**Private institution University Donja Gorica invites you to take part in the process of submitting bids for the selection of the most suitable supplier for the procurement of equipment for University Donja Gorica (UDG) for realization purposes**

**ERASMUS + project “Vitalising ICT relevance in agricultural learning”**

**VIRAL- 609755-EPP-1-2019-1-BA-EPPKA2-CBHE-JP [[1]](#footnote-1)**

**I SUBJECT OF PROCUREMENT:**

Subjects of procurement are equipment within *ERASMUS + project 609755-EPP-1-2019-1-BA-EPPKA2-CBHE-JP “Vitalising ICT relevance in agricultural learning” VIRAL* according to specification:

**LOT 1:**

|  |  |  |
| --- | --- | --- |
| **No.** | **Description** | **Quantity** |
| 1 | Weather station, IoT node, LoRa /w full set of sensors: air temperature, air humidity, rain gauge, leaf wetness, barometric pressure, soil temperature, leaf wetness, global solar radiation, wind speed (mechanical) | 2 |
| 2 | Weather Station, IoT Node (air temp/air hum/rain, LoRa) | 6 |
| 3 | Irrigation Optimization, IoT node | 6 |
| 4 | Soil moisture, temperature, salinity sensor | 4 |
| 5 | Soil moisture sensor | 10 |
| 6 | Pheromone trap /w camera, IoT node | 2 |
| 7 | Air quality, IoT node (2G/3G) eco-monitoring | 1 |
| 8 | LoRa Gateway, outdoor installation | 1 |
| 9 | IoT Platform, Sofware License, 2-year | 1 |
| 10 | Poultry production monitoring, IoT equipment set (production building) | 1 |

**LOT 2**

|  |  |  |
| --- | --- | --- |
| **No.** | **Description** | **Quantity** |
| 1 | Laptop / data analysis | 2 |
| 2 | Laptop / standard | 3 |

**LOT 3**

|  |  |  |
| --- | --- | --- |
| **No.** | **Description** | **Quantity** |
| **1** | TV Screen Panel HDMI Classroom | 2 |

**LOT 4**

|  |  |  |
| --- | --- | --- |
| **No.** | **Description** | **Quantity** |
| 1 | Hydrostatic balance / Density-meter, Lab Grade | 1 |

***II Submitation of bids by lots***

Bidders may quote for one or more lots. Each Lot shall be evaluated and contract awarded separately to the firm(s) offering the lowest evaluated price for each Lot (prices quoted shall correspond to 100 % of the items specified for each lot and to 100% of the quantities specified for each item of a lot).

***III Bid should contain:***

1 General part:

* Bidder’s name, address and tax identification number;
* Contact number of the authorized representative negotiating with unlimited authority in relation to the subject of procurement;
* Bidder’s references;
* A warranty period for supplied goods
* Digital (CD, Excel sheet, MC Word) and paper form bids (original plus two copies)

2 Commercial part:

* Bids must be submitted with the unit prices, with and without VAT;
* The total value of the listed items, and the total value of the bid in euros, with or without VAT;
* Indicate the payment schedula (advance payment is not acceptable)

***IV Minimum requirements that a bid must meet:***

* Compliance with the requirements set in the tender documentation;
* University of Donja Gorica cannot be conditioned by the submission of bank guarantees or advance payment
* Bid must be valid obligatory for a period of 60 days. University of Donja Gorica reserves the right to extend this period.

***V Conditions of execution:***

In case that the selected bidder gives up from the execution of the contract, or fulfills the obligations contrary to the contract, the University of Donja Gorica may contact the second-ranked bidder to conclude the contract.

***VI Bid evaluation criteria:***

In order for the bid to be considered, it must meet the requirements of the general and commercial part of the bid. Bids that do not meet the above conditions will not be considered.

The evaluation of bids is performed as follows:

• Price ……………………………… .. 100 points

***VII Submission of bids:***

It is obligatory to submit the general and commercial part of the offer in special and sealed envelopes with an indication on the envelope whether it is a general or commercial part of the offer.

Both envelopes should be submitted in the third sealed envelope to the archives of the University of Donja Gorica Podgorica (Street: Oktoih 1) on working days from 09.00-16.00, with the remark:

***For the tender for the procurement of equipment for the needs of the ERASMUS + project "VIRAL" - Do not open except in the presence of the tender commission***

The deadline for submission of bids is May 28th , 2021, by 12:00 noon.

Contact person:

MSc Jovana Drobnjak

E-mail: [jovana.drobnjak@udg.edu.me](mailto:jovana.drobnjak@udg.edu.me)

**Annex 1**

**Technical specification**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Description** | **Unit**  **Measures**  **Col.** | **The offered goods have the required technical characteristics**  **Yes/No** | **Unit price of the item - Euro VAT excluded** | **Total**  **item price-Euro VAT excluded**  **(6) = (3) x (5)** |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
|  | **LOT 1** |  |  |  |  |
| **1** | **Weather station, IoT node, LoRa /w full set of sensors: air temperature, air humidity, rain gauge, leaf wetness, barometric pressure, soil temperature, leaf wetness, global solar radiation, wind speed (mechanical)**  Characteristics:   * Enclosure: UV resistant, IP65 or similar. * Communication LoRa within LoRaWAN network range * Battery power /with Solar panel * Measurement interval logging: every 5/15 minutes   Sensors:   * Rain gauge, min ±5 % accuracy * Air temperature, accuracy ±0.2°C, 0°C to +60°C * Air humidity, ±2 % RH at +23 °C (0% to 90% RH) * Leaf wetness, Dry: max. 0.4 VDC, Wet: min. VCC-0.4 VDC * Solar radiation, abs. error max. 5%, typical 3%, stability: 2% drift on 2-year use * Wind speed, interval: 0 to 50 m/s, gust survival 60 m/s * Soil temperature, interval range:  -55°C to +125°C, accuracy ±0.3°C in range -10°C do +85°C: drift: ±0.2°C | **2** |  |  |  |
| **2** | **Weather Station, IoT Node (air temp/air hum/rain, LoRa)**  Characteristics:   * Enclosure: UV resistant, IP65 or similar. * Communication LoRa within LoRaWAN network range * Battery power /with Solar panel * Measurement interval logging: every 5/15 minutes   Sensors:   * Rain gauge, min ±5 % accuracy * Air temperature -40°C to +125°C, accuracy +/- 0.3 °C in range -10°C to +85°C * Relative air humidity, accuracy +/-2% in range 0-80%: +/-3% in range 80- 100% | **6** |  |  |  |
| **3** | **Irrigation Optimization, IoT node**  Device IoT node for soil moisture monitoring, LoRa, irrigation optimization, connectivity for two soil moisture sensors at two depths (listed as #4 and #5). Optionally, sensors for measuring soil temperature and salinity.  Characteristics:   * Enclosure: UV resistant, IP65 or similar. * Communication LoRa within LoRaWAN network range * Battery power /with Solar panel * Measurement interval logging: every 5/15 minutes   Sensors:   * Please see items #4 and #5 | **6** |  |  |  |
| **4** | **Soil moisture, temperature, salinity sensor**  Type SE600S SENTEK SENZOR,soil moisture, soil temperature, salinity, 60 cm, measuring at each 10 cm - 6 measuring spots   * Moisture/precision: ±0.03 % vol. * Temperature/Accuracy: ±2 °C at 25 °C * Oper. Temp. range: -20°C to +60°C | **4** |  |  |  |
| **5** | **Soil moisture sensor**  Type Teros 10 and/or ECH2O sensor, soil moisture:   * Volumetric water content * Soil calibration: typ. 0.00–0.64 m3/m3 * Resolution: typ. 0.001 m3/m3 * Moisture/precision: ±0.03 % vol. * Power supply: typ. 3 – 15 VDC * Output: typ. 0,00 - 2,500 mV | **10** |  |  |  |
| **6** | **Pheromone trap /w camera, IoT node**  Smart trap, pheromone trap with camera 10MP, with sticky plates:   * Memory: 1 GB * Internet connection UMTS/LTE * GPS receiver * Transmission interval: Max. 3 times per day, (typ. once) * Camera: 10 megapixel camera * Battery power /with Solar panel | **2** |  |  |  |
| **7** | **Air quality, IoT node (2G) eco-monitoring**  Air quality measuring device with cable supply. . 2G communication. Power supply 220V. Sensors: RH, T, P, PM (PM1, PM2.5, PM10), NO2, CO, O3, SO2.  Sensors for gas concentration:   * + O3 (0-5ppm),   + NO2 (0-20ppm),   + SO2 (0-100ppm),   + CO (0-50ppm) * Enclosure, UV resistant, IP65 or better | **1** |  |  |  |
| **8** | **LoRa Gateway, outdoor installation**   * 8 - channels, * Backhaul connectivity (Eth/3G/4G/WIFI) * Long range over 10 km Radius * LoRaWAN Class A and Class C * Enclosure, UV resistant, IP67 or better * Embedded Network Server and MQTT protocols * GPS receiver for data synchronization | **1** |  |  |  |
| **9** | **IoT Platform, Sofware License, 2-year**  Software standard license for precision agriculture (orchard), characteristics:   * digital platform "in the cloud" for collecting, aggregating and displaying current and historical measurement data from installed devices (provided for in items # 1 to # 8) * the platform should provide an integral insight into the activities on the plots and their connection with the existing information systems (eg accounting) * the platform should be modular and provide the possibility to analyze the collected data * ensured scalability and reliability, as well as compliance with data privacy regulations * to contain expert modules: Prediction of disease and pest occurrence, Irrigation optimization with instructions, Field book | **1** |  |  |  |
| **10** | **Poultry production monitoring, IoT equipment set (production building):**   * IoT poultry device TRH (3 UNITS), with sensors for monitoring air temperature and humidity:   + Temperature -30℃ - +70℃, precision 0°C to + 70°C (±0.3°C), -30°C to 0°C (±0.6°C)   + Rel. humidity, 0% - 100%, resolution 0,5%, accuracy 10% to 90% RH (±3%), under 10% and above 90% RH(±5%)   + Battery powered   + Communication LoRa   + Enclosure IP67 or better * CO2 concentration sensor (2 PIECES)   ◦ range: (0 to 40000 ppm)  ◦ accuracy: ± (30 ppm + 3% MV)  ◦ Battery powered  ◦ LoRa communication  ◦ IP66 protection and better   * Ammonia sensor (NH3) (2 PIECES)   ◦ Range: 0 ~ 100ppm  ◦ Battery powered  ◦ LoRa communication  ◦ Protection IP67 or better   * Device with microphone and camera (1 PIECE) for recording poultry in a farm building   ◦ Camera: IP 4MP bullet IC camera, Operating temp. -40 ° C ~ + 60 ° C, Protection IP67 or better  ◦ Microphone: Frequency 20 Hz - 20000 Hz, Sensitivity -45 dB, Sound pressure level 120 dB   * WiFi / 4G communicationLoRa gateway for indoor installation (1 UNIT)   + Up to 8 sim. channels   + LoRaWAN Class A and Class C   + Backhaul Connectivity (Eth/WIFI/3G/4G)   + Long range over 10 km radius   + Embedded Network Server protokol * Software license (2-year period) per the set for precision agriculture (poultry farm) for communication with devices provided in the set:   + visualization of current and historical data,   + activity book with analysis,   + biosafety guide,   + digital assistant, calculator,   + stress detection | **1** |  |  |  |
| **Total bid price - VAT excluded** | | | | |  |
| **Discount \_\_\_% expressed in EUR** | | | | |  |
| **Total offer price with discount included - EUR VAT excluded** | | | | |  |
| **VAT-EUR** | | | | |  |
| **TOTAL OFFER PRICE (with discount included) EUR VAT excluded** | | | | |  |

**LOT 2**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Description** | **Unit**  **Measures**  **Col.** | **The offered goods have the required technical characteristics**  **Yes/No** | **Unit price of the item - Euro VAT excluded** | **Total**  **item price-Euro VAT excluded**  **(6) = (3) x (5)** |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
|  | **LOT 2** |  |  |  |  |
| **1** | **Laptop / data analysis**   * CPU: Intel Core i5 or i7 (min. 8th Generation) * RAM: min. 16GB DDR4 2133MHz * HDD: min. 512 GB SSD drive * VGA: integrated and special from min. 2GB * Screen: 14 ”or 15.6“ * Resolution: 1920x1080 FHD * Color: black or grey * Ports: 1x HDMI, 1x USB-C, 2x USB 3.0, 3.5 mm Combo Audio Jack, SD card reader (optional), 1x RJ45 Gigabit LAN (optional) 1x VGA (optional), 1x Disply Port * Network card: 802.11ac Wi-Fi, Bluetooth 4.1 or better | **2** |  |  |  |
| **2** | **Laptop / standard**   * CPU: Intel Core i3 or i5 (min. 8th Generation) * RAM: min. 8GB DDR4 2133MHz * HDD: min. 256 GB SSD * VGA: integrated and special from min. 2GB * Screen: 13 or 14 “ * Specifications - Resolution: 1920x1080 FHD * Color: black or gray * Port: 1x HDMI, 1x USB-C, 2x USB 3.0, 3.5 mm Combo Audio Jack, SD card reader (optional), 1x RJ45 Gigabit LAN (optional) 1x VGA (optional), 1x Disply Port (optional) * Network card: 802.11ac Wi-Fi, Bluetooth 4.1 or better | **3** |  |  |  |
| **Total bid price - VAT excluded** | | | | |  |
| **Discount \_\_\_% expressed in EUR** | | | | |  |
| **Total offer price with discount included - EUR VAT excluded** | | | | |  |
| **VAT-EUR** | | | | |  |
| **TOTAL OFFER PRICE (with discount included) EUR VAT excluded** | | | | |  |

**LOT 3**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Description** | **Unit**  **Measures**  **Col.** | **The offered goods have the required technical characteristics**  **Yes/No** | **Unit price of the item - Euro VAT excluded** | **Total**  **item price-Euro VAT excluded**  **(6) = (3) x (5)** |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
|  | **LOT 3** |  |  |  |  |
|  | **TV Screen Panel HDMI Classroom**  Tip NEC-V652-65" or similar/better   * Maximum value 450cd/m² * Standard value 320cd/m². * Resolution 1,920 x 1,080. * Horizontal 178°.Vertical 178°. 4,000:1 | **2** |  |  |  |
| **Total bid price - VAT excluded** | | | | |  |
| **Discount \_\_\_% expressed in EUR** | | | | |  |
| **Total offer price with discount included - EUR VAT excluded** | | | | |  |
| **VAT-EUR** | | | | |  |
| **TOTAL OFFER PRICE (with discount included) EUR VAT excluded** | | | | |  |

**LOT 4**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No.** | **Description** | **Unit**  **Measures**  **Col.** | **The offered goods have the required technical characteristics**  **Yes/No** | **Unit price of the item - Euro VAT excluded** | **Total**  **item price-Euro VAT excluded**  **(6) = (3) x (5)** |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
|  | **LOT 4** |  |  |  |  |
| **1** | **Hydrostatic balance / Density-meter, Lab Grade**   * Minimum requirements:   + Measurement Range: 0,7g/cm3–1,25 g/cm3   + Accuracy ±: 0.0005 g/cm3   + Repeatability: 0.00005 g/cm3   + Resolution: 0.0001 g/cm3 * With Temperature control(+/- 0,1°C); from 15°C to 50°C * Includes automatic calculation for density, specific gravity, alcohol content. * Includes IQ/OQ installation according to the ISO 17025, transport, warranty | **1** |  |  |  |
| **Total bid price - VAT excluded** | | | | |  |
| **Discount \_\_\_% expressed in EUR** | | | | |  |
| **Total offer price with discount included - EUR VAT excluded** | | | | |  |
| **VAT-EUR** | | | | |  |
| **TOTAL OFFER PRICE (with discount included) EUR VAT excluded** | | | | |  |

1. The Call for Proposals was written in accordance with the Guidelines for Use of the Grant (Erasmus+ Programme Capacity-Building projects in the field of Higher Education (E+CBHE) For grants awarded in 2015 under Call EAC/A04/2014) and the Law of public procurement ("Gazette of Montenegro", no. 042/11 from 15.08.2011, 057/14 from 26.12.2014, 028/15 from 03.06.2015, 042/17 from 30.06.2017). [↑](#footnote-ref-1)