

ANNEX 1 - SCHEDULE OF REQUIREMENTS

Nr.	Technical Specifications	Measure unit	Total Quantity
LOT 1: EDUCATIONAL SCIENCE MEASUREMENT AND DYNAMICS EQUIPMENT			
1.1.	Item 1.1. Digital Microscope type 1 (Standalone) - Key Features / Requirements: Digital LCD screen; built-in camera; suitable for biology/chemistry classrooms - Main Type: Benchtop/Standalone - Digital LCD screen: minimum 3.5" - Digital Camera Resolution: 5 MP - Video Resolution: Minimum 640x480p - Magnification Range: 40x – 400x (optical), up to 1600x (digital zoom) - Focusing Range: 0-110 mm - Illumination: Minimum 8 LED bulbs - Compliance & Safety: EN ISO 10936 - Connectivity: USB output, SD card slot - Additional features: 180° rotatable angle for easy image sharing - Power & Battery: AC power supply; optional rechargeable battery (2000 mAh up to 3 hours) - Included Accessories: - Minimum 5x prepared slides kit - SD card (≥2 GB) - dust cover - bag for transportation - adaptor - Documentation: User manual, lab activity guide, cleaning/maintenance instructions in Romanian, in Russian and/or English. - Warranty: minimum 2 years	unit	20
1.2.	Item 1.2. School Monocular Microscope - Key Features / Requirements: Optical monocular microscope for teaching; sturdy build; adjustable illumination - Microscope Type: Compound Optical (Standard Lab/Educational) - Viewing Head (Eyepiece): Monocular, 45° inclined, 360° rotatable - Aperture: WF10x, 16x - Microscope objective 4X, 10X, 40X - Magnification: 40x – 400x - Stage: minimum 110 × 110 mm plate with specimen holder system - Stand: Metal, stable, fixed to base with coarse and fine focus knobs on both sides - Illumination: 220V / 110V incandescent lamp - Condenser: Bright field condenser (N.A. 0.65) with iris diaphragm - Power & Battery: AC power (LED illumination) or rechargeable batteries. - Accessories (Minimum): At least 10 slides (min. 25x75mm), 10 cover glass (min 18x18 mm), immersion oil, dust cover, spare bulb/LED. - Documentation: User manual, teacher's lab guide, maintenance instructions in Romanian, in Russian and/or English. - Warranty: minimum 2 years	unit	150
1.3.	Item 1.3. Laboratory Centrifuge (Educational use) LCD Display	unit	10

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	- Speed Range: 300 – 5,000 rpm - Capacity: minimum 6 × 15 mL tubes - Low noise: 52 dB - Speed accuracy: +/-20 rpm - Safety: - Automatic imbalance detection. - Automatic lid-lock release after running. - Overheating protection. - Operations Program: Minimum two single-key programs. - Power & Battery: AC power (220 V, 50 Hz); power-safe design. - Accessories (at least): 1 rotor (6 × 15 mL) - tube adapters - lid lock key - Documentation: User manual, safety instructions, cleaning/maintenance guide in Romanian, in Russian and/or English. - Warranty: minimum 2 years																																						
1.4.	Item 1.4. Digital Multimeter - Display: Large LCD Display with minimum 3.5 digits - Measurement Type: True RMS (Root Mean Square) capability for AC voltage. - DC Voltage Range: 200 mV to at least 600 V (or 1000 V); For the range 0-200 mV, the minimum resolution is 0.1 mV; Accuracy: +/- (0.5% of reading +3 digits) or better. - AC Voltage Range: 200 mV to at least 600 V (or 750 V); For the range 0-200 mV, the minimum resolution is 0.1 mV. Accuracy: +/- (1.5% of reading +4 digits) or better. - For voltage ranges above 2 V, accuracy (DCV/ACV): +/- (1.2% of reading +5 digits) or better. - Current (DC/AC): 0–20 A, <table border="1"> <thead> <tr> <th colspan="2">DC Current</th><th colspan="2">AC Current</th></tr> <tr> <th>Current Range</th><th>Resolution</th><th>Current Range</th><th>Resolution</th></tr> </thead> <tbody> <tr> <td>20 µA</td><td>10 nA</td><td>20 µA</td><td>10 nA</td></tr> <tr> <td>200 µA</td><td>100 nA</td><td>200 µA</td><td>100 nA</td></tr> <tr> <td>2000 µA</td><td>1 µA</td><td>2000 µA</td><td>1 µA</td></tr> <tr> <td>20 mA</td><td>10 µA</td><td>20 mA</td><td>10 µA</td></tr> <tr> <td>200 mA</td><td>100 µA</td><td>200 mA</td><td>100 µA</td></tr> <tr> <td>2 A</td><td>1 mA</td><td>2 A</td><td>1 mA</td></tr> <tr> <td>20 A</td><td>10 mA</td><td>20 A</td><td>10 mA</td></tr> </tbody> </table> - Temperature, accuracy: -20°C~120°C±(1.0% + 4) - Resistance range, accuracy: (200 Ω~200 M Ω)±(1.0% of rdg + 10dgts) with 1 Ω resolution for the 0-200 Ω range. - Capacitance Range (F): 20 nF–200 µF. - Frequency Range (Hz): 2 kHz–200 kHz.	DC Current		AC Current		Current Range	Resolution	Current Range	Resolution	20 µA	10 nA	20 µA	10 nA	200 µA	100 nA	200 µA	100 nA	2000 µA	1 µA	2000 µA	1 µA	20 mA	10 µA	20 mA	10 µA	200 mA	100 µA	200 mA	100 µA	2 A	1 mA	2 A	1 mA	20 A	10 mA	20 A	10 mA	unit	170
DC Current		AC Current																																					
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	• Diode and Continuity: YES • Safety Rating: CAT III 600 V minimum, or CAT II 1000 V. • Input Impedance: 10 MΩ for voltage ranges. • Protection: Overload Protection on all ranges, 500 V or more for resistance/low ranges. • Features: Auto-Ranging, Data Hold, and Low Battery Indicator. • Warranty: 2 years		
1.5.	Item 1.5. Amperemeter • Device designed to measure direct current intensity. • Range: -0.2~0.6 A; -1~0~3 A.; • Accuracy: ± 2.5% f.S.; • Potential drop: 75mV; • Dimensions: 133X97X100 mm; • Weight: 0.3 kg; • Normal scale: 0~1 A, 0~5 A.	unit	27
1.6.	Item 1.6. Voltmeter • Device designed to measure alternating current voltage. • Range: 0~5 V; 0~3 V~15 V; 0~5 V~15 V; • Accuracy: ± 2.5% f.; • Dimensions: 133X97X100 mm; • Weight: 0.3 kg.	unit	27
1.7.	Item 1.7. Digital Timer • Resolution/Precision: ±0.01 seconds or better • Timing Range: At least 9 hours, 59 minutes, 59.59 seconds (10 hours) • Memory/Functions: Split/Lap Time Memory • Durability & Readability: Large LCD Display (min. 10 mm digit height) and Shock-resistant casing • Ergonomics/Mounting: Lanyard/Neck Strap included and a Magnetic/Clip-on back • Power Source: Common battery type (AA or AAA) with long life and Low Battery Alarm	unit	150
1.8.	Item 1.8. Educational Electronics Kit for Building and Exploring Circuits • Focus/Theme: Extreme Electronics, Electromagnetism, Digital Circuits, Computer Interfacing. • Scope of Experiments: minimum 800 practical experiments • Included Components (Key): Photoresistor, Power Amplifier, Variable Capacitor, Analog Meter, Solar Cell, FM Radio Module, Voice Recording IC, Transformer, and Computer Interface. • Modular, interconnectable elements in safe casings, mounted on a support plate. • illustrated manual or link (in Romanian, in Russian and/or English) with clear descriptions, minimum 800 activities grouped by difficulty. • Safety & Power: Max working voltage: Sub 12 V. Compatible with AA, 9 V batteries, or 6–12 V adapter (no mains power). Protected against short circuits; meets CE/RoHS standards. • Compartmented storage box included. Compatible with extensions/supplementary sets.	unit	150

Nr.	Technical Specifications	Measure unit	Total Quantity
	Warranty: minimum 1 year		
1.9.	Item 1.9. Digital Caliper - Measuring Range: Up to 150 mm - Precision: 0.01 mm - Data Output: Digital LCD display (Manual recording required) - Material: Stainless Steel with an IP Rating (e.g., IP54 or IP67) - Units: Metric (mm) - Functions: Auto power-off, Zero-setting, Data Hold, Low Battery Indicator - Warranty: 2 years	unit	150
1.10	Item 1.10. Ball Track (Ball Ramp) - Material (Main Unit): Durable Metal - Dimensions (Main Unit): 300 mm×35 mm×80/40 mm (Length x Width x Height/Base) - Collision Medium: Minimum 3 balls of different sizes included (for collision study). - Ball Diameter: Different sizes, for use in collision study. - Setup/Adjustability: Leveling Screws, Angle Adjuster, and Bubble Level. - Measurement Integration: Integrated Photogate/Sensor Support - Key Experiments: Primarily for the study of collisions (Conservation of Momentum). - Warranty: 2 years	unit	10
1.11	Item 1.11. Coated Neodymium Magnets - Magnet Type: Neodymium (NdFeB) - Dimensions (Diameter × Thickness): Min. 20 mm×5 mm - Protective Coating/Casing: Rubber coating (or high-grade Nickel coating). - Minimum 8 magnets/pack - Pull/Lifting Capacity: Min. 5 kg	pack	10
1.12	Item 1.12. High-Precision Digital Scale (Balance) - Max Capacity: minimum 0–200 g - Accuracy / Readability: 0.001 g or better - Weighing Pan/Tray: Stainless Steel - Display: LCD display - Functions: Tare Zero, Calibration function, Unit conversion - Power Supply: 220 V Mains Charger - Warranty: 1 year	unit	20
1.13	Item 1.13. Two-Arms Scale (Balance) - Scale Type: Two equal arms, two pans, metal support. - Measuring Method: Balancing bodies with calibrated weights. - Max Capacity: minimum 200 g - Sensitivity: 10 mg (0.010 g)	unit	50

Nr.	Technical Specifications	Measure unit	Total Quantity																																													
	- Marked weights set (milligrams/grams): milligrams <table><tr><td>Mass, (mg)</td><td>10</td><td>20</td><td>50</td><td>100</td><td>200</td><td>500</td></tr><tr><td>Absolute error, (mg)</td><td>1</td><td>1</td><td>1</td><td>1</td><td>2</td><td>3</td></tr><tr><td>Quantity, (pcs/set)</td><td>1</td><td>2</td><td>1</td><td>1</td><td>2</td><td>1</td></tr></table> - Marked weight set: grams <table><tr><td>Mass, (g)</td><td>1</td><td>2</td><td>5</td><td>10</td><td>20</td><td>50</td><td>100</td></tr><tr><td>Absolute error, (mg)</td><td>4</td><td>6</td><td>8</td><td>12</td><td>20</td><td>30</td><td>40</td></tr><tr><td>Quantity, (pcs/set)</td><td>1</td><td>2</td><td>1</td><td>1</td><td>2</td><td>1</td><td>1</td></tr></table> - Reference dimensions (L×W×H): ~300×140×250 mm - Reference pan Diameter: ~90 mm - Warranty: 1 year	Mass, (mg)	10	20	50	100	200	500	Absolute error, (mg)	1	1	1	1	2	3	Quantity, (pcs/set)	1	2	1	1	2	1	Mass, (g)	1	2	5	10	20	50	100	Absolute error, (mg)	4	6	8	12	20	30	40	Quantity, (pcs/set)	1	2	1	1	2	1	1		
Mass, (mg)	10	20	50	100	200	500																																										
Absolute error, (mg)	1	1	1	1	2	3																																										
Quantity, (pcs/set)	1	2	1	1	2	1																																										
Mass, (g)	1	2	5	10	20	50	100																																									
Absolute error, (mg)	4	6	8	12	20	30	40																																									
Quantity, (pcs/set)	1	2	1	1	2	1	1																																									
1.14	Item 1.14. Water Distiller - Capacity: Minimum 4 L - Distillation Rate: ~1 L/hour. - Cooling System: Air cooling system. - Construction Material: Plastic body, Stainless steel inner pot. - Power Consumption: ~750 W. - Power Supply: 220 V, 50 Hz - Warranty: 2 years	unit	10																																													
1.15	Item 1.15. Electric Hot Plate (For Educational and General Use) - Purpose: General laboratory heating, boiling liquids, simple chemical reactions. - Power Supply: 220 V/50 Hz - Minimum Power: 800 W to 1500 W (400 W is low. It will heat liquids but will be slow, especially for boiling larger volumes.) - Heating Element Type: Mandatory enclosed heating element. - Control/Safety: Adjustable thermostat (temperature control), Overheat protection, Indicator light. - Plate Diameter/Size: 100 mm to 150 mm - Warranty: 1 year	unit	10																																													
1.16	Item 1.16. Digital pH Meter - pH Measuring Range: 0.00–14.00 pH - Resolution (R): 0.01 pH - Accuracy / Precision (A): ±0.01 pH or better - Display: LCD or LED with temperature reading display. - Components/Included: pH electrode combination and accessories, 220 V power supply. - Additional Functions: Automatic Temperature Compensation (ATC), Multi-point calibration, Electrode slope display. - Warranty: 2 years	unit	10																																													
1.17	Item 1.17. Device for Demonstrating Electrolytic Dissociation	unit	10																																													

Nr.	Technical Specifications	Measure unit	Total Quantity
	- Purpose: Demonstration experiments: Electrolysis, Galvanization, and Liquid Conductivity. - Key Components: Transparent container, durable, chemically inert cell body (glass or clear acrylic). - Circuit Indicator: Low-voltage LED or 3.5 V bulb with current limiting resistor. - Electrodes Included: Graphite rod, Copper plate, Lead plate, and Zinc plate. - Connectors: Robust, corrosion-resistant terminals (banana plug or screw type). - Power Source: Separate low-voltage DC power source (3 V to 12 V) with adjustable current limiting. - Warranty: 2 years		
1.18	Item 1.18. Extension cord (type 1) - Length: 3m - Color: black - Number of sockets: 5	unit	10
1.19	Item 1.19. Extension cord (type 2) - Length: 5m - Color: black - Number of sockets: 5	unit	20
1.20	Item 1.20 Training Program Organization and execution of a training plan consisting of a total of 4 online sessions, specifically designed for teachers from the beneficiary Model Schools: - three (3) core online workshops - one (1) online follow-up workshop The specific types of experiments required for each workshop are detailed in Annex 5: Training Program . Please consult this annex to fully understand the complexity and the expected level of practical engagement.	unit	4
	Warranty and after-sales requirements LOT 1:		
	Warranty (full) between 1-2 years minimum		
	Service Center: Availability of maintenance, repair or replacement units (on site at the request of beneficiary schools). While the selected vendor shall provide technical support via email.		
	Brand new replacement if unit is beyond repair (withing warranty period)		
	The items' price must be inclusive of all necessary accessories for operation, including batteries (if applicable), and charging cables. All delivered items must be new and not refurbished.		
	Delivery and Distribution to Final Beneficiaries Costs: Delivery Locations: 10 locations from Moldova Please refer to Annex 6		
	DELIVERY Deadline: By 20.12.2025 preferable (or fastest possible)		
	LOT 2: EDUCATIONAL LABORATORY SENSORS		

Nr.	Technical Specifications	Measure unit	Total Quantity										
2.1.	Item 2.1. Wireless CO₂ Sensor (Carbon Dioxide) - Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. - The sensor should be suitable for use in educational laboratories and classroom environments. - The sensor must measure CO₂ in air, and CO₂ dissolved in liquid using the impermeable sleeve in section 2.2, and the measurement range must cover at least 0–100,000 ppm. - The sensor must measure CO₂ in air and CO₂ dissolved in liquid using the impermeable sleeve in item 2.2 and the measurement range must cover at least 0–100,000 ppm. - The sensor must be compatible with standard educational data acquisition platforms/software (Windows, Linux, Android, iOS, Chromebook). - Device must be portable, rechargeable, and designed for repeated use in classroom/lab experiments. - Measurement parameter: Concentration of carbon dioxide (CO₂) gas in gas mixture and dissolved gas. <table><tr><th>Measurement range</th><th>Resolution</th></tr><tr><td>0-1000 ppm: ± 100 ppm</td><td>2 ppb (0,002 ppm)</td></tr><tr><td>1000-10000 ppm: ± 5% from the read + 100 ppm</td><td><20 ppb (0,02 ppm)</td></tr><tr><td>10000-50000 ppm: ± 10% from the read values</td><td><200 ppb (0,2 ppm)</td></tr><tr><td>50000- 100000 ppm: ± 15% from the read values</td><td><2000 ppb (2 ppm)</td></tr></table> - Average resolution over the measurement range: <2 ppm. - Response time (T90): ≤ 60 seconds. - Warm-up time: ≤ 3 minutes - Temperature compensation: Built-in automatic temperature compensation. - Operating temperature: Measurement range –10 °C to +50 °C, accuracy ±0.5 °C. - Relative humidity sensor: Range 0–95%, accuracy ±3%. - Wireless interface: Bluetooth 4.0 or higher and/or USB. - Data transfer: Real-time streaming and logging. - Software compatibility: - Must work with commonly used educational software or vendor-supplied software. - Capable of displaying graphs, exporting data (CSV, XLSX, PDF). - Multi-device support: Ability to connect multiple sensors to one device simultaneously: minimum 5. - Power & Battery: - Battery type: Rechargeable LiPo - Battery life: ≥ 18 hours in logging mode; ≥ 15 hours in connected mode - Charging interface: USB connection	Measurement range	Resolution	0-1000 ppm: ± 100 ppm	2 ppb (0,002 ppm)	1000-10000 ppm: ± 5% from the read + 100 ppm	<20 ppb (0,02 ppm)	10000-50000 ppm: ± 10% from the read values	<200 ppb (0,2 ppm)	50000- 100000 ppm: ± 15% from the read values	<2000 ppb (2 ppm)	unit	10
Measurement range	Resolution												
0-1000 ppm: ± 100 ppm	2 ppb (0,002 ppm)												
1000-10000 ppm: ± 5% from the read + 100 ppm	<20 ppb (0,02 ppm)												
10000-50000 ppm: ± 10% from the read values	<200 ppb (0,2 ppm)												
50000- 100000 ppm: ± 15% from the read values	<2000 ppb (2 ppm)												

Nr.	Technical Specifications	Measure unit	Total Quantity
	• Included Accessories: USB charging cable. • The kit should include a 200-300 ml sample bottle compatible with the sensor. • Documentation: ○ Quick start guide and full user manual (in Romanian, in Russian and/or English, electronic version acceptable). ○ Access to vendor's software platform or app. • Warranty: minimum 3 years		
2.2.	Item 2.2. Waterproof Sleeves for CO₂ Sensor • Compatibility: Must fit the specific Wireless CO₂ Sensor model (item 2.1.) • Usability: The sleeve must be reusable, durable, and easy to clean for repeated classroom/laboratory experiments. • Durability: Capable of withstanding at least 50 uses under normal laboratory conditions. • Protection level: Must provide watertight sealing to protect the sensor electronics from liquid exposure. • Materials: ○ Sleeve made of transparent, durable plastic or fiber or polymer. ○ Gas-permeable membrane that allows CO₂ to diffuse into the sleeve for accurate sensor measurement while blocking water. ○ Membrane must be resistant to tearing, chemical degradation, and microbial growth. • Operating conditions: ○ Suitable for immersion in water or aqueous solutions. ○ Temperature operating range: -10 °C to +50 °C. ○ Resistant to standard laboratory cleaning agents. • Included Accessories: • Each waterproof sleeve set must include: ○ Minimum 5 sleeves per pack (if disposable membranes are included). ○ At least 1 spare gas-permeable membrane or cap per pack. • Safety: Must be made from non-toxic, laboratory-safe materials. Not interfering with sensor accuracy more than +/-5% • Documentation: User instructions for correct installation and maintenance in Romanian, in Russian and/or English. • Cleaning and storage guidelines.	pack	10
2.3.	Item 2.3. Quad Temperature Sensor • Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. • Functional Requirements: ○ Capable of measuring air, liquid, and solid temperatures with fast response time. ○ Wireless data transfer via Bluetooth and optional USB connection. ○ Internal rechargeable or replaceable battery for mobile use. • Key Technical Specifications:	set	10

Nr.	Technical Specifications	Measure unit	Total Quantity
	○ Measurement Range: –30.0°C to +125.0°C (or better) ○ Accuracy: +/-0.5°C (or better) ○ Resolution: 0.05°C ○ Sampling Rate: Minimum 10 Hz ○ Units of Display: °C, K (°F optional) ○ Connectivity: Bluetooth (BLE) and USB ○ Software Compatibility: Windows, macOS, iOS, Android, Chromebook ○ Power Supply: Rechargeable battery (minimum 10 hours of continuous operation) ○ Charging Interface: USB cable for data transfer and charging ○ Compliance & Safety: Made of laboratory-safe, non-toxic materials; compliant with educational lab safety standards ● Documentation: User manual, safety instructions, calibration guide in Romanian, in Russian and/or English. ● Warranty: minimum 3 years ● Accessories (Minimum Supply): ○ 1× USB cable for data acquisition and charging ○ 1× Skin/surface temperature probe ○ 2× Stainless steel temperature probes ○ 2× Fast response surface temperature probes ○ 4× Fast response general-purpose probes (–10°C to +60°C) Probe Specifications: ● Fast Response Temperature Probe ○ Purpose: Fast-response temperature measurement in gases, liquids (chemically neutral), solids, and powders ○ Temperature Range: –30°C to +105°C ○ Construction: PVC cable (1 m), pointed tip probe ● Fast Response Surface Temperature Probe ○ Purpose: Measuring temperature gradients on flat or irregular solid or biological surfaces ○ Temperature Range: –10°C to +70°C ○ Features: Small, PVC-coated transducer for high-speed response ● Stainless Steel Temperature Probe ○ Purpose: Temperature measurement in liquids or powdered solids ○ Temperature Range: –30°C to +130°C ○ Probe Length: 15 cm ○ Cable Length: 1 m ○ Material: 304 stainless steel (corrosion-resistant) ● Wireless Data Acquisition Interface ○ Purpose: The device must serve as a Wireless Data Acquisition Interface, capable of connecting sensors to a host device (e.g., tablet, PC) via Bluetooth for real-time data collection. ○ Connectivity: Must support both USB (for charging and wired data transfer) and Bluetooth 5.2 (or a newer standard) for wireless data transfer. ○ Wireless Range: Must provide a minimum Bluetooth range of 30 meters in an unobstructed environment. ○ Battery Type: Must be powered by a rechargeable LiPo battery.		
2.4.	Item 2.4. Wireless Light Sensor ● Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at	unit	10

Nr.	Technical Specifications	Measure unit	Total Quantity
	beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. • Key Features: Measures light intensity, PAR (photosynthetically active radiation), and UV where applicable; suitable for indoor/outdoor experiments; wireless transmission. • Spectral Response: 300 nm to 1100 nm • Illuminance Range: 0 – 130,000 lux • Irradiance Range: 0 to 1362 W/m² • PAR Range: 0 to 2400 µmol/m²/s • UV Index Range: 0 to 12 • RGB Range: 0 to 100% of clear LED response (white light) • Maximum Sample Rate: 2 Hz (ambient); 20 Hz (spot) • Connectivity: Bluetooth (BLE) • Software Compatibility: Compatible with Windows, macOS, iOS, Android, Chromebook • Logging: Yes • Datalogging: Yes • Stored Data Points Memory (Logging): >15,000 • Battery - Connected (Data Collection Mode): >210 hr • Battery - Logging (Data Logging Mode): 11 days • Included Accessories (Minimum): ○ Mounting clip • Documentation: User manual, lab activity guide in Romanian, in Russian and/or English. • Warranty: minimum 3 years		
2.5.	Item 2.5. Wireless Optical Dissolved Oxygen Sensor • Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. • Key Features / Requirements: Optical (luminescent) technology, no stirring needed, temperature & salinity compensation; submersible waterproof design; wireless data transmission. • Measurement Range: 0 – 20 mg/L; 0 – 200% saturation • Resolution: 0.01 mg/L • Accuracy (with calibration): ±0.2 mg/L • Accuracy (out of the box): ±0.5 mg/L • Response Time: 90% in 20 sec • Measurements: • Concentration (mg/L) • Saturation (%) • O₂ Gas (in air, qualitative) (%) • Temperature (°C) • Temperature range: 0 to 50°C • Temperature resolution: 0.1°C • Temperature accuracy: 0.2°C • Waterproof Depth (probe): Length of cable (3m) • Safety: Waterproof	unit	10

Nr.	Technical Specifications	Measure unit	Total Quantity
	• Connectivity: Bluetooth (BLE) and USB • Software Compatibility: Compatible with Windows, macOS, iOS, Android, Chromebook • Logging: Yes • Battery Type: Rechargeable LiPo • Stored Data Points Memory (Logging): >25,000 • Battery - Connected (Data Collection Mode): >40 hr • Battery Life (Logging): 45 hrs • Included Accessories (Minimum): • Calibration solution • protective cap • storage bottle • Documentation: User manual, calibration & storage guide in Romanian, in Russian and/or English. • Warranty: minimum 3 years		
2.6.	Item 2.6. Wireless Blood Pressure Sensor with Standard Cuff • Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. • Key Features / Requirements: Oscillometric method; automatic inflation/deflation; standard adult cuff. • Blood Pressure Range: 0 – 260 mmHg • Blood Pressure Resolution: 0.05 mmHg (or better) • Blood Pressure Accuracy: ± 3 mmHg • Heart Rate Range: 36 to 200 bpm • Heart Rate Resolution: 1 bpm • Heart Rate Accuracy: ± 1 bpm • Connectivity: Bluetooth (BLE) and USB • Software Compatibility: Compatible with Windows, Linux, macOS, iOS, Android, Chromebook • Battery Type: Rechargeable LiPo • Battery Life (Connected): >55 hr • Included Accessories (Minimum): ○ 1x Standard adult arm cuff ○ 1x Wireless Blood Pressure Sensor ○ 1x Bladder and pressure release valve • Documentation: User manual, quick start guide, medical safety info in Romanian, in Russian and/or English. • Warranty: minimum 3 years	set	10
2.7.	Item 2.7. Wireless Colorimeter & Turbidity Sensor • Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories.	unit	10

Nr.	Technical Specifications	Measure unit	Total Quantity
	• Key Features: measures both colorimetric absorbance and turbidity; wireless data logging. • Color Detection/Peak Wavelengths: minimum 5 LED wavelengths (400 – 650 nm). • Detection Wavelength Range: +/-25 nm from peak • Absorbance Range: 0.05 to 3 Abs • Transmittance: 0 to 100% • Turbidity Illumination Wavelength: 850 nm • Turbidity Range: 0–400 NTU • Turbidity Accuracy: +/-5% NTU • Path Length: 1 cm cuvettes • Connectivity: Bluetooth (BLE) and USB • Software Compatibility: Compatible with Windows, Linux, macOS, iOS, Android, Chromebook • Battery Type: Rechargeable LiPo • Wireless Data Logging: Yes • Stored Data Points Memory (Logging): >15,000 • Battery - Connected (Data Collection Mode): >80 hr • Battery - Logging (Data Logging Mode): 3 days • Accessories (Minimum): ○ Standard cuvettes and caps (≥10 pcs) ○ 1x 100 NTU calibration blank ○ 1x USB charging cable ○ 2x Storage Box/Cuvette Rack • Documentation: User manual, calibration guide in Romanian, in Russian and/or English. • Warranty: minimum 3 years		
2.8.	Item 2.8. Wireless Heart Rate Sensor • Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. • Key Features: Compare a student's heart rate before, during, and after exercise; Calculate recovery rate after physical activity; Determine the effects of mild stimulants (e.g. caffeine) etc. The sensor must be portable and fully operational during movement. • Measurement Range: 0 – 200 bpm • Accuracy: +/-1 bpm • Resolution: 1 bpm • Default Sample Rate: Every 5 seconds • Maximum Sample Rate: Every 2 seconds • Compliance & Safety: Biocompatible materials • Connectivity: Bluetooth (BLE) • Software Compatibility: Compatible with Windows, Linux, macOS, iOS, Android, Chromebook • Included Accessories (Minimum): ○ 1x battery ○ 1x chest strap (M-XXL) or ear clip or handgrip ○ 1x Bluetooth Heart Rate Replacement Part	unit	10

Nr.	Technical Specifications	Measure unit	Total Quantity
	- Documentation: User manual, classroom usage guide in Romanian, in Russian and/or English. - Warranty: minimum 3 years		
2.9.	Item 2.9. Wireless EKG Sensor - Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. - Key Features: measures electrical signals produced by contractions of the heart or muscles and reports them in real-time. - Voltage Range: 0 to 4.5 mV - Voltage Resolution: 5 μV (or better) - Heart Rate Range: 40– 250 bpm - Heart Rate Resolution: 1 bpm - Default Sample Rate: minimum 250 Hz - Maximum Sample Rate: 1000 Hz - Compliance & Safety: safe low-voltage operation - Connectivity: Bluetooth (BLE) and USB - Logging: Yes - Software Compatibility: Compatible with Windows, Linux, macOS, iOS, Android, Chromebook - Power & Battery: Rechargeable battery; USB charging. - Included Accessories: 1x wireless ekg sensor ≥ 100 disposable electrodes patches 1x alligator clips for electrodes 1x connecting cable - Documentation: User manual, safety instructions, lab activities in Romanian, in Russian and/or English. - Warranty: minimum 3 years	set	10
2.10	Item 2.10. Wireless Spirometer - Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. - Key Features: Wireless, real-time measurement of lung function; rechargeable; real-time data display. - Maximum Sample Rate: 1 kHz - Maximum Flow Rate: +/- 14 L/s; - Flow Resolution: 0.01 L/s - Volume: minimum 10 L - Volume Resolution: 40 mL - Cross contamination efficiency: 99.99% (one in a million) - Connectivity: Bluetooth (BLE) and USB - Logging: Yes	unit	10

Nr.	Technical Specifications	Measure unit	Total Quantity
	- Software Compatibility: Compatible with Windows, Linux, macOS, iOS, Android, Chromebook - Power & Battery: Rechargeable battery, USB charging - Included Accessories (Minimum): - Minimum 1x mouthpiece 1x USB Cable - calibration syringe (optional) - Documentation: User manual, safety & calibration guide, classroom activity suggestions in Romanian, in Russian and/or English. - Warranty: minimum 3 years		
2.11	Item 2.11. Mouthpieces for the Wireless Spirometer - Key Features: Disposable, single-use; hygienic fit for spirometer device (item 2.10.); low resistance to airflow; latex-free, biocompatible; student-safe. - Measurement Range: consumable, designed for single-use filtration of exhaled air - Accuracy: $\geq 99\%$ bacterial & viral filtration efficiency - Compliance & Safety: medical device standards, latex-free. - Pack of ≥ 10 pre-filters - Documentation: Instructions for use, safety compliance info in Romanian, in Russian and/or English. - Shelf life: ≥ 3 years	pack	100
2.12	Item 2.12. Wireless Photogate System for Dynamics - Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. - Applications: Measures time, speed, velocity. - Timing resolution: $\geq 3\mu s$ - Gate Inside Width: 7.2 cm. - Timing accuracy: ± 0.0005 s - Resolution: $3\mu s$? - Connectivity: Bluetooth (BLE) and USB - Software Compatibility: Compatible with Windows, Linux, Android. - Power & Battery: Rechargeable battery, ≥ 12 hrs use and USB charging. - Included Accessories: - Photogate brackets (2 pack) 1x Wireless Smart Gate - Photogate Head - Cart Picket Fences (2 pack) - Documentation: User manual, link to sample physics labs in Romanian, in Russian and/or English. - Warranty: minimum 3 years	set	10
2.13	Item 2.13. Wireless Temperature Sensor with Interchangeable Probes Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility	set	10

Nr.	Technical Specifications	Measure unit	Total Quantity
	and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. • Core Measurement Range (Lower Limit): -30°C (or better) • Core Measurement Range (Upper Limit): $+125^{\circ}\text{C}$ (or better) • Resolution: 0.05°C • Max Sample Rate: 10 Hz (or better) • Connectivity: Bluetooth (BLE) and USB • Accessories (Minimum): 1x Fast Response Probe (3 Pack), 1x Stainless steel skin/surface temperature probe, 1x Stainless steel temperature • Battery Type: Coin Cell • Fast Response Surface Temperature Probe - o Core Applications: Measuring temperature and temperature gradients on planar, irregularly shaped solid, and biological surfaces (e.g., skin surface). - o Response Speed: High response speed achieved through a small, PVC-coated transducer. - o Compatible Media: Gases and gas mixtures; Liquids not chemically aggressive to PVC; Solids with any surface relief. - o Measurement Range: -10°C to $+70^{\circ}\text{C}$. - o Connectivity: Designed for use with temperature sensors/interfaces using 3.5 mm connectors. • Fast Response Temperature Probe - o Features: Fast response temperature measurements in: Gases; Chemically neutral aqueous solutions; Irregular surfaces and solids in powder form. - o Temperature Range: -30°C to $+105^{\circ}\text{C}$. - o Construction: Point probe design with 1 m PVC cable. • Temperature Transmitter with Stainless Steel Probe - o Features: Optimized for temperature measurements in: Liquids; Powdered solids. - o Temperature Range: -30°C to $+130^{\circ}\text{C}$. - o Construction: - o Sheath Material: 304 corrosion-resistant stainless steel. - o Probe Length: 15 cm. - o Cable Length: 1 m.		
2.14	Item 2.14. Wireless Pressure Sensor • Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. • Range 0 to 400 kPa • Resolution: 0.1 kPa • Accuracy: ± 2 kPa • Max Sample Rate: 1 kHz • Maximum Overpressure: at least $2\times$ max operating pressure • Included Accessories: Tubing, Syringe(s), Stoppers, Connectors.	unit	10

Nr.	Technical Specifications	Measure unit	Total Quantity
	• Data Logging (Offline): Yes • Connectivity: Bluetooth (BLE) and USB • Warranty: minimum 3 years		
2.15	Item 2.15. Wireless Weather Sensor with GPS • Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. • Primary Measurands: Wind Speed, Wind Direction, Ambient Temperature, Humidity (relative, absolute), Dew point, Heat Stress Index, Barometric Pressure, Light, UV index, PAR, Irradiance, GPS Position, Altitude, Speed, Magnetic direction. • Range (Air Temp): -40 to 60C) • Resolution (Air Temp): 0.1C • Accuracy (Air Temp): +/-1.5C • Range (Baro. Pressure): 30 to 110 kPa • Resolution (Pressure): 0.1 kPa • Range (Rel. Humidity): 0 to 100% • Range (Wind Speed): 0.5 to 15 m/s • GPS Specs: Position, Altitude (0 to 18,000 m), Speed, Satellite Count, Lat/Lon • Data Logging: Yes • Connectivity: Bluetooth (BLE) and USB • Warranty: minimum 3 years	unit	10
2.16	Item 2.16. Wireless Motion Sensor • Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. • Range (Min to Max): 15 cm to 400 cm • Measures: position, linear velocity and linear acceleration in different directions of motion. 360° rotating head for the sensor element • Resolution: 0.1 cm (1 mm) • Maximum Sample Rate: 250 Hz • Accuracy/Error: 2% • Data Logging (Offline): Yes • Connectivity: Bluetooth (BLE) and USB • Warranty: minimum 3 years	unit	10
2.17	Item 2.17. Wireless Rotary Motion Sensor • Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or	unit	10

Nr.	Technical Specifications	Measure unit	Total Quantity
	certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. • Primary Measurements: Angle, Angular Velocity, Angular Acceleration. • Angle Resolution: minimum 0.0031 rad • Angle Range: Continuous Rotation • Angular Velocity Range: +/- 175 rad/s • Angular Acceleration Range: +/- 100000°/s² • Max Sample Rate: 100 Hz • Max Rotation Rate: 30 rev/s (1800 rpm) • Included Accessories: Dumbbell bar, inertia discs, weights, roller. • Data Logging: Yes • Connectivity: Bluetooth (BLE) and USB • Warranty: minimum 3 years		
2.18	Item 2.18. Wireless Spectrometer • Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. • Spectral Range: 380 to 950 nm • Resolution: 2 to 3 nm • Wavelength Accuracy: +/-4 nm or better • Fluorescence Excitation: 405 nm and 500 nm or better • Light Source: LED-boosted for stability/life • Connectivity: Bluetooth (BLE) and USB • Will include ○ 10x Cuvettes ○ 1x Spectrometry Software ○ 1x The fiber optic cable (1 meter) compatible with the spectrometer • Warranty: minimum 3 years	set	10
2.19	Item 2.19. Wireless Geiger Counter with Sample Holder • Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. • Radiation Detected: Alpha, Beta, Gamma • Measurement Range (Rate): 0...50,000 #/min for counts. Dose rate up to 10 mSv/h. • Measurement Range (Dose Rate): 0.01 µSv/h ...10 mSv/h • Special Features: Sample holder accessory for lab use; clear screen for dose reading for field use. • Resolution: 1 #/min or better • Accuracy: better than +/-10% • Battery & Runtime: >50 hours continuous operation or >1000 mAh capacity.	unit	10

Nr.	Technical Specifications	Measure unit	Total Quantity
	- Connectivity: Bluetooth (BLE) and USB-C - Warranty: minimum 3 years		
2.20	Item 2.20. Wireless Dynamics Cart Demonstration Kit - Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. - Sensor Integration: Integrated Sensors (Force, Acceleration, Position, Velocity). - Wireless Connectivity: Bluetooth (BLE) - Carts: 2x Smart Carts - Force Sensor Range: +/- 50 N - Force Resolution: 0.01 N - Force Sample Rate: 1000 Hz - Acceleration Range: +/- 16 g - Acceleration Resolution: 0.01 g - Position Resolution: 0.1 mm - Track Length: 1.2 m - Key Accessories: Complete set of accessories (Fan, Motor, Pulley, Mass Set, Dampers). - Warranty: minimum 3 years	unit	10
2.21	Item 2.21. Aluminum Dynamics Track - Compatibility: Must be compatible with the Wireless Dynamics Cart Demonstration Kit - Length: minimum 1.2 m - Material: Aluminum - Leveling/Incline: Adjustable Feet for leveling. - Cart Guidance System: Two Cart-Wheel Grooves + T-Slot/Rail - Accessory Attachment: T-Slot/Quick Lock System - Scale: High-Contrast Metric Scale - Dimensional Profile: Rigid, Wide Profile (approx. 100 mm wide) - Flatness Tolerance: Max 0.1 mm deviation - Mass (for Stability): minimum 3.5 kg - Warranty: minimum 3 years	unit	10
2.22	Item 2.22. Ideal Gas Law Apparatus - Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. - Gas Laws Tested: All three major Gas Laws (Boyle's, Charles', Gay-Lussac's). - Volume Measurement: High-Resolution Syringe or Precision Piston/Cylinder.	unit	10

Nr.	Technical Specifications	Measure unit	Total Quantity
	- Pressure Sensor: Absolute Pressure Sensor, Range 0 kPa up to 200 kPa (absolute). - Temperature Sensor: Fast-Response Thermistor (low thermal mass), Range minimum -10 °C up to minimum 100 °C, Resolution maximum 0.01 °C - Key Components: Digital Sensors with Data Acquisition Compatibility. - System Type: Wireless or Wired Interface. - Experiment Type: Flexible system for Isothermal, Isochoric, and Adiabatic/Quick-Compression studies. - Warranty: minimum 3 years		
2.23	Item 2.23. Wireless Conductivity Sensor and Salinity TDS - Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. - Connectivity: Dual connectivity (Wired/USB and Wireless) for flexibility in different lab settings. - Conductivity Range: 0 to at least 30,000µS/cm to cover tap water, brackish water, and concentrated solutions/titrations. - Conductivity Resolution: 0.1 µS/cm - Total dissolved solids - Range: 0 to 28,000 ppm - Resolution: 0.1 ppm - Accuracy: 5% between 100–30,000 ppm - Temperature Range: 0 to 60 °C - Temperature Compensation: Automatic (0 to 35 °C range) - Temperature Resolution: 0.1 °C - Waterproofing/Durability: high-level protection to withstand accidental spills. - Waterproof, resistant to immersion in solutions at depths of up to 1 m for 15 minutes (Protection, IPX7 Classification) - Manual: in Romanian, in English and/or Russian. - Warranty: minimum 3 years	unit	10
2.24	Item 2.24. Wireless pH Sensor - Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. - Range (pH): 0 to 14 - Resolution (pH): 0.01 - Accuracy (pH): +/-0.02 to +/-0.1 - Connectivity: Wireless (BLE) or/and Wired (USB) - Data Logging: Yes - Sample Rate: 50 Hz - Water Resistance: Water resistant	unit	10

Nr.	Technical Specifications	Measure unit	Total Quantity
	- Included Accessories: pH electrode - Manual: preferably in Romanian, in English and/or Russian. - Warranty: 3 years		
2.25	Item 2.25. Wireless Oxygen Gas Sensor - Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. - Measurement Range (Gas): 0% to 100% - Measurement Range (Liquid/Dissolved): 0 to 20 mg/L - Resolution (Gas): 0.1% - Accuracy (Gas): +/-1% to +/-5% - Connectivity: Wireless (BLE) or/and Wired (USB) - Data Logging: >25.000 - Lifespan/Maintenance: USB-C rechargeable lithium polymer battery - Manual: in Romanian, in English and/or Russian. - Warranty: 3 years	unit	10
2.26	Item 2.26. Wireless Temperature Sensor (Chemistry) - Minimum System Interoperability Requirement: The sensor must employ a communication protocol that ensures complete compatibility and seamless operation with existing data collection systems, at beneficiary institutions, utilizing the PASPORT interface standard (or certified equivalent) and their corresponding data loggers/interfaces (e.g., AirLink, 550 Universal Interface, or equivalents) already in use within the beneficiary school laboratories. - Measurement Range: -10C to +110C - Accuracy: +/-0.5C - Resolution: 0.01C - Connectivity: Wireless (BLE) or/and Wired (USB) - Maximum Sample Rate: 10 Hz - Water Resistance: Yes - Data Logging/Storage: >50000 data in sensor memory - Software: Yes - Battery: Coin Cell - Manual: in Romanian, in English and/or Russian. - Warranty: 3 years	unit	10
2.27	Item 2.27. Data Acquisition and Actuator Control Interface - Power Output Ports: Must include at least one (1) auxiliary output port providing both positive and negative DC voltage (e.g., ± 5 VDC) with a minimum total current capacity of 0.7 A. - Motor/Actuator Control Ports: Must include dedicated ports for controlling stepper motors and/or power output modules, preferably utilizing an 8-pin modular jack connection. The system must support automatic identification (Auto-ID) of connected stepper motors and power output modules.	unit	10

Nr.	Technical Specifications	Measure unit	Total Quantity
	• Servo Control Ports: Must include dedicated ports for controlling standard and continuous rotation servos, preferably utilizing a 3-pin connector. These ports must include a built-in servo current sensor for detecting load on the connected servo motor. • Sensor Communication Protocol: Must utilize the I²C (Inter-Integrated Circuit) communication protocol for primary sensor data transfer. • Sensor Connection Type: Must include at least one (1) sensor port, preferably utilizing a 6-pin modular jack connection. • Built-in Acceleration Sensor: Must include an integrated, 3-axis acceleration sensor with a minimum range of $\pm 16g$. • Speaker Frequency Range: Must include a built-in speaker with a functional frequency range of 10 Hz to 10,000 Hz. • Connectivity: Must support both USB and Bluetooth 5.0 or a more recent Bluetooth standard. • Data Logging: The device is expected to function primarily as an interface/controller. • Battery Type: Must include a rechargeable LiPo battery.		
2.28	Item 2.28. Software (pertaining to LOT 2: Sensors) • General Requirements & Accessibility: - o Licensing: Software must be provided either as free-of-charge to download, install, and use, OR covered by a one-time, perpetual (for life) license fee. No recurring subscription fees or per-seat licenses are permitted. - o Operating Systems (Minimum Compatibility): - o Windows (latest stable versions). - o iOS (latest stable versions for iPhone/iPad). - o Android (latest stable versions for phones/tablets). - o Desirable: macOS and ChromeOS/Chromebook compatibility. - o Languages: Support for a minimum one of the widely used educational languages (e.g., English, Russian, Romanian). • Connectivity & Data Acquisition - o Interface Support: Must seamlessly support data acquisition via both Wireless (Bluetooth BLE) and Wired (USB) connections from the sensor hardware. - o Automatic Detection: Must automatically detect and identify connected sensors upon launch or connection. - o Real-time Display: Must provide real-time, graphical display of measurement data (live-streaming). - o Sample Rate Control: Must allow the user to adjust the sensor's sampling rate (from 1 Hz to the maximum supported by the hardware). - o Offline Data Transfer: Must enable the download and import of data logs captured by the sensor's internal memory (offline logging function). • Measurement & Visualization Features - o Graphical Analysis: Must display data on a scalable, zoomable graph with automatic and manual axis scaling. - o Multiple Data Sets: Must be capable of displaying data from multiple sensors (at least 3) simultaneously on the same graph.	unit	10

Nr.	Technical Specifications	Measure unit	Total Quantity
	- o Analysis Tools (Minimum): The software must include built-in tools for: Linear/Curve Fitting; Statistical Analysis (Min/Max/Mean values); Integration and Differentiation functions. - o Data Table: Must present raw measurement data in a clean, scrollable table view synchronized with the graph. - o Units: Must allow for unit selection and display (e.g., °C, K, °F for temperature). • Data Management & Export - o File Format: Must support exporting measurement data in universally readable formats (e.g., .CSV, .TXT) for use in third-party spreadsheets (e.g., Excel, Google Sheets). - o Image Export: Must allow for the easy export of graphs and data tables as image files (e.g., .PNG, .JPG) for lab report inclusion.		
2.29	Item 2.29 Training Program Organization and execution of a training plan consisting of a total of 10 online sessions, specifically designed for teachers from the beneficiary Model Schools: • nine (9) core online workshops • one (1) online follow-up workshop The specific types of experiments required for each workshop are detailed in Annex 5: Training Program. Please consult this annex to fully understand the complexity and the expected level of practical engagement.	unit	10
	Warranty and after-sales requirements LOT 2:		
	Warranty (full) between minimum 3 years		
	Service Center: Availability of maintenance, calibration, repair or replacement units (on site at the request of beneficiary schools). While the selected vendor shall provide technical support via email.		
	Brand new replacement if unit is beyond repair (withing warranty period)		
	The sensor price must be inclusive of all necessary accessories for operation, including batteries (if applicable), data logger, and charging cables. All delivered items must be new and not refurbished.		
	Delivery and Distribution to Final Beneficiaries Costs: Delivery Locations: 10 locations from Moldova Please refer to Annex 6		
	DELIVERY Deadline: By 20.12.2025 preferable (or fastest possible)		
	LOT 3: DOCUMENT SCANNER CAMERAS & NOTEBOOKS		
3.1.	Item 3.1. Document Scanner Camera • Compatibility: i3Touch V-ONE 75 (Android 14) and Win10+ • Important feature: Camera head should NOT be built into the display • Camera Sensor: Min. 1/3.2" CMOS • Image Quality / Resolution (Max): Min. 12 MP • Output Resolution: Min. 3840×2160 (4K) • Frame Rate: Min. 50 fps • Capture Area (Max): At least A3 (297×420 mm) • Optical Zoom (OZ): Min. 17x Optical Zoom • Digital Zoom (DZ): Min. 8x Digital Zoom (in addition to 17x OZ) • Focus: Automatic • Light Source: LED with min. 3 setting positions	unit	38

Nr.	Technical Specifications	Measure unit	Total Quantity
	- Connectivity (Input): Min. 1×HDMI,1×VGA,1×Audio 3.5mm - Connectivity (Output/Ports): Min. 1×HDMI,1×VGA,1×USB-A,1×USB-B,1×Audio 3.5mm,1×SD card - Microscope Adapters: Included (4 specified sizes) - Software Functionality: Full Adnotation, Screen Capture, Video Recording, Zoom/Rotation Control, Freeze, Text/Shape tools. - User manual, quick start guide, and software installation instructions available in Romanian, in Russian and/or English. - Warranty: Minimum 2		
3.2	Item 3.2. Notebook and Accessories - CPU: Processor similar to Core Ultra 5/Ryzen 5, Launch Date Q1' 2024 or later - RAM: 16 GB - Storage: 512 GB SSD - Graphics: Integrated - Display: 15" – 16.2" FHD with Integrated Web Camera - Wireless conn.: Wi-Fi (802.11 AX), Bluetooth - Ports: 2x USB Type-A 5Gbps; 1x USB Type-C 1x Headphone / microphone combo jack (3.5mm); 1x HDMI 1x Ethernet (or compatible external adapter) - Input Device: Keyboard US English/Russian - OS/Software: Microsoft Windows 11 Pro 64-bit English; - MS Office Home & Business (English) - Warranty: 2 years - Included Accessorie: 1x Wireless mouse per notebook; 1x Wired headphones with microphone (3.5 mm. combo jack or USB-A) per notebook.	unit	10
	Warranty and after-sales requirements LOT 3:		
	Warranty (full): minimum 2 years		
	Service Center: Availability of maintenance, repair or replacement units (on site at the request of beneficiary schools). While the selected vendor shall provide technical support via email.		
	Brand new replacement if unit is beyond repair (withing warranty period)		
	The item price must be inclusive of all necessary accessories for operation, including charging cables (if applicable). All delivered items must be new and not refurbished.		
	Delivery and Distribution to Final Beneficiaries Costs: Delivery Locations: 10 locations from Moldova Please refer to Annex 6		
	DELIVERY Deadline: By 20.12.2025 preferable (or fastest possible)		
	LOT 4: ROBOTICS KITS		
4.1	Item 4.1. Educational Sensor Kit Total Modules: Must include a minimum of 10 separate, functional electronic modules beyond the main control board/shield.	set	50

Nr.	Technical Specifications	Measure unit	Total Quantity
	• Board: • Core Control Board: Must include or be compatible with an Arduino UNO (32KB Flash, ATmega328P or better). • Note: The bid price must reflect the cost of a complete, functional kit. If the Core Control Board (Arduino UNO or compatible) is not physically included in the base kit package, the bidder must: 1) State the exclusion clearly, and 2) Include the estimated unit cost of the necessary board in the overall Item Cost for evaluation. • I/O Resources: Must provide access to a minimum of 14 Digital I/O (incl. 6 PWM) and at least 6 Analog Input pins. • Power/Programming: Must use a standard connection method (e.g., Micro USB, USB-C) for power and programming. • Must-Haves Sensors: - Temperature sensor - Humidity sensor - Light Sensor - Sound Sensor 3-Axis Accelerator - Air Pressure Sensor • Actuators / Indicators: • Display: OLED Screen (minimum 0.96", 128×64 px) or equivalent. • Basic Outputs: Buzzer and LED. • Basic Inputs (2): Button (Digital) and Potentiometer (Analog). • Connectivity: • Modular System: All modules must use a standardized, plug-and-play interface (Grove, Qwiic). • Wiring Method: Must support All-in-one PCB OR Base Shield with labeled ports. • Expansion: Must include multiple unused ports and supply a minimum of 6 interface cables. • Manual: in Romanian, in Russian and/or English • Warranty: min. 1 year without keeping the packages		
4.2	Item 4.2. Dual-Level Coding Mini-Robot Classroom Kit • Core Robot System: The kit must contain a minimum of 15 individual, student-ready robot units and corresponding accessories, designed to support a class size of 20–30 students with shared equipment. • Physical Footprint: Each robot unit must be desk-friendly with a maximum diameter of 3 cm and be capable of operating on flat paper and whiteboard surfaces. • Integrated Charging: The kit must include a multi-port charging base (with a single power cable) capable of simultaneously charging all included robots (minimum 15 units) for streamlined classroom management. • Screen-Free Coding: The robotics system must support a primary, screen-free programming method where commands and functions are executed by the robot via optical detection of drawn color sequences on a physical surface (paper or mat). • Block-Based Coding: The system must support a second, visual programming level utilizing a drag-and-drop block-based editor (e.g., similar to Blockly or Scratch) for more advanced functions. Note: Text-based/High-level programming (like Python) is not required.	set	8

Nr.	Technical Specifications	Measure unit	Total Quantity
	- Navigation Sensors: Each robot unit must be equipped with both: 1. Optical/color sensors for precise line-following and surface color interaction. 2. Proximity or distance sensors for basic obstacle avoidance. - Programmable Feedback: Must include multi-color, programmable LED lights and an integrated speaker for emitting tones and sounds. - Wireless Connection: Connectivity to host devices (PC, tablet, Chromebook) must be achieved via Bluetooth Low Energy (BLE) or a similar wireless standard. - Manual: in Romanian, in Russian and/or English - Warranty: min. 1 year without keeping the packages		
4.3	Item 4.3 Training Program Organization and execution of a training plan consisting of a total of 5 online sessions, specifically designed for teachers from the beneficiary Model Schools: - four (4) core online workshops - one (1) online follow-up workshop The specific types of experiments required for each workshop are detailed in Annex 5: Training Program . Please consult this annex to fully understand the complexity and the expected level of practical engagement.	unit	5
	Warranty and after-sales requirements LOT 4:		
	Warranty (full): minimum 1 year		
	Service Center: Availability of maintenance, repair or replacement units (on site at the request of beneficiary schools). While the selected vendor shall provide technical support via email.		
	Brand new replacement if unit is beyond repair (withing warranty period)		
	The item price must be inclusive of all necessary accessories for operation, including charging cables (if applicable). All items delivered must be new and not refurbished.		
	Delivery and Distribution to Final Beneficiaries Costs: Delivery Locations: 10 locations from Moldova Please refer to Annex 6		
	DELIVERY Deadline: By 20.12.2025 preferable (or fastest possible)		

Delivery Requirements:

Delivery Requirements	
Delivery date and time	☒ Bidder shall deliver the goods to the addresses indicated below within 21 days but no later than 20 December 2025.
Delivery Terms (INCOTERMS 2020)	☒ DDP
Customs clearance (must be linked to INCOTERM)	☒ Supplier/Bidder UNDP shall provide a Tax Exemption letter for Customs clearance if necessary.
Exact Address(es) of Delivery Location(s)	Detailed Distribution list is presented in Annex 6. Delivery Locations. Ceadir-Lunga, Theoretical Lyceum „Mihail Ceachir” As per the beneficiary institutions' address: 197 Bugeacului Street

	Criuleni, Theoretical Lyceum „Boris Dingă” As per the beneficiary institutions’ address: 2A Biruința Blvd. Orhei, Theoretical Lyceum „Onisifor Ghibu” As per the beneficiary institutions’ address: 149 Vasile Lupu Street Bălți, Theoretical Lyceum „B.P. Hașdeu” As per the beneficiary institutions’ address: 19 Chekov Street Florești, Theoretical Lyceum „Miron Costin” As per the beneficiary institutions’ address: 9 Mihai Eminescu Street Drochia, Theoretical Lyceum „Mihai Eminescu” As per the beneficiary institutions’ address: 36A Independenței Blvd. Dondușeni, Theoretical Lyceum „Alexei Mateevici” As per the beneficiary institutions’ address: 3 E. Sârbu Street Ocnîța, Theoretical Lyceum „Mihail Sadoveanu” As per the beneficiary institutions’ address: 80 Independenței Street Briceni, Theoretical Lyceum „Grigore Vieru” As per the beneficiary institutions’ address: 5 Carpsin Street UNDP Office Chisinau, 127, 31 August 1989 str. (MAIB Park)
Warranty Period	☒ Minimum 12-36 months depending on the LOT (incl. mechanisms), parts and labour
After-sales service and local service support requirements	☒ Brand new replacement (in the shortest period possible) if Purchased Unit is beyond repair (within warranty period)