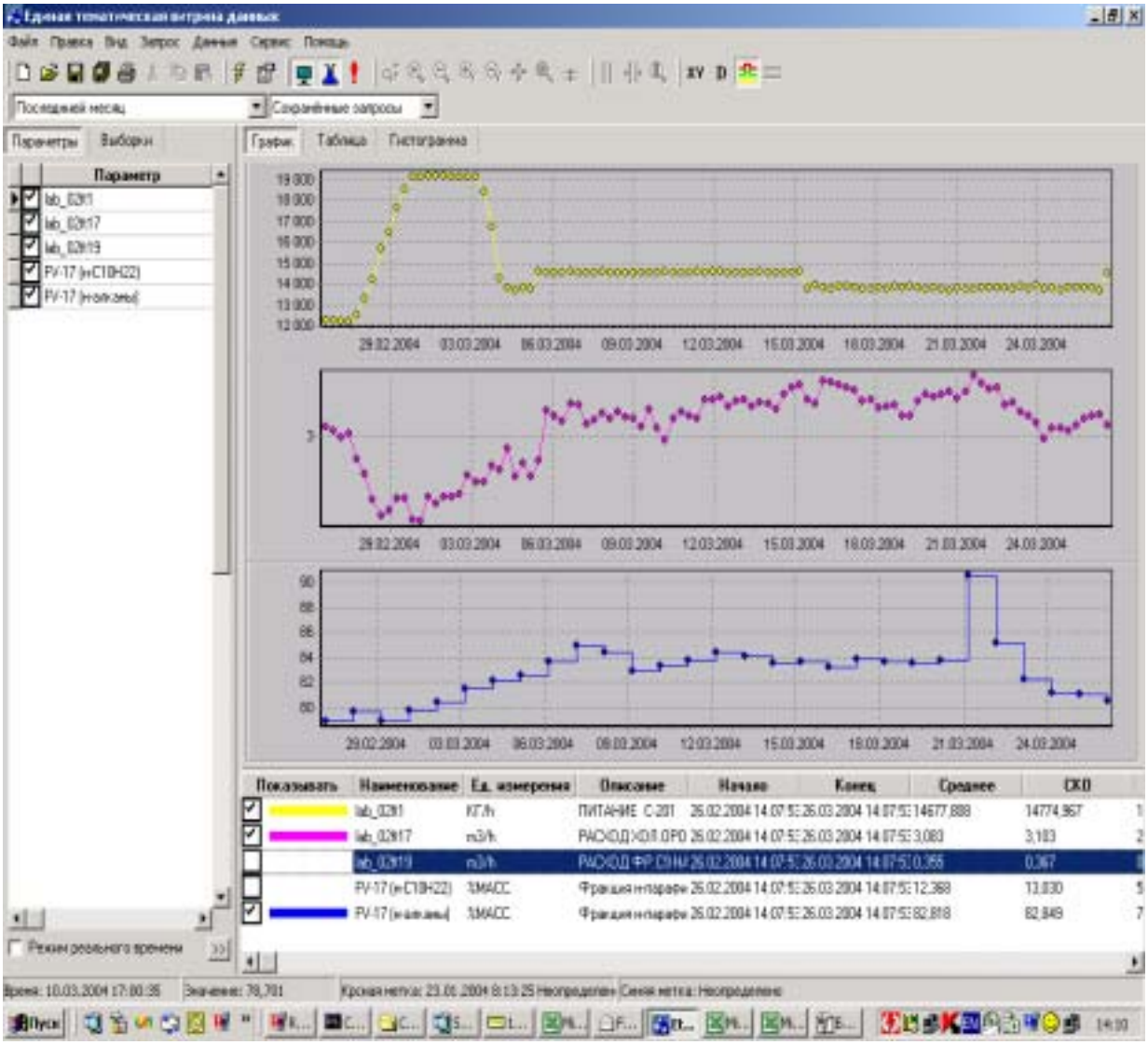
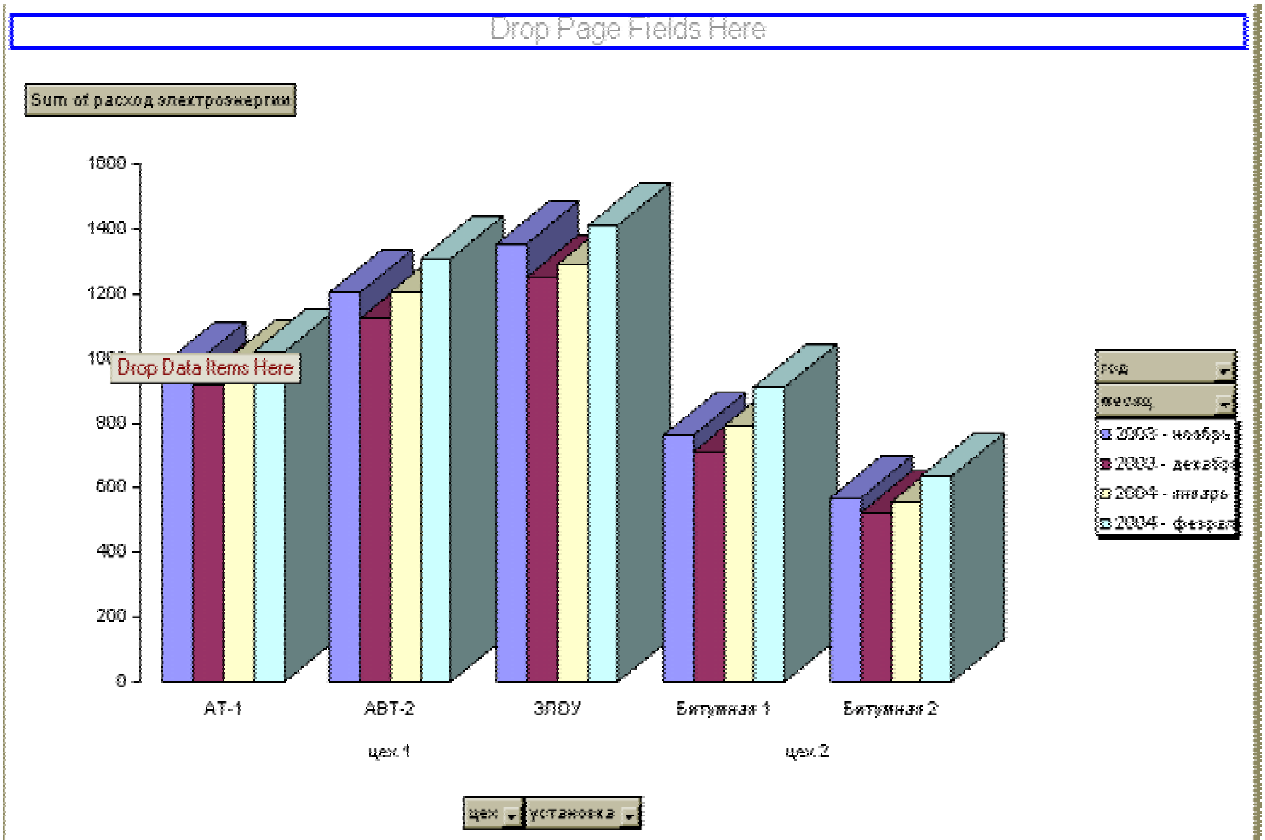


Fig. 1. Viewing interface

Data analysis and statistical processing

spiGATE™ provides a vast range of tools for data analysis:

- Table and graph visualization of consolidated data;
- Primarily statistical data processing;
- Comparative analysis visual methods;
- Bad value elimination;
- Lost value restoration;
- OLAP report generation.



Sum of расход электроэнергии		год						
		2003		2003 Total	2004		2004 Total	Grand Total
цех	установка	ноябрь	декабрь		январь	февраль		
цех 1	АТ-1	980	920	1900	985	1021	2006	3906
	АВТ-2	1207	1123	2330	1203	1310	2513	4843
	ЭЛОУ	1352	1250	2602	1290	1412	2702	5304
цех 1 Total		3539	3293	6832	3478	3743	7221	14053
цех 2	Битумная 1	760	710	1470	789	910	1699	3169
	Битумная 2	567	520	1087	555	634	1189	2276
цех 2 Total		1327	1230	2557	1344	1544	2888	5445
Grand Total		4866	4523	9389	4822	5287	10109	19498

Fig. 2. OLAP report. Energy consumption of divisions 1 & 2 in November 2003 – February 2004

Add-Hoc reports

Report format and content requirements are constantly changing. The typical reports set very quickly becomes outdated and of limited value. spiGATE™ resolves this problem by providing the user with configurable reports implemented as an Excel Add-in. The user can thus define an infinite array of mathematical and statistical analyses that can be added to report libraries. Report content is updated automatically.

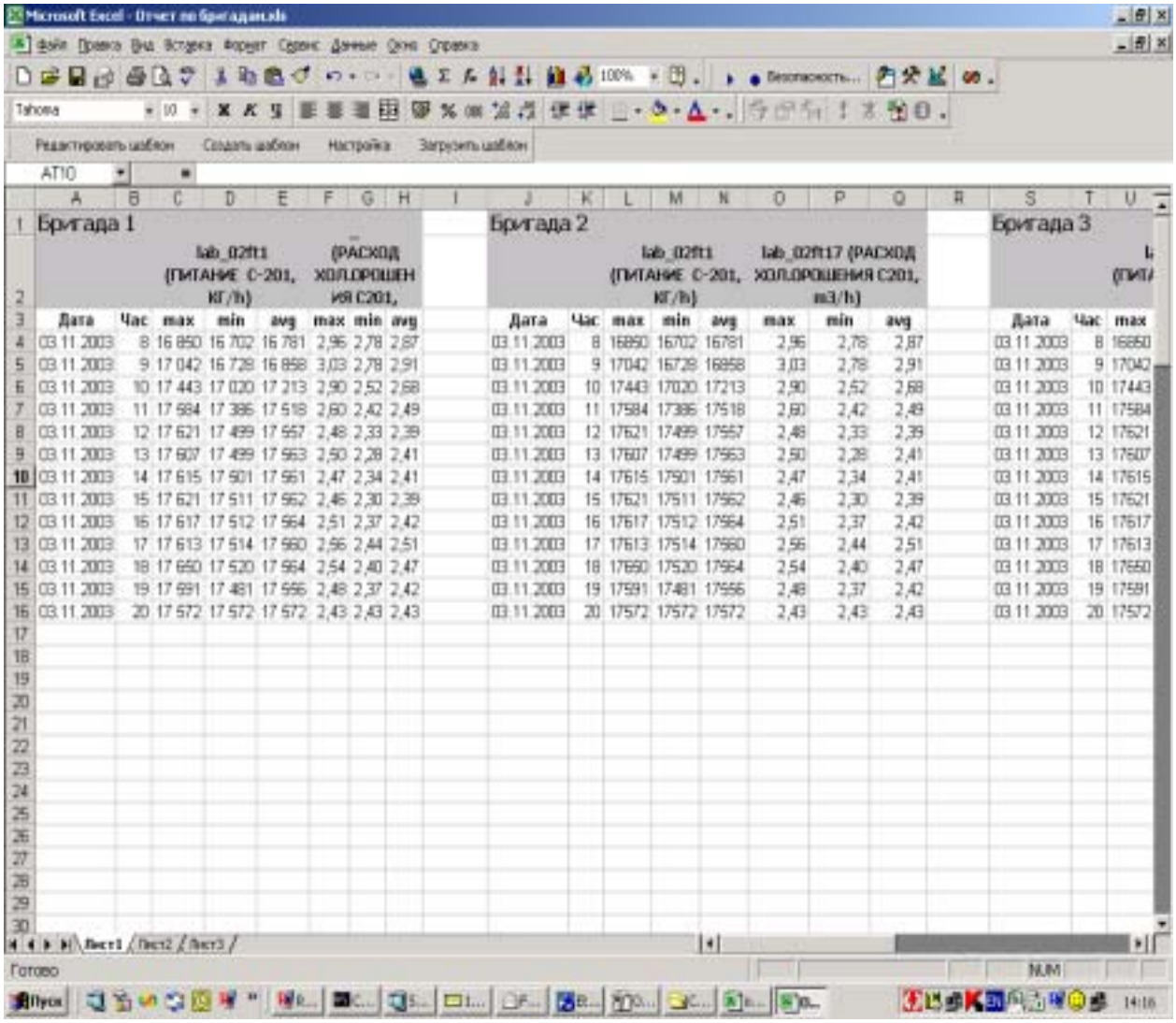


Fig. 3. Online report. Production parameters for various crews

Data preparation for higher level systems

Data supplied by control & information systems can rarely be used by ERP-systems. The procedure of data preparation for use in ERP-systems includes:

- Bad value elimination;
- Restoration of lost data sequences;
- Value aggregation;
- Integrated values generation.

spiGATE™ can transform this data into a form that can be used in higher level systems.

Other capabilities

spiGATE™ has several other important features which make it effective and user-friendly:

- Easy configuration and support;
- Open interface for integration with other applications;
- Extensible graphic interface.

The configurability of spiGATE™ ensures the ability to add of new data sources, create report template libraries and define new information cuts. System setup and connection to process information is quick and

simple because configuration and administration are straight forward and intuitive.

spiGATE™ can be used as a data supplier and results visualization tool because of its open architecture and interface. The expandable graphic interface enables symbolic diagrams and other graphics to be imported and added to the system. Using connections to manufacturing and simulated parameters, user specific dynamic views can be developed.

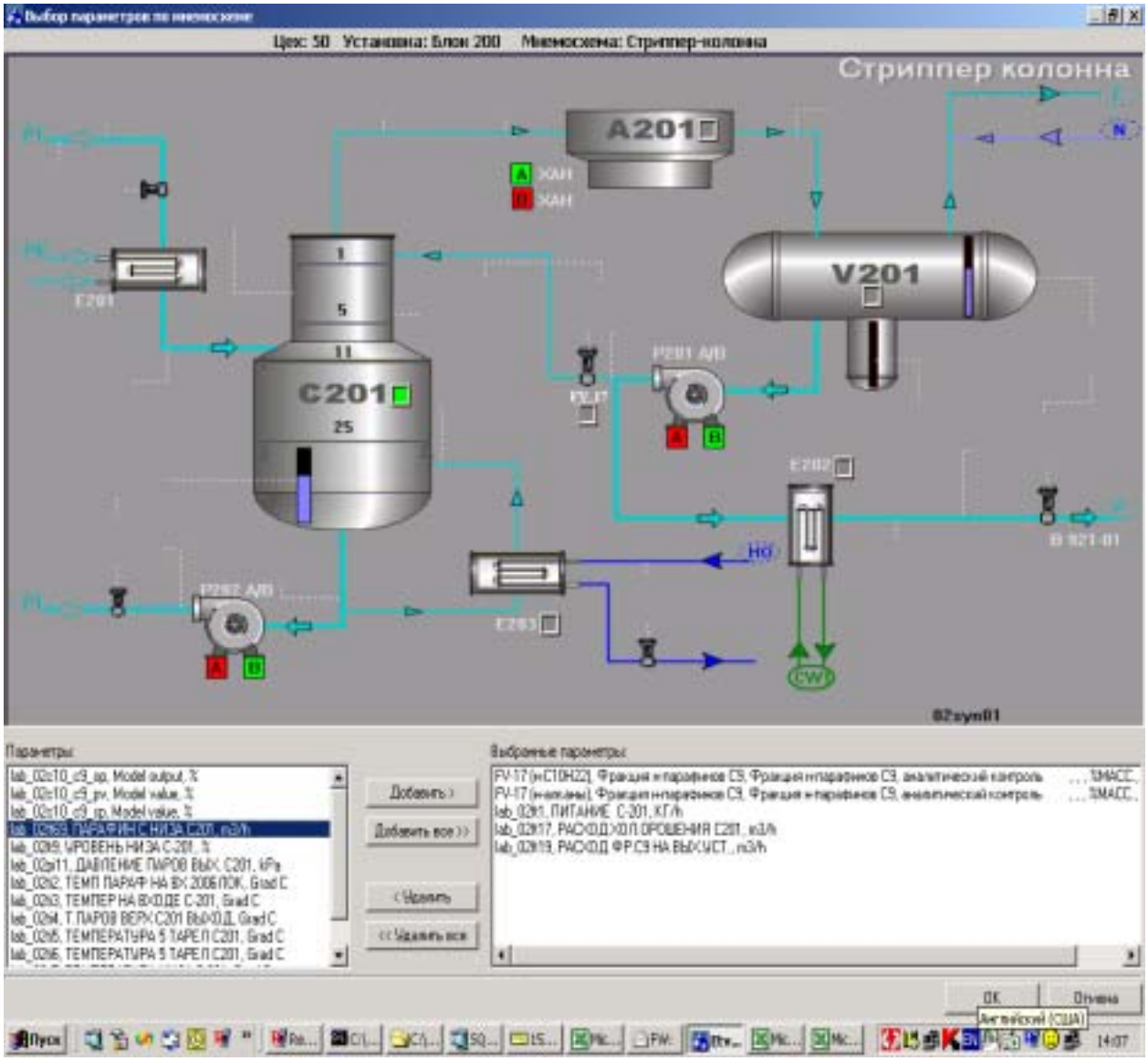


Fig. 4. Parameter selection for a symbolic diagram

spiGATE™ scope of application

spiGATE™ can be of value in almost any industry and application. It is most suited for enterprises with a diverse communications network architecture, using DCS and/or SCADA for process control and information systems. Continuous and batch process industries such as Oil and Gas, Pulp-and-Paper, Power and Chemicals can benefit greatly.

Fast significant results can be realized through optimization of the manufacturing process.
During manufacturing process control organization spiGATE™ may be used for:

- Effective interaction of process and enterprise control systems;
- Increase of manufacturing process control level;
- Timely decision making based on accurate and regular reports;
- Materials flow control;
- Enterprise process tracking;
- Critical situation decision making based on enterprise history data.

Process & enterprise control systems integration is an important requirement for achieving an accurate online evaluation of the entire enterprise. spiGATE™ successfully accomplishes one of the primary systems integration objectives which is to integrate production data with the process control system.

Large enterprise production processes are rather complex and real-time analysis is necessary to minimize material consumption and maintain high quality production. spiGATE™ helps to perform online analysis by increasing the familiarity of information and by providing the opportunity of manufacturing process simulation and process tracking based on modeled quality values.

Effective decisions are made based on timely and accurate information. spiGATE™ flexible reports and schedule development capabilities make it an effective decision support tool.

Material flow control using spiGATE™ is simple and efficient due to the ability to present user defined consolidated views of data from various online and manually entered sources.

spiGATE™ takes advantage of a vast range of visualization, configuring and data processing tools to present real-time manufacturing process data at the enterprise level.

spiGATE™ provides users with long term historical data by means of data sampling and aggregated data application, i.e. enterprise history data can be used for definition and analysis of long-term trends directly influencing the manufacturing process.