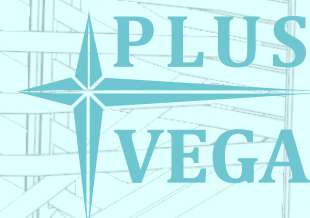




# **Vega** **Saur**

Software and hardware complex  
for automated control of ore-thermal  
electric furnaces (APCS OTEF)



Vega SAUR™ software and hardware complex designed to equip ore-thermal electric furnaces for the purpose of parameter control and optimization energy technology smelting modes for the production of ferrous, non-ferrous and titanium metallurgy alloys.

Vega SAUR™ software and hardware complex allows to obtain specified grades of alloys at maximum performance and minimum consumption of energy and material resources.

Vega SAUR™ complex allows to stabilize a given value of the active power introduced into the optimal zone of the ore-thermal electric furnace bath with a high capacity factor and its even distribution in phases, as well as upholding the electrodes current limitations and voltage imbalance on the secondary transformer windings.

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## Efficiency indicators of usage of the software and hardware complex Vega SAUR™

### EXPLICIT (for reconfigurable furnaces):

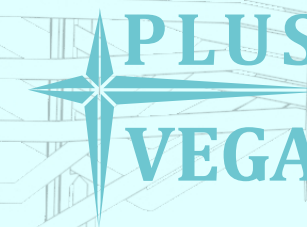
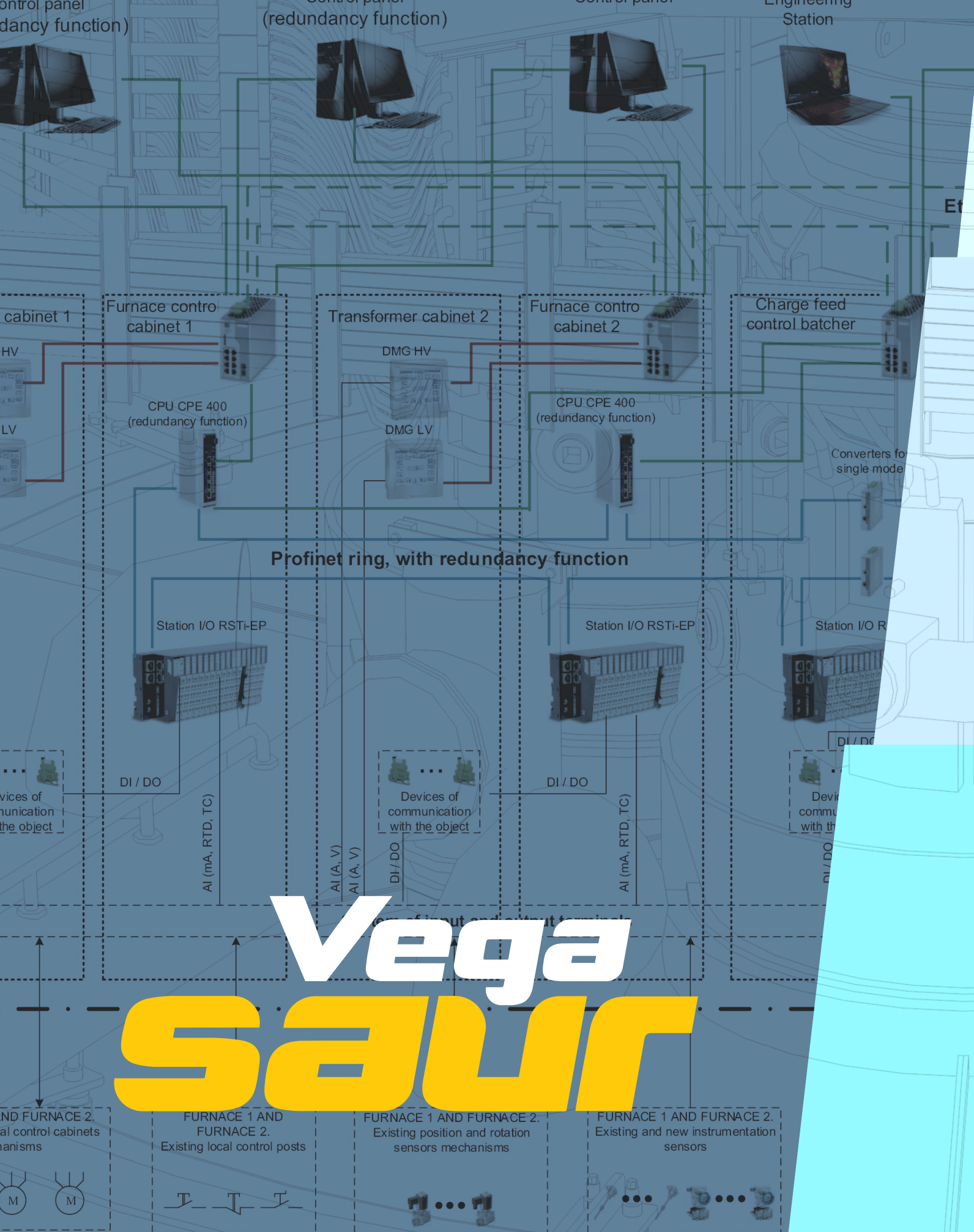
- increase in the productivity of electric furnaces by at least 3%
- reduction of specific power consumption by at least 3%
- reduction of electrode consumption by at least 3%

### IMPLICIT

- accidents reduction, diagnostics of technological equipment condition (TCD, mechanisms for moving electrode holders, transformers, slipping mechanisms and electrode block, lining)
- accumulation and improvement of knowledge about the smelting process
- improving the quality of management
- transfer of control experience to furnaces not equipped with control systems for electric mode and electrode slippage
- improvement of service staff working conditions

## Control resources used

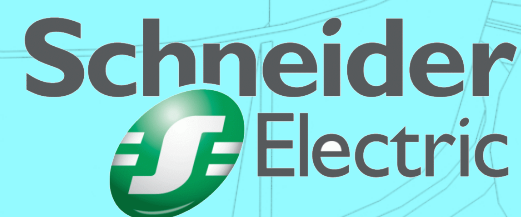
- phase voltage change by changing the number (increase or decrease) of the stage of the tap changing device (TCD) of furnace transformers
  - changing the position of the reaction zone in the OTEF bath by moving the electrode holder or / and slipping the electrode
  - adjusting the carbon balance in the OTEF bath by generating and issuing recommendations for the supply of one-time additions of the charge components to the electrode area
- 
- management of continuous handling systems of loading dosing bunkers raw materials, as well as the operation of crushing and screening equipment
  - control of the capacity of the dispensers for a set of a given dose and maintaining a given ratio of components in the charge by loading the furnace bunkers depending on the rate of consumption of the charge along the perimeter of the furnace mouth
  - control of the electrode slippage depending on the degree of its readiness and position in the furnace bath
  - stabilization of the furnace bottom temperature
  - control over the selection, transportation and cleaning of the gas-dust-air mixture (GDAM), released during the OTEF operation



JSC «VEGA PLUS» does not lobby the use of either technical or software of a certain manufacturer.

The VEGA SAUR™ complex can be designed according to your technical policy in the field of automation.

We have successfully operating systems implemented on the basis of leading vendors:  
Schneider Electric, Siemens, GE, EMERSON, ABB, Allen-Bradley.



SIEMENS



Allen-Bradley  
by ROCKWELL AUTOMATION



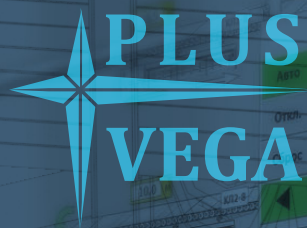
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## Functions of the Vega SAUR™ complex

- automatic collection, processing, registration and display of the current values of the electrical mode and electrodes slippage parameters
- calculation of the design parameters of the electrical mode and slippage of electrodes
- determination of the position of the mechanisms for moving the electrode holder, the value of the slippage and the length of the electrodes, as well as the number of the TCD stage
- optimization of the electrical mode due to the formation of the most rational control action for the current state of the smelting process
- optimization of the coking mode (for self-baking electrodes) and electrode slippage taking into account its consumption and position in the furnace bath



## Functions of the Vega SAUR™ complex

automatic collection, processing, registration and display of the current values of the parameters of subsystems:

- charge preparation, charge supply
- charge dosing
- OTEF thermal conditions
- auxiliary subsystems

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## Functions of the Vega SAUR™ complex

- maintaining an archive of messages about technological parameters going beyond the established limits
- formation of trends and a database of parameters of the electrical mode and electrodes slippage
- control of the control equipment staff actions
- formation of reporting documents (shift and daily reports of furnace operation, heat maps etc.) for any period within the specified «depth» of archiving, with the possibility of printing
- preparation of data for exchange with higher-level and adjacent systems (DMS, APCS etc.)
- implementation of remote access to the Vega SAUR™ complex via the Internet for monitoring and timely parameters adjustment

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More than 50 furnaces in 9 countries



JSC «VEGA PLUS» executives have more than 45 years of experience in the successful development and implementation of automation systems and APCS at various enterprises of ferrous and non-ferrous metallurgy, have 46 copyright certificates and patents, and more than 160 scientific papers, including monographs.

In total, ore-heating furnaces with a total installed capacity of more than 1000 MVA have been automated with the participation of JSC «VEGA PLUS», which is the best indicator in Europe.



# *Vega* **Saur**

By purchasing the VEGA SAUR™ complex

Customer can count on:

- free consultations;
- round-the-clock technical support;
- efficiency and flexibility in solving nonstandard issues.

*vegaplus.com.ua*

