**Privacy Policy**

This offer is a confidential document between “\_\_\_” LLP and “\_\_\_” JSC (Client). This document contains confidential and / or proprietary information that cannot be disclosed or discussed with persons outside the above companies without the prior consent of “\_\_\_”.

All questions regarding this proposal should be addressed to the following contacts:

Reductions and determinations

|  |  |
| --- | --- |
| Reduction | Abbreviation |
| ECP | Electric centrifugal pump |
| OCP | Oil collection point |
| OTS | Oil treatment station |
| COCP | Commercial oil collection point |
| AGM | Automated group metering |
| IAAC | Information and Analytical center |
| FC | Frequency converter |
| SCP | Sectional centrifugal pump |
| SCADA | Supervisory control and data acquisition |
| MS | Management station |
| PlC | Programmable logic controller |
| W | Workstation |
| VC | Video conferencing |
| IAAC | Information and Analytical center |

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# 

# 1. Introduction

This document is a technical and commercial proposal describing the maintenance of the automation system of the Ayrankol field.

This document was prepared on the basis of a technical survey of the process automation system and contains a proposal for the maintenance of the ECP, AGM, OCP-1, 2, 3 automation system, OTS,COCP,GPES,AAC and IAC equipment.

# 2. Project goals and objectives

The aim of the project is the full maintenance of the automation system of the oil production process for JSC "\_\_\_" (Client), within the framework of the project "Smart Field". In this project, the proposed maintenance of 43 wells of ESP, PSN-1, 2, 3, OPN, COCP, 6 AGM, GES and AAC.

# 3. General provisions

3.1 ECP wells – 43 pcs.

It is proposed to upgrade the automation system of the technological process of ECP wells for transmitting telemetry data to the IAAC (at the request of the Customer, the number of wells, from the existing 38, increased by 5 units). The objectives of the stage in accordance with the agreed technical specifications and Appendix A, as well as the approved project documentation

Design:

• Installation of 3 pressure sensors, 1 temperature sensor for each well;

• Installation of the control cabinet and module;

• Integration with ECP control system in accordance with the terms of reference;

• Commissioning according to the agreed schedule and technical task;

• Transmission of telemetry data to the IAAC according to those;

• Remote control frequency converter pump ECP.

## 3.2  AGM – 6 pcs.

It is proposed to upgrade the automation system of the AGM technological process for transmitting telemetry data to the IAAC. Tasks of the stage Tasks of the stage according to the agreed technical task and Appendix A, as well as the approved project documentation:

• Installation according to the application section of AGM;

•Commissioning works;

• Transmission of telemetry data to the IAAC;

• Remote control by switching wells and time of measurement;

## 3.3 OCP-1 and 2

It is proposed to automate the PCN-1 and 2 technological process and configure the transfer of telemetry data to the IAAC. Tasks of the stage Tasks of the stage according to the agreed technical task and Appendix A, as well as the approved project documentation:

## • Design;

## • IAAC programming;

## • Installation of control cabinet and communication module;

## • Installation of 18 pressure sensors, 14 temperature sensors, 10 flow meters, 2 solenoid valves, 2 level gauges;

## •Commissioning works;

## • Transfer of pressure, temperature, flow meter and liquid level data with phase separation in the IaAC.

## 3.4 OCP – 3 pcs.

It is proposed to upgrade the process automation system PCN-3 and configure the transfer of telemetry data to IAAC. The objectives of the stage in accordance with the agreed technical specifications and Appendix A, as well as the approved project documentation:

• Design;

• Integration with PLC;

• PLC programming;

• Installation of 13 pressure sensors, 10 temperature sensors, 6 flow meters, 12 solenoid valves, 4 contactless radar level gauges, 4 waveguide radar level sensors;

• Transferring workstation NGSV-150;

•Commissioning works;

• Transmission of data of pressure, temperature, flow meter and liquid level with phase separation in the IAAC;

• Remote control by electrovalves, PE CNS.

## 3.5 OTS

It is proposed to modernize the system for automating the technological process of the DPU and setting up the transfer of telemetry data to the IAC. The objectives of the stage in accordance with the agreed technical specifications and Appendix A, as well as the approved project documentation:

• Design;

• Integration with PLC;

• PLC programming;

• Installation of 19 pressure sensors, 14 temperature sensors, 16 electrovalves, 6 waveguide radar level sensors, 6 contactless radar level gauges, 7 flow meters;

•Commissioning works;

• Data transfer of pressure, temperature, liquid level with phase separation in IAC

• Remote control by electrovalves, PE CNS.

## 3.6 COCP

It is proposed to automate the process PSTN and configure the transfer of telemetry data to the IAC. The objectives of the stage in accordance with the agreed technical specifications and Appendix A, as well as the approved project documentation:

• Design;

• PLC programming;

• Installation of control cabinet and communication module;

• Installation of 7 pressure sensors, 7 temperature sensors, 14 solenoid valves, 7 level gauges;

•Commissioning works;

• Transmission of data of pressure, temperature, liquid level with phase separation in the IAAC;

• Remote control of emergency CNS;

• Calibration of the flow meter;

• Remote control by electrovalves, PE CNS.

## 3.7 IAAC

It is proposed to configure the transmission of telemetry data to the IAC. The objectives of the stage in accordance with the agreed technical specifications and Appendix A, as well as the approved project documentation:

• Design;

• PLC programming;

• Installation of a communication module;

•Commissioning works.

## 3.8 GPES

It is proposed to configure the transmission of telemetry data to the IAAC. The objectives of the stage in accordance with the agreed technical specifications and Appendix A, as well as the approved project documentation:

• Design;

• PLC programming;

• Installation of a communication module;

•Commissioning works.

## 3.8 IAC

Installation of equipment for IAC is proposed. The objectives of the stage in accordance with the agreed technical specifications and Appendix A, as well as the approved project documentation:

• Equipping the server

• Installing a video wall

• Installation of video conferencing systems

• Server installation

• Installing SCADA on the server

• Insertion of signals from field objects to the server

## 3.9 Note

A complete list of the equipment supplied: name, purpose, brand, quantity and price are given in the annex to this document. The application is a confidential document that cannot be disclosed or discussed with persons outside the above companies without the prior consent of the company \_\_\_.

# 4. Commercial part

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **№** | **Job Description** | **Unit** | **Amount** | **Amount without VAT (tenge)** |
| 1 | **43 wells ECP** | service | 1 |  |
| 2 | **6 AGM** | service | 1 |  |
| 3 | **OCP-1** | service | 1 |  |
| 4 | **OCP-2** | service | 1 |  |
| 5 | **OCP-3** | service | 1 |  |
| 6 | **OTS** | service | 1 |  |
| 7 | **COCP** | service | 1 |  |
| 8 | **IAAC** | service | 1 |  |
| 9 | **GPES** | service | 1 |  |
| 10 | **IAAC** | service | 1 |  |
| 11 | **PIR** | service | 1 |  |
| **Amount for equipment without VAT (tenge)** | | |  | |
| **Amount for work without VAT (tenge)** | | |  | |
| **Total amount without VAT (tenge):** | | |  | |

\* This price offer is intended for preliminary budgeting of the upcoming project.

The project implementation period is quarter I, 2020.

This technical and commercial offer is valid for 30 days (until June 20, 2019).

This technical and commercial proposal may change after the release of the working draft and the approved design and estimate documentation.

The warranty period for equipment and consumables is distributed from the manufacturer’s plant and is specified in the technical certificates and warranty cards for equipment and materials. The warranty period for work is one calendar year.

The delivery time of the equipment is 110 calendar days.

Payment terms: prepayment for the supply of equipment 100%, payment for work performed upon the signing of the acts, according to the PGR.

# 5. Project implementation

The personnel of \_\_\_ LLP has certificates of passing the following trainings from the company.

Schlumberger:

* Avocet Fundamentals
* Avocet Administration, Level 1
* Avocet Administration, Level 2

Siemens:

* ST7-PRO1 Programming
* ST7-PRO2 Programming
* ST-BWINCC Programming
* SYSUP1500
* DESIGO
* CERBERUS PRO

Honeywell:

* HPC-SAS
* VersaFlow

Rockwell:

* RSLogix 5000 Level1
* Studio 5000 Logix Designer

All work will be carried out according to the production schedule, agreed and approved according to the project documentation. All staff working on the project has the necessary skills and qualifications as well as certification and tolerances for this kind of work, in compliance with all rules and regulations, as well as internal regulations of the customer.

# 6. Requirements for project implementation

In accordance with the scope of work defined in Section 3 of this document, the following requirements must be met:

• The customer is obliged to stop the work of wells within 6 hours from the moment of filing a written application of the Contractor’s employees, for installation of pressure, temperature and pressure gauges;

• The customer is obliged to prepare, namely to empty and flush the RVS, and all the necessary containers 1 day before the start of work on the installation of temperature and level sensors;

• The contractor is not responsible for the integrity of the anti-corrosion layer RVS and other containers when performing work on the installation of sensors;

• The customer is obliged to stop the operation of the line on the furnace within 1 day from the moment the written application is submitted by the Contractor’s employee to install the ignition system and gas flow meters;

• The customer is obliged to stop the operation of the line within 1 day from the moment of filing a written application by the Contractor’s employee to install flow meters;

• The customer covers all actual expenses of the Contractor, incurred when inconsistencies are found in the documentation provided with the actual available arrangement of the solenoid valves on flow lines and other containers;

• The customer is obliged to allocate a storage room at the place of work for the storage of equipment, fuel and equipment at least 200 square meters;

• The customer is obliged to provide the Contractor’s employees with a place of residence at the place of work meeting all relevant sanitary standards;

• The Customer is obliged to make all possible efforts to assist the Contractor’s staff in laying cables and ramps;

• The customer is obliged to provide all the necessary information and the entire available database for implementation in the new SCADA system;

• The customer is obliged to cover all actual expenses of the Contractor and to provide personnel for the work if there are discrepancies in the documentation provided with the actual schemes;

• In compiling this quotation, information received from the Customer’s representatives was used to fill in the questionnaires. Considering the above, the cost of this commercial offer can be changed after filling out equipment questionnaires by the Customer’s representatives;

• Prior to the implementation of measures for the purchase of equipment, the Customer is obliged to provide the Contractor with completed equipment questionnaires and agree with the Contractor on the protocols and physical level of data transfer from the installed sensors;

• In case of any situation (accident, weather conditions and / or any other circumstances of insuperable force) at the place of work not due to the fault of the Contractor, which impedes the work or contradicts safety measures, the Customer is obliged to extend the term of work delivery in proportion to the duration of situations.

• If you need to install licensed software or purchase certificates, licenses, etc. to complete the work, the Customer must independently acquire such certificates, licenses, etc. And also \_\_\_ is not obliged to fix any problems with the software license, as well as errors, malfunctions of the system software.

• In case of restriction of access to the work site by the Customer, the Customer is obliged within 2 (two) days from the beginning of the time limit on the notice in writing to notify the Contractor of the reason for the access restriction and the period during which the Contractor is denied access to the work site. Also, the Customer is obliged to increase the deadline for delivery of work in proportion to the term of the restriction, access if the restriction did not arise due to the fault of the Contractor.

• All software must have licenses. If necessary, \_\_\_ employees should be able to install software on laptops.

• If it is impossible to integrate new equipment (instrumentation, automated process control systems, SCADA) with existing equipment for technical and / or other reasons beyond the control of the Contractor, the Customer must, at its own expense, call specialists of the manufacturer of the existing equipment to assist in the integration of new equipment.

## 6.1 Restrictions

• in case of any situation (accident, weather conditions and / or any other circumstances of insuperable force) at the place of work not due to the Contractor’s fault, which impedes the work or contradicts safety measures, the Customer is obliged to extend the term of work delivery in proportion to the duration of the work situations

* if necessary, install licensed software or purchase certificates, licenses, etc. to complete the work, the Customer must independently acquire such certificates, licenses, etc. And also \_\_\_ is not obliged to fix any problems with the software license, as well as errors, malfunctions of the system software.

• in case of restriction of access to the work site by the Customer, the Customer is obliged within 2 (two) days from the beginning of the time limit on the written notice to notify the Contractor about the reason for the access restriction and the period during which the Contractor is prohibited from access to the work site. Also, the Customer is obliged to increase the deadline for delivery of work in proportion to the term of the restriction, access if the restriction did not arise due to the fault of the Contractor.

# 

# 7. Work Acceptance Procedure

The procedure for acceptance of work should be carried out in the following order:

1. Documentation: The customer must certify and document the results of all functional performance tests using special procedural forms developed for this purpose. These forms are provided to contractors in advance of the testing facility.
2. \_\_\_ must send reports on completed tasks. At the end of each assignment, the acceptance certificate must be signed by the customer. Date of acceptance of the task must be agreed between \_\_\_ and the customer in advance of the test day.
3. Upon completion of work: an acceptance certificate must be signed for each type of work. Payment must be made in accordance with the agreed prices.\_
4. \_\_ should provide a training course on working with systems, as well as all necessary documentation on the use of the system and equipment, as well as further support to it by the customer.
5. The customer and \_\_\_ must agree on the final date of the meeting, which is documented by email.
6. \_\_\_ present the results of the project in the form of a PowerPoint presentation at the final meeting.

# The customer must perform a quality check of the work performed within 5 (five) business days after the date of the final meeting. In case of refusal to accept work performed, a written notification must contain a detailed justification of the refusal.

Appendix to the Technical and Commercial Proposal - automated control system at the Ayrankol field for Caspian-Neft JSC

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| № | Name  equipment | Order number | unit | Total  quantity | Unit price  without VAT | | Amount  without VAT | |
|  | **Wells** | | | | | ***Total:*** | | **181 833 714** | |
| 1 | DC24V PWR Supply, DC24V Input (8 ch) & Relay Output  (8 ch) (MLM-DR16S) |  |  |  |  | |  | |
| 2 | Current/Voltage Input (4 ch) (MLF-AD04A) |  |  |  |  | |  | |
| 3 | Ethernet (TCP/IP, UDP/IP) |  |  |  |  | |  | |
| 4 | Pressure Sensor (PT) |  |  |  |  | |  | |
| 5 | Temperature sensor (TT) |  |  |  |  | |  | |
| 6 | Control cabinet SCHMP |  |  |  |  | |  | |
| 7 | Perforated DIN rail (1000mm length) 35x7.5 mm |  |  |  |  | |  | |
| 8 | Tips |  |  |  |  | |  | |
| 9 | Terminals |  |  |  |  | |  | |
| 10 | Explosion-proof mounting cable, non-flammable |  |  |  |  | |  | |
| 11 | Non-combustible interface cable (for Modbus RTU) |  |  |  |  | |  | |
| 12 | Explosion-proof assembly cable, incombustible (from junction box) |  |  |  |  | |  | |
| 13 | Power cable |  |  |  |  | |  | |
| 14 | UTP6E, for antenna, outdoor, black |  |  |  |  | |  | |
| 15 | Connector Copper Specials (RJ-45) CAT |  |  |  |  | |  | |
| 16 | PLC MasterLogic 50 |  |  |  |  | |  | |
| 17 | Automatic switch 2F |  |  |  |  | |  | |
| 18 | Automatic switch1f |  |  |  |  | |  | |
| 19 | UPS |  |  |  |  | |  | |
| 20 | Stabilizer |  |  |  |  | |  | |
| 21 | Thermostat |  |  |  |  | |  | |
| 22 | Convection panel heaters |  |  |  |  | |  | |
| 23 | Pressure gauge (pipe, annular, line) |  |  |  |  | |  | |
| 24 | Tee (pipe, annular, line) |  |  |  |  | |  | |
| 25 | Lug (pipe, annular, line, sleeve TT) |  |  |  |  | |  | |
| 26 | Valve |  |  |  |  | |  | |
| 27 | TT liner |  |  |  |  | |  | |
| 28 | Radio Bridge Ubiquiti PowerBeam M5 400 Description |  |  |  |  | |  | |
| 29 | Lightning Protection for Antenna |  |  |  |  | |  | |
| 30 | Lightning protection for RS 485 to An Ethernet Converter Ethernet |  |  |  |  | |  | |
| 31 | Telescopic mast (height 1-1.5 m, diameter 35-50mm or Hilt profile) |  |  |  |  | |  | |
| 32 | UTP6E, for antenna, outdoor, black |  |  |  |  | |  | |
| 33 | Connector Copper Specials (RJ-45) CAT 6е |  |  |  |  | |  | |
| 34 | Sockets: additional power 220 for antennas |  |  |  |  | |  | |
| 35 | Automatic antenna power (6A) |  |  |  |  | |  | |
| 36 | Tips |  |  |  |  | |  | |
| 37 | Mast assembly (construction 5 m) |  |  |  |  | |  | |
| 38 | Cement and sand |  |  |  |  | |  | |
| 39 | Works |  |  |  |  | |  | |
|  |  | | | | |  | |  | |
| 40 | Radio Bridge Ubiquiti PowerBeam M5 400 Description |  |  |  |  | |  | |
| 41 | Lightning Protection for Antenna |  |  |  |  | |  | |
| 42 | Telescopic mast (height 1-1.5 m, diameter  35-50mm or Hilt profile)  Telescopic mast  RadioTechnik MTP - 6 mtp-6 |  |  |  |  | |  | |
| 43 | UTP6E, for antenna,  street, black |  |  |  |  | |  | |
| 44 | Connector Copper Spec (RJ-45) CAT 6e |  |  |  |  | |  | |
| 45 | Sockets: additional power 220 for antennas |  |  |  |  | |  | |
| 46 | Automatic antenna power (6A) |  |  |  |  | |  | |
| 47 | Tips |  |  |  |  | |  | |
| 48 | RS 485 to Ethernet Converter |  |  |  |  | |  | |
| 49 | 2-port serial-to-Ethernet Modbus gateways / Modbus-RTU / ASCII Converter (RS-232/422/485) to Modbus / TCP in industrial performance |  |  |  |  | |  | |
| 50 | Control cabinet SCHMP |  |  |  |  | |  | |
| 51 | Perforated DIN rail (1000mm length) 35x7.5 mm |  |  |  |  | |  | |
| 52 | Circuit breaker RX3 2 phase 25A 2M (Type C) 4,5 kA |  |  |  |  | |  | |
| 53 | Circuit Breaker DX3-E C3 1P 6000 / 6kA |  |  |  |  | |  | |
| 54 | Circuit breaker RX3 2 phase 10A 2M (Type C) 4,5 kA |  |  |  |  | |  | |
| 55 | Terminals |  |  |  |  | |  | |
| 56 | DQ 8x 24VDC / 0.5A ST, module diagnostics |  |  |  |  | |  | |
| 57 | DI 8x24 VDC ST, module diagnostics |  |  |  |  | |  | |
| 58 | BU15 base unit  15 mm wide, Type A0 without integrated temperature sensor  Round compensation BU15-P16 + A10 + 2B, dark |  |  |  |  | |  | |
| 59 | AI 4x I 4 ... 20MA 16 bit, ± 0.3%, 2-wire sensor wiring diagrams, module diagnostics, HART protocol |  |  |  |  | |  | |
| 60 | IM 155-6 PN ST with BA 2x RJ45 power adapter |  |  |  |  | |  | |
| 61 | Memory Card for ET 200SP Peripheral Controllers |  |  |  |  | |  | |
| 62 | PLC ML-50 |  |  |  |  | |  | |
| 63 | Flame sensor optical SL-90- 1 / 24V |  |  |  |  | |  | |
| 64 | Adapter for SL-90-1 / 24V |  |  |  |  | |  | |
| 65 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 66 | Temperature Sensor (TT) |  |  |  |  | |  | |
| 67 | Vortex Flowmeter-Counter OPTISWIRL 4200,  execution flange + Return flange collar " |  |  |  |  | |  | |
| 68 | Works |  |  |  |  | |  | |
|  |  | | | | |  | |  | |
| 69 | Contactless level gauge without probe |  |  |  |  | |  | |
| 70 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 71 | Coriolis Flow Meter (Tube 219) |  |  |  |  | |  | |
| 72 | Coriolis Flow Meter (Tube 219) |  |  |  |  | |  | |
| 73 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 74 | Temperature Sensor (TT) |  |  |  |  | |  | |
| 75 | Vortex flowmeter |  |  |  |  | |  | |
| 76 | Flame sensor optical SL-90- 1 / 24V |  |  |  |  | |  | |
| 77 | Adapter for SL-90-1 / 24V |  |  |  |  | |  | |
| 78 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 79 | Temperature Sensor (TT) |  |  |  |  | |  | |
| 80 | Control edge full cabinet with controller |  |  |  |  | |  | |
| 81 | Explosion-proof mounting cable, non-flammable |  |  |  |  | |  | |
| 82 | Explosion-proof assembly cable, incombustible (from junction box) |  |  |  |  | |  | |
| 83 | Power cable |  |  |  |  | |  | |
| 84 | Antenna Ubiquiti nanostation M5, 5 GHz (Poe -> Eth included) |  |  |  |  | |  | |
| 85 | Lightning Protection for Antenna |  |  |  |  | |  | |
| 86 | RS 485 to Ethernet Converter |  |  |  |  | |  | |
| 87 | Telescopic mast (height 1-1.5 m, diameter 35-50mm or Hilt profile) |  |  |  |  | |  | |
| 88 | UTP6E, for antenna, outdoor, black |  |  |  |  | |  | |
| 89 | Connector Copper Spec (RJ-45) CAT 6e |  |  |  |  | |  | |
| 90 | Sockets: additional power 220 for antennas |  |  |  |  | |  | |
| 91 | Automatic antenna power (6A) |  |  |  |  | |  | |
| 92 | Tips |  |  |  |  | |  | |
| 93 | perforated tray, m |  |  |  |  | |  | |
| 94 | cover on the tray, m |  |  |  |  | |  | |
| 95 | Mast assembly (construction 5 m) |  |  |  |  | |  | |
| 96 | cement base |  |  |  |  | |  | |
| 97 | column ed |  |  |  |  | |  | |
| 98 | Basic PlantCruise Software (2000 points, 3 stations) |  |  |  |  | |  | |
| 99 | Microsoft SQL Client License |  |  |  |  | |  | |
| 100 | Set of media carriers PlantCruise R500 |  |  |  |  | |  | |
| 101 | Windows 10 COA License |  |  |  |  | |  | |
| 102 | ControlEdge Builder software license |  |  |  |  | |  | |
| 103 | Process Historian |  |  |  |  | |  | |
| 104 | ПО ControlEDGE Builder |  |  |  |  | |  | |
| 105 | PLC runtime option |  |  |  |  | |  | |
| 106 | Computer HP Workstation Z440 (T4K76EA) type: MiddleTower  Processor: Xeon  Clock frequency, GHz: 2.8  RAM: 8 GB  Optical device: DVD + R / RW & CDRW  Hard Drive: 1 TB  Operating system: Microsoft Windows 10 Pro |  |  |  |  | |  | |
| 107 | Video card PCI-E 3072Mb MSI GTX 1060 Armor OC, GeForce GTX1060 |  |  |  |  | |  | |
| 108 | LED MONITOR SAMSUNG LS24F356FHIXCI 23 " |  |  |  |  | |  | |
| 109 | EDS-405A-T Ethernet Switch, 5 10/100BaseTx ports, -40/+75C |  |  |  |  | |  | |
| 110 | UPS SVC 3C15KL Output power, W: 12000 Output voltage: 220 V Input voltage: 380 V Support AVR: Yes Connectors: USB, RS-232 |  |  |  |  | |  | |
| 111 | SVC 12V 4.5 Ah battery |  |  |  |  | |  | |
| 112 | Operator's table |  |  |  |  | |  | |
| 113 | armchair |  |  |  |  | |  | |
| 114 | computer mouse |  |  |  |  | |  | |
| 115 | Keyboard |  |  |  |  | |  | |
| 116 | Works |  |  |  |  | |  | |
|  |  | | | | |  | |  | |
| 117 | Butterfly valve Flange version  Vanessa 30000 Basic 3 '' Class 150 Torque  110 Nm Including KOF Tag: OG-1 (water) |  |  |  |  | |  | |
| 118 | Contactless level gauge without probe |  |  |  |  | |  | |
| 119 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 120 | Coriolis Flow Meter (Tube 219) |  |  |  |  | |  | |
| 121 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 122 | Temperature Sensor (TT) |  |  |  |  | |  | |
| 123 | Vortex flowmeter |  |  |  |  | |  | |
| 124 | Flame sensor optical SL-90- 1 / 24V |  |  |  |  | |  | |
| 125 | Adapter for SL-90-1 / 24V |  |  |  |  | |  | |
| 126 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 127 | Temperature Sensor (TT) |  |  |  |  | |  | |
| 128 | Control edge full cabinet with controller |  |  |  |  | |  | |
| 129 | Explosion-proof mounting cable, non-flammable |  |  |  |  | |  | |
| 130 | Non-combustible interface cable (for Modbus RTU) |  |  |  |  | |  | |
| 131 | Explosion-proof assembly cable, incombustible (from junction box) |  |  |  |  | |  | |
| 132 | Power cable |  |  |  |  | |  | |
| 133 | Antenna Ubiquiti nanostation M5, 5 GHz (Poe -> Eth included) |  |  |  |  | |  | |
| 134 | Lightning Protection for Antenna |  |  |  |  | |  | |
| 135 | RS 485 to Ethernet Converter |  |  |  |  | |  | |
| 136 | Telescopic mast (height 1-1.5 m, diameter 35-50mm or Hilt profile) |  |  |  |  | |  | |
| 137 | UTP6E, for antenna, outdoor, black |  |  |  |  | |  | |
| 138 | Connector Copper Spec (RJ-45) CAT 6e |  |  |  |  | |  | |
| 139 | Sockets: additional power 220 for antennas |  |  |  |  | |  | |
| 140 | Automatic antenna power (6A) |  |  |  |  | |  | |
| 141 | Tips |  |  |  |  | |  | |
| 142 | perforated tray, m |  |  |  |  | |  | |
| 143 | cover on the tray, m |  |  |  |  | |  | |
| 144 | Mast assembly (construction 5 m) |  |  |  |  | |  | |
| 145 | cement base |  |  |  |  | |  | |
| 146 | column ed |  |  |  |  | |  | |
| 147 | Basic PlantCruise Software (2000 points, 3 stations) |  |  |  |  | |  | |
| 148 | Microsoft SQL Client License |  |  |  |  | |  | |
| 149 | Set of media carriers PlantCruise R500 |  |  |  |  | |  | |
| 150 | Windows 10 COA License |  |  |  |  | |  | |
| 151 | ControlEdge Builder software license |  |  |  |  | |  | |
| 152 | Process historian |  |  |  |  | |  | |
| 153 | ПО ControlEDGE Builder |  |  |  |  | |  | |
| 154 | PLC runtime option |  |  |  |  | |  | |
| 155 | Computer HP Workstation Z440 (T4K76EA) type: MiddleTower  Processor: Xeon  Clock frequency, GHz: 2.8  RAM: 8 GB  Optical device: DVD + R / RW & CDRW  Hard Drive: 1 TB  Operating system: Microsoft Windows 10 Pro |  |  |  |  | |  | |
| 156 | Video card PCI-E 3072Mb MSI GTX 1060 Armor OC, GeForce GTX1060 |  |  |  |  | |  | |
| 157 | LED MONITOR SAMSUNG LS24F356FHIXCI 23" |  |  |  |  | |  | |
| 158 | EDS-405A-T Ethernet Switch, 5 10/100BaseTx ports, -40/+75C |  |  |  |  | |  | |
| 159 | UPS SVC 3C15KL Output power, W: 12000 Output voltage: 220 V Input voltage: 380 V Support AVR: Yes Connectors: USB, RS-232 |  |  |  |  | |  | |
| 160 | SVC 12V 4.5 Ah battery |  |  |  |  | |  | |
| 161 | Operator's table |  |  |  |  | |  | |
| 162 | Armchair |  |  |  |  | |  | |
| 163 | Computer mouse |  |  |  |  | |  | |
| 164 | Keyboard |  |  |  |  | |  | |
| 165 | works |  |  |  |  | |  | |
|  |  | | | | |  | |  | |
| 166 | Temperature Sensor (TT) |  |  |  |  | |  | |
| 167 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 168 | Vortex Flowmeter Counter OPTISWIRL 4200,  execution flange + counter flange |  |  |  |  | |  | |
| 169 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 170 | Temperature Sensor (TT) |  |  |  |  | |  | |
| 171 | Waveguide radar liquid level sensor and the level of the section of two liquids RVS (1000m3, 2000m3) |  |  |  |  | |  | |
| 172 | Contactless Radar Level Gauge |  |  |  |  | |  | |
| 173 | Temperature Sensor (TT) layered, 1000, 2000 |  |  |  |  | |  | |
| 174 | Electrovalve (open / close) (Wedge gate valve with telescopic spindle) |  |  |  |  | |  | |
| 175 | Waveguide radar liquid level sensor and the level of the section of two liquids RVS (700m3) |  |  |  |  | |  | |
| 176 | Vibration level indicator for tuning fork liquid |  |  |  |  | |  | |
| 177 | Temperature Sensor (TT) layered, 700 |  |  |  |  | |  | |
| 178 | Valve steel wedge cast with a sliding spindle 30s41nzh Du150 Ru16 Ognivo-LF (Russia) |  |  |  |  | |  | |
| 179 | Coriolis Flow Meter (Tube 219) |  |  |  |  | |  | |
| 180 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 181 | Coriolis Flow Meter (Tube 219) |  |  |  |  | |  | |
| 182 | "Vortex Flowmeter-Counter OPTISWIRL 4200,  execution flange + Return flange collar " |  |  |  |  | |  | |
| 183 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 184 | Temperature Sensor (TT) |  |  |  |  | |  | |
| 185 | Flame sensor optical SL-90- 1 / 24V |  |  |  |  | |  | |
| 186 | Adapter for SL-90-1 / 24V |  |  |  |  | |  | |
| 187 | Control edge full cabinet with controller |  |  |  |  | |  | |
| 188 | Explosion-proof mounting cable, non-flammable |  |  |  |  | |  | |
| 189 | Non-combustible interface cable (for Modbus RTU) |  |  |  |  | |  | |
| 190 | Explosion-proof assembly cable, incombustible (from junction box) |  |  |  |  | |  | |
| 191 | Power cable |  |  |  |  | |  | |
| 192 | Antenna Ubiquiti nanostation M5, 5 GHz (Poe -> Eth included) |  |  |  |  | |  | |
| 193 | Lightning Protection for Antenna |  |  |  |  | |  | |
| 194 | RS 485 to Ethernet Converter |  |  |  |  | |  | |
| 195 | Telescopic mast (height 1-1.5 m, diameter 35-50mm or Hilt profile) |  |  |  |  | |  | |
| 196 | UTP6E, for antenna, outdoor, black |  |  |  |  | |  | |
| 197 | Connector Copper Spec (RJ-45) CAT 6e |  |  |  |  | |  | |
| 198 | Sockets: additional power 220 for antennas |  |  |  |  | |  | |
| 199 | Automatic antenna power (6A) |  |  |  |  | |  | |
| 200 | Tips |  |  |  |  | |  | |
| 201 | perforated tray, m |  |  |  |  | |  | |
| 202 | cover on the tray, m |  |  |  |  | |  | |
| 203 | Mast assembly (construction 5 m) |  |  |  |  | |  | |
| 204 | Cement and sand |  |  |  |  | |  | |
| 205 | column ed |  |  |  |  | |  | |
| 206 | Basic PlantCruise Software (2000 points, 3 stations) |  |  |  |  | |  | |
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| 208 | Set of media carriers PlantCruise R500 |  |  |  |  | |  | |
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| 211 | Process Historian |  |  |  |  | |  | |
| 212 | ПО ControlEDGE Builder |  |  |  |  | |  | |
| 213 | PLC runtime option |  |  |  |  | |  | |
| 214 | Microsoft Office Home and Business 2016, 1ПК, DVD, BOX |  |  |  |  | |  | |
| 215 | Computer HP Workstation Z440 (T4K76EA) type: MiddleTower  Processor: Xeon  Clock frequency, GHz: 2.8  RAM: 8 GB  Optical device: DVD + R / RW & CDRW  Hard Drive: 1 TB  Operating system: Microsoft Windows 10 Pro |  |  |  |  | |  | |
| 216 | Video card PCI-E 3072Mb MSI GTX 1060 Armor OC, GeForce GTX1060 |  |  |  |  | |  | |
| 217 | LED МОНИТОР SAMSUNG LS24F356FHIXCI 23" |  |  |  |  | |  | |
| 218 | EDS-405A-T Ethernet Switch, 5 10/100BaseTx ports, -40/+75C |  |  |  |  | |  | |
| 219 | UPS SVC 3C15KL Output power, W: 12000 Output voltage: 220 V Input voltage: 380 V Support AVR: Yes Connectors: USB, RS-232 |  |  |  |  | |  | |
| 220 | SVC 12V 4.5 Ah battery |  |  |  |  | |  | |
| 221 | Operator's table |  |  |  |  | |  | |
| 222 | Armchair |  |  |  |  | |  | |
| 223 | Computer mouse |  |  |  |  | |  | |
| 224 | Keyboard |  |  |  |  | |  | |
| 225 | works |  |  |  |  | |  | |
|  |  | | | | |  | |  | |
| 226 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 227 | Waveguide radar liquid level sensor and the level of the section of two liquids |  |  |  |  | |  | |
| 228 | Waveguide radar liquid level sensor and the level of the section of two liquids |  |  |  |  | |  | |
| 229 | Waveguide radar liquid level sensor and the level of the section of two liquids |  |  |  |  | |  | |
| 230 | Contactless Radar Level Gauge |  |  |  |  | |  | |
| 231 | Vibration level indicator for tuning fork liquid |  |  |  |  | |  | |
| 232 | Temperature Sensor (TT) layered |  |  |  |  | |  | |
| 233 | Electrovalve (open / close) ((Wedge gate valve with telescopic spindle)) |  |  |  |  | |  | |
| 234 | Electrovalve (open / close) ((Wedge gate valve with telescopic spindle)) |  |  |  |  | |  | |
| 235 | Manual wedge gate valve |  |  |  |  | |  | |
| 236 | Temperature Sensor (TT) |  |  |  |  | |  | |
| 237 | Vortex flowmeter |  |  |  |  | |  | |
| 238 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 239 | Flame sensor optical SL-90- 1 / 24V |  |  |  |  | |  | |
| 240 | Adapter for SL-90-1 / 24V |  |  |  |  | |  | |
| 241 | Electromagnetic flow sensor Sitrans FM MAG 5100 W NEW (no description) Dn100, 4 inches EN 1092-1, PN 16 Flanges carbon steel ASTM A 105 coating 150 coating 150 micron lining material: solid NBR rubber Hastelloy c-276 MAG 6000, IP67 / NEMA 4X / 6, polyamide housing, with display 115-230 V AC 50/60 Hz Modbus RTU metric junction box made of polyamide or compact 6000 I 7ME6520-3TC13-2JE |  |  |  |  | |  | |
| 242 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 243 | Control edge full cabinet with controller |  |  |  |  | |  | |
| 244 | Explosion-proof mounting cable, non-flammable |  |  |  |  | |  | |
| 245 | Explosion-proof assembly cable, incombustible (from junction box) |  |  |  |  | |  | |
| 246 | Power cable |  |  |  |  | |  | |
| 247 | Interface cable |  |  |  |  | |  | |
| 248 | perforated tray, m |  |  |  |  | |  | |
| 249 | cover on the tray, m |  |  |  |  | |  | |
| 250 | Mast assembly (construction 5 m) |  |  |  |  | |  | |
| 251 | cement base |  |  |  |  | |  | |
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| 258 | Process Historian |  |  |  |  | |  | |
| 259 | ПО ControlEDGE Builder |  |  |  |  | |  | |
| 260 | PLC runtime option |  |  |  |  | |  | |
| 261 | Microsoft Office Home and Business 2016, 1ПК, DVD, BOX |  |  |  |  | |  | |
| 262 | Computer HP Workstation Z440 (T4K76EA) type: MiddleTower  Processor: Xeon  Clock frequency, GHz: 2.8  RAM: 8 GB  Optical device: DVD + R / RW & CDRW  Hard Drive: 1 TB  Operating system: Microsoft Windows 10 Pro |  |  |  |  | |  | |
| 263 | Video card PCI-E 3072Mb MSI GTX 1060 Armor OC, GeForce GTX1060 |  |  |  |  | |  | |
| 264 | LED MONITOR SAMSUNG LS24F356FHIXCI 23 " |  |  |  |  | |  | |
| 265 | EDS-405A-T Ethernet Switch, 5 10/100BaseTx ports, -40/+75C |  |  |  |  | |  | |
| 266 | UPS SVC 3C15KL Output power, W: 12000 Output voltage: 220 V Input voltage: 380 V Support AVR: Yes Connectors: USB, RS-232 |  |  |  |  | |  | |
| 267 | SVC 12V 4.5 Ah battery |  |  |  |  | |  | |
| 268 | Operator's table |  |  |  |  | |  | |
| 269 | Armchair |  |  |  |  | |  | |
| 270 | Computer mouse |  |  |  |  | |  | |
| 271 | Keyboard |  |  |  |  | |  | |
| 272 | Radio Bridge Ubiquiti PowerBeam M5 400 Description |  |  |  |  | |  | |
| 273 | Lightning Protection for Antenna |  |  |  |  | |  | |
| 274 | RS 485 to Ethernet Converter |  |  |  |  | |  | |
| 275 | Telescopic mast (height 1-1.5 m, diameter 35-50mm or Hilt profile) |  |  |  |  | |  | |
| 276 | UTP6E, for antenna, outdoor, black |  |  |  |  | |  | |
| 277 | Connector Copper Spec (RJ-45) CAT 6e |  |  |  |  | |  | |
| 278 | Sockets: additional power 220 for antennas |  |  |  |  | |  | |
| 279 | Automatic antenna power (6A) |  |  |  |  | |  | |
| 280 | Tips |  |  |  |  | |  | |
| 281 | works |  |  |  |  | |  | |
|  |  | | | | |  | |  | |
| 282 | Waveguide radar liquid level sensor and the level of the section of two liquids |  |  |  |  | |  | |
| 283 | Vibration level indicator for tuning fork liquid |  |  |  |  | |  | |
| 284 | Contactless Radar Level Gauge |  |  |  |  | |  | |
| 285 | Temperature Sensor (TT) layered |  |  |  |  | |  | |
| 286 | Electrovalve (open / close) ((Wedge gate valve with telescopic spindle)) |  |  |  |  | |  | |
| 287 | Electrovalve (open / close) ((Wedge gate valve with telescopic spindle)) |  |  |  |  | |  | |
| 288 | Manual wedge gate valve |  |  |  |  | |  | |
| 289 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 290 | Temperature Sensor (TT) |  |  |  |  | |  | |
| 291 | Vortex flowmeter |  |  |  |  | |  | |
| 292 | Flame sensor optical SL-90- 1 / 24V |  |  |  |  | |  | |
| 293 | Flame sensor optical SL-90- 1 / 24V |  |  |  |  | |  | |
| 294 | Pressure Sensor with Display (PT) |  |  |  |  | |  | |
| 295 | Temperature Sensor (TT) |  |  |  |  | |  | |
| 296 | Control Edge |  |  |  |  | |  | |
| 297 | Explosion-proof mounting cable, non-flammable |  |  |  |  | |  | |
| 298 | Explosion-proof assembly cable, incombustible (from junction box) |  |  |  |  | |  | |
| 299 | Power cable |  |  |  |  | |  | |
| 300 | Interface cable |  |  |  |  | |  | |
| 301 | perforated tray, m |  |  |  |  | |  | |
| 302 | cover on the tray, m |  |  |  |  | |  | |
| 303 | Mast assembly (construction 5 m) |  |  |  |  | |  | |
| 304 | cement base |  |  |  |  | |  | |
| 305 | column ed |  |  |  |  | |  | |
| 306 | Antenna Ubiquiti nanostation M5, 5 GHz (Poe -> Eth included) |  |  |  |  | |  | |
| 307 | Lightning Protection for Antenna |  |  |  |  | |  | |
| 308 | RS 485 to Ethernet Converter |  |  |  |  | |  | |
| 309 | Telescopic mast (height 1-1.5 m, diameter 35-50mm or Hilt profile) |  |  |  |  | |  | |
| 310 | UTP6E, for antenna, outdoor, black |  |  |  |  | |  | |
| 311 | Connector Copper Spec (RJ-45) CAT 6e |  |  |  |  | |  | |
| 312 | Sockets: additional power 220 for antennas |  |  |  |  | |  | |
| 313 | Automatic antenna power (6A) |  |  |  |  | |  | |
| 314 | Tips |  |  |  |  | |  | |
| 315 | works |  |  |  |  | |  | |
|  |  | | | | |  | |  | |
| 316 | NakoAntenna Ubiquiti nanostation M5, 5 GHz (Poe -> Eth included) nechnniki |  |  |  |  | |  | |
| 317 | Lightning Protection for Antenna |  |  |  |  | |  | |
| 318 | Telescopic mast (height 1-1.5 m, diameter  35-50mm or Hilt profile)  Telescopic mast  RadioTechnik MTP - 6 mtp-6 |  |  |  |  | |  | |
| 319 | UTP6E, for antenna,  street, black |  |  |  |  | |  | |
| 320 | Connector Copper Spec (RJ-45) CAT 6e |  |  |  |  | |  | |
| 321 | Sockets: additional power 220 for antennas |  |  |  |  | |  | |
| 322 | Automatic antenna power (6A) |  |  |  |  | |  | |
| 323 | Tips |  |  |  |  | |  | |
| 324 | RS 485 to Ethernet Converter |  |  |  |  | |  | |
| 325 | ControlEdge Builder software license |  |  |  |  | |  | |
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| 328 | PLC runtime option |  |  |  |  | |  | |
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| 330 | Computer HP Workstation Z440 (T4K76EA) type: MiddleTower  Processor: Xeon  Clock frequency, GHz: 2.8  RAM: 8 GB  Optical device: DVD + R / RW & CDRW  Hard Drive: 1 TB  Operating system: Microsoft Windows 10 Pro |  |  |  |  | |  | |
| 331 | Video card PCI-E 3072Mb MSI GTX 1060 Armor OC, GeForce GTX1060 |  |  |  |  | |  | |
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| 333 | EDS-405A-T Ethernet Switch, 5 10/100BaseTx ports, -40/+75C |  |  |  |  | |  | |
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| 338 | Computer mouse |  |  |  |  | |  | |
| 339 | Keyboard |  |  |  |  | |  | |
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| 341 | Antenna Ubiquiti nanostation M5, 5 GHz (Poe -> Eth included) |  |  |  |  | |  | |
| 342 | Lightning Protection for Antenna |  |  |  |  | |  | |
| 343 | Telescopic mast (height 1-1.5 m, diameter  35-50mm or Hilt profile)  Telescopic mast  RadioTechnik MTP - 6 mtp-6 |  |  |  |  | |  | |
| 344 | UTP6E, for antenna,  street, black |  |  |  |  | |  | |
| 345 | Connector Copper Spec (RJ-45) CAT 6e |  |  |  |  | |  | |
| 346 | Sockets: additional power 220 for antennas |  |  |  |  | |  | |
| 347 | Automatic antenna power (6A) |  |  |  |  | |  | |
| 348 | Tips |  |  |  |  | |  | |
| 349 | RS 485 to Ethernet Converter |  |  |  |  | |  | |
| 350 | works |  |  |  |  | |  | |
|  |  | | | | |  | |  | |
| 351 | Visualization system Video wall in 6x2 configuration built on the basis of a professional video pane for building video walls, frame width 0.44 mm, 55 ", 1920 x 1080 (FHD), complete with wall mounting system B-Tech,  switching cables, video signal adapters, and decorative design in accordance with the room design |  |  |  |  | | | |
| 352 | Visualization system Video wall in 4x2 configuration built on the basis of a professional video pane for building video walls, frame width 0.44 mm, 55 ", 1920 x 1080 (FHD), complete with wall mounting system B-Tech,  switching cables, video signal adapters, and decorative design in accordance with the room design |  |  |  |  | | | |
| 353 | UPS 10,000W |  |  |  |  | | | |
| 354 | Telecommunication cabinet 42U |  |  |  |  | | | |
| 355 | АРМ Core i5/8400/2,8 GHz/8 Gb/1000 Gb/DVD+/- RW/GeForce/GTX1050/2 Gb/Linux/WiFi+BT |  |  |  |  | | | |
| 356 | air conditioning on 100kv.m floor |  |  |  |  | | | |
| 357 | Monitor 23.8 |  |  |  |  | | | |
| 358 | The wireless audio conferencing system VISSONIC CLEACON T. It is  digital full featured conference  a system that has all the features - functions of discussion, voting and simultaneous translation in 3 languages ​​(Kazakhs. Eng.). System  consists of a 1-st console and 16 delegate consoles, a comfortable touch-interface in consoles,  connect over wifi. |  |  |  |  | | | |
| 359 | Video wall controller in 6x2 configuration (8 inputs, 12 outputs) including software  24 "monitor and viewing monitor |  |  |  |  | | | |
| 360 | Video wall controller in 4x2 configuration (8 inputs, 8 outputs) including software  24 "monitor and viewing monitor |  |  |  |  | | | |
| 361 | Operator table |  |  |  |  | | | |
| 362 | Conference table |  |  |  |  | | | |
| 363 | Armchair |  |  |  |  | | | |
| 364 | Radio Bridge Ubiquiti PowerBeam M5 400 Description |  |  |  |  | | | |
| 365 | Lightning Protection for Antenna |  |  |  |  | | | |
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| 367 | UTP6E, for antenna,  street, black |  |  |  |  | | | |
| 368 | Connector Copper Spec (RJ-45) CAT 6e |  |  |  |  | | | |
| 369 | Sockets: 220 extra power for antennas  (on wells PPD) |  |  |  |  | | | |
| 370 | Automatic antenna power (6A) |  |  |  |  | | | |
| 371 | Tips |  |  |  |  | | | |
| 372 | SCADA software (software package / set) |  |  |  |  | | | |
| 373 | works |  |  |  |  | | | |
|  |  | |  | | |  | | | |
| 374 | Design and survey work |  |  |  |  | | | |
|  |  | | | | |  | | | |