**Lot II**

# TECHNICAL CHARACTERISTICS OR SPECIFICATIONS OF THE PROCUREMENT ITEMS –BILL OF QUANTITIES

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| **No.** | **Description of the procurement item, or part thereof** | **Important characteristics of the procurement item in terms of quality, performances and/or dimensions** | **Unit**  | **Qty.** |
|  | **Architectural – construction works and equipment** |  |  |  |
|  | **“Room 105 (Planned: Office 105/A and** **Data centre 105/B)”** |  |  |  |
| **1** | **PREPARATORY WORKS** |  |  |  |
| 1.1 | Disassembly of double wing wooden entrance doors, together with elements, 160x205cm in dimensions at the entrances into the room, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Disassembly of double wing wooden entrance doors, together with elements, 160x205cm in dimensions at the entrances into the room, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | pcs. | 2 |
| 1.2 | Disassembly of dividing walls made of aluminium locksmith profiles and elements of panel and glass filling in the room, dividing wall height 322 cm, in combination with fixed and movable panel – entrance doors, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Disassembly of dividing walls made of aluminium locksmith profiles and elements of panel and glass filling in the room, dividing wall height 322 cm, in combination with fixed and movable panel – entrance doors, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | m2 | 72.50 |
| 1.3 | Disassembly of wall panel “Hunter Douglas”, together with subconstruction, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Disassembly of wall panel “Hunter Douglas”, together with subconstruction, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | m2 | 76.55 |
| 1.4 | Disassembly of wooden wall panel, together with subconstruction, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Disassembly of wooden wall panel, together with subconstruction, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | lump | 1 |
| 1.5 | Disassembly of ceiling panel “Hunter Douglas”, together with the suspended ceiling subconstruction, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Disassembly of ceiling panel “Hunter Douglas”, together with the suspended ceiling subconstruction, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | m2 | 92.05 |
| 1.6 | Disassembly of floor panels, 60x60cm d=4cm in dimensions, with subconstruction in the form of adjustable steel stands, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Disassembly of floor panels, 60x60cm d=4cm in dimensions, with subconstruction in the form of adjustable steel stands, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | m2 | 92.05 |
| **2** | **CONSTRUCTION – ARTISAN WORKS**  |  |  |  |
| 2.1 | Closing of the wall opening for the entrance door, by sealing the opening with a concrete block of 39x19x19cm, and with cement mortaring, plastering coating it with a dispersive paint (the existing shade) from the side of walkable corridor with the aim of fitting it into the existing interior design. Construction material is to be delivered manually, to the 1st floor and place of installation. | Closing of the wall opening for the entrance door, by sealing the opening with a concrete block of 39x19x19cm, and with cement mortaring, plastering coating it with a dispersive paint (the existing shade) from the side of walkable corridor with the aim of fitting it into the existing interior design. Construction material is to be delivered manually, to the 1st floor and place of installation. | m3 | 1 |
| 2.2 | Placing a cement screed d=40mm, with cleaning and washing the surface before the placement of the screed. The upper side of the screed must be evenly smoothened and treated until hardened. Construction material is to be delivered manually, to the 1st floor and place of installation.  | Placing a cement screed d=40mm, with cleaning and washing the surface before the placement of the screed. The upper side of the screed must be evenly smoothened and treated until hardened. Construction material is to be delivered manually, to the 1st floor and place of installation.  | m2 | 92.05 |
| 2.3 | Construction of epoxy floor d=3-5mm according to the manufacturer’s instruction, with prior cleaning of the surface. Construction material is to be delivered manually, to the 1st floor and place of installation. | Construction of epoxy floor d=3-5mm according to the manufacturer’s instruction, with prior cleaning of the surface. Construction material is to be delivered manually, to the 1st floor and place of installation. | m2 | 92.05 |
| 2.4 | One-sided coating of d=95mm pillars and dividing full-brick walls according to the manufacturer’s instructions, with fire-resistant panels DF d=15mm (triple one-sided coating), fire resistance class EI90 to subconstruction of CW and UW 50/0.6 profile. Joints of the fire resistant panels and joining elements must be covered with bandage strips and grouted.Construction material is to be delivered manually, to the 1st floor and place of installation. | One-sided coating of d=95mm pillars and dividing full-brick walls according to the manufacturer’s instructions, with fire-resistant panels DF d=15mm (triple one-sided coating), fire resistance class EI90 to subconstruction of CW and UW 50/0.6 profile. Joints of the fire resistant panels and joining elements must be covered with bandage strips and grouted.Construction material is to be delivered manually, to the 1st floor and place of installation. | m2 | 300.15 |
| 2.5 | Construction of a dividing wall d=125mm according to manufacturer’s instructions, with fire resistant panels DF d=12,5mm (double two-sides coating), fire resistance class EI90 to subconstruction of CW and UW 75/0.6 profile with sound and thermal insulation between the panels of hard-pressed stone-mineral wool d=70mm. Joints of the fire resistant panels and joining elements must be covered with bandage strips and grouted.Construction material is to be delivered manually, to the 1st floor and place of installation. | Construction of a dividing wall d=125mm according to manufacturer’s instructions, with fire resistant panels DF d=12,5mm (double two-sides coating), fire resistance class EI90 to subconstruction of CW and UW 75/0.6 profile with sound and thermal insulation between the panels of hard-pressed stone-mineral wool d=70mm. Joints of the fire resistant panels and joining elements must be covered with bandage strips and grouted.Construction material is to be delivered manually, to the 1st floor and place of installation. | m2 | 19.90 |
| 2.6 | Construction of a suspended ceiling according to the manufacturer’s instructions, with fire resistant panels DF d=15mm (triple one-sided coating), fire resistance class EI90 on the subconstruction of CD and UD 60x27mm profiles with related elements-suspenders of the suspended ceiling. Joints of the fire resistant panels and joining elements must be covered with bandage strips and grouted.Construction material is to be delivered manually, to the 1st floor and place of installation. | Construction of a suspended ceiling according to the manufacturer’s instructions, with fire resistant panels DF d=15mm (triple one-sided coating), fire resistance class EI90 on the subconstruction of CD and UD 60x27mm profiles with related elements-suspenders of the suspended ceiling. Joints of the fire resistant panels and joining elements must be covered with bandage strips and grouted.Construction material is to be delivered manually, to the 1st floor and place of installation. | m2 | 26.10 |
| 2.7 | Procurement and installation of double-wing steel fire resistant door, fire resistance class F90, all in accordance with the manufacturer’s instructions. Door frame should consist of steel galvanised sheet of d=2mm, and should be plasticised according to RAL colour chart. The wing should consist of a d=1mm sheet with fire resistant filling of d=62mm total wing thickness, and should also be plasticised according to RAL colour chart. The elements of the fire resistant door include: - joint with a ball bearing plasticised according to RAL colour chart (2 pcs), - hydraulic seal with a lever or glider (EN1154 or equivalent), - panic lock, central, fire resistant (EN12209 or equivalent), - reed contact, panic lever in F1 and inox door handle with rosettes for the cylinder, - electric strike (eff-eff 3705 or equivalent), mortise lock (mod.802 or equivalent), cylinder with 3 keys, door bottom seal – clearance h=5-10mm and automatic shutter in auxiliary wing – above. The joint between the wall and door frame should be finished with a profile. Planned door have one-way entrance control.Dimensions of the opening for installation of FR door is 160x205cm. Light width of the door is 86x200 cm (working wing) / 63x200 cm (the wing that is open as necessary).Note: ALL MEASURES MUST BE DETERMINED ON THE SPOT AND ELEMENTS OF THE FR FIRE RESISTANT DOOR ARE DESIGNED ACCORDING TO THE CONTRACTOR’S WORKSHOP DETAILS. THE DOOR MUST BE ACCOMPANIED BY A CERTIFICATE ON FIRE RESISTANCE.  | Procurement and installation of double-wing steel fire resistant door, fire resistance class F90, all in accordance with the manufacturer’s instructions. Door frame should consist of steel galvanised sheet of d=2mm, and should be plasticised according to RAL colour chart. The wing should consist of a d=1mm sheet with fire resistant filling of d=62mm total wing thickness, and should also be plasticised according to RAL colour chart. The elements of the fire resistant door include: - joint with a ball bearing plasticised according to RAL colour chart (2 pcs), - hydraulic seal with a lever or glider (EN1154 or equivalent), - panic lock, central, fire resistant (EN12209 or equivalent), - reed contact, panic lever in F1 and inox door handle with rosettes for the cylinder, - electric strike (eff-eff 3705 or equivalent), mortise lock (mod.802 or equivalent), cylinder with 3 keys, door bottom seal – clearance h=5-10mm and automatic shutter in auxiliary wing – above. The joint between the wall and door frame should be finished with a profile. Planned door have one-way entrance control.Dimensions of the opening for installation of FR door is 160x205cm. Light width of the door is 86x200 cm (working wing) / 63x200 cm (the wing that is open as necessary).Note: ALL MEASURES MUST BE DETERMINED ON THE SPOT AND ELEMENTS OF THE FR FIRE RESISTANT DOOR ARE DESIGNED ACCORDING TO THE CONTRACTOR’S WORKSHOP DETAILS. THE DOOR MUST BE ACCOMPANIED BY A CERTIFICATE ON FIRE RESISTANCE.  | pcs. | 1 |
| 2.8 | Procurement and installation of double-wing steel fire resistant door of F90 fire resistance, all according to the manufacturer’s instructions. Door frame should consist of steel galvanised sheet of d=2mm and should be plasticised according to RAL colour chart. The wing should consist of a d=1mm sheet with fire resistant filling of d=62mm total wing thickness, and should also be plasticised according to RAL colour chart. The elements of the F90 fire resistant door include:- joint with a ball bearing plasticised according to RAL colour chart (2 pcs), - hydraulic seal with a lever or glider (EN1154 or equivalent), - standard lock, central, fire resistant (DIN18250 or equivalent), inox door handle – handle with rosettes for the cylinder,- cylinder with 3 keys and automatic shutter in the auxiliary wing – above. The joint between the wall and door frame should be finished with a profile. Dimensions of the opening for installation of FR door is 160x205cm. Light width of the door is 86x200 cm (working wing) / 63x200 cm (the wing that is open as necessary). Note: ALL MEASURES MUST BE DETERMINED ON THE SPOT AND ELEMENTS OF THE FR FIRE RESISTANT DOOR ARE DESIGNED ACCORDING TO THE CONTRACTOR’S WORKSHOP DETAILS. THE DOOR MUST BE ACCOMPANIED BY A CERTIFICATE ON FIRE RESISTANCE. | Procurement and installation of double-wing steel fire resistant door of F90 fire resistance, all according to the manufacturer’s instructions. Door frame should consist of steel galvanised sheet of d=2mm and should be plasticised according to RAL colour chart. The wing should consist of a d=1mm sheet with fire resistant filling of d=62mm total wing thickness, and should also be plasticised according to RAL colour chart. The elements of the F90 fire resistant door include:- joint with a ball bearing plasticised according to RAL colour chart (2 pcs), - hydraulic seal with a lever or glider (EN1154 or equivalent), - standard lock, central, fire resistant (DIN18250 or equivalent), inox door handle – handle with rosettes for the cylinder,- cylinder with 3 keys and automatic shutter in the auxiliary wing – above. The joint between the wall and door frame should be finished with a profile. Dimensions of the opening for installation of FR door is 160x205cm. Light width of the door is 86x200 cm (working wing) / 63x200 cm (the wing that is open as necessary). Note: ALL MEASURES MUST BE DETERMINED ON THE SPOT AND ELEMENTS OF THE FR FIRE RESISTANT DOOR ARE DESIGNED ACCORDING TO THE CONTRACTOR’S WORKSHOP DETAILS. THE DOOR MUST BE ACCOMPANIED BY A CERTIFICATE ON FIRE RESISTANCE. | pcs. | 1 |
| 2.9 | Coating the wall and ceiling surfaces with dispersive paint with plastering. Plasterboard surfaces on the walls and ceiling should be plastered with dispersive putty in two layers, and finish with polishing. Prepared surfaces will be coated with dispersive paint (combination of white and black shade) in two layers, with final coating with anti-dust protective coating. Construction material is to be delivered manually, to the 1st floor and place of installation. | Coating the wall and ceiling surfaces with dispersive paint with plastering. Plasterboard surfaces on the walls and ceiling should be plastered with dispersive putty in two layers, and finish with polishing. Prepared surfaces will be coated with dispersive paint (combination of white and black shade) in two layers, with final coating with anti-dust protective coating. Construction material is to be delivered manually, to the 1st floor and place of installation. | m2 | 425 |
| 2.10 | Combined sealing of installation penetrations for floor and dry-mounting walls and ceilings with fire resistant foam of EI90 fire resistance class. Penetration systems for fire protection of electrical, telecommunication or optical cables and lines, flammable and inflammable tubes, and so on. Penetration routes are defined in the design solution for installations (corridor – Office 105/A, corridor – Data centre 105/B, Office 105/A – Data centre 105/B). | Combined sealing of installation penetrations for floor and dry-mounting walls and ceilings with fire resistant foam of EI90 fire resistance class. Penetration systems for fire protection of electrical, telecommunication or optical cables and lines, flammable and inflammable tubes, and so on. Penetration routes are defined in the design solution for installations (corridor – Office 105/A, corridor – Data centre 105/B, Office 105/A – Data centre 105/B). | lump | 1 |
| 2.11 | Delivery and installation of electro conductive antistatic floor with galvanised subconstruction, adjustable stands and spare panels. The panel is 600x600mm in dimensions, d=40mm thick with final coating resistant to wear and tear and with graphite bridges for conductivity. The floor substructure is grounded. Construction material is to be delivered manually, to the 1st floor and place of installation.Note: ELEMENTS OF THE ELECTROCONDUCTIVE ANTISTATIC FLOOR SHOULD BE ACCOMPANIED BY THE RELEVANT CERTIFICATE AND ATTEST. | Delivery and installation of electro conductive antistatic floor with galvanised subconstruction, adjustable stands and spare panels. The panel is 600x600mm in dimensions, d=40mm thick with final coating resistant to wear and tear and with graphite bridges for conductivity. The floor substructure is grounded. Construction material is to be delivered manually, to the 1st floor and place of installation.Note: ELEMENTS OF THE ELECTROCONDUCTIVE ANTISTATIC FLOOR SHOULD BE ACCOMPANIED BY THE RELEVANT CERTIFICATE AND ATTEST. | m2 | 85.05 |
| **Room 213** **(Planned: Office 213/A, Auxiliary room 213/B and Data centre 213/C)** |  |  |
| **3** | **PREPARATORY WORKS** |  |  |  |
| 3.1 | Disassembly of one-wing blind entrance door together with all elements, dimensions 100x205cm at the entrances into the room, transfer of demolition material to the ground floor of the building and disposing on a temporary disposal site within the building yard, until the final transport thereof to the city landfill. | Disassembly of dividing walls made of aluminium locksmith profiles and elements of panel and glass filling in the room, dividing wall height 322 cm, in combination with fixed and movable panel – entrance doors, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | pcs. | 1 |
| 3.2 | Disassembly of dividing walls made of aluminium locksmith profiles and elements of panel and glass filling in the room, dividing wall height 322 cm, in combination with fixed and movable panel – entrance doors, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Disassembly of wall panel “Hunter Douglas”, together with subconstruction, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | m2 | 14.10 |
| 3.3 | Disassembly of wall panel “Hunter Douglas”, together with subconstruction, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Disassembly of wooden wall panel, together with subconstruction, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | m2 | 37 |
| 3.4 | Disassembly of wooden wall panel, together with subconstruction, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Disassembly of ceiling panel “Hunter Douglas”, together with the suspended ceiling subconstruction, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | lump | 1 |
| 3.5 | Disassembly of ceiling panel “Hunter Douglas”, together with the suspended ceiling subconstruction, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Disassembly of floor panels, 60x60cm d=4cm in dimensions, with subconstruction in the form of adjustable steel stands, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | m2 | 66.30 |
| 3.6 | Disassembly of floor panels, 60x60cm d=4cm in dimensions, with subconstruction in the form of adjustable steel stands, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Disassembly of dividing walls made of aluminium locksmith profiles and elements of panel and glass filling in the room, dividing wall height 322 cm, in combination with fixed and movable panel – entrance doors, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | m2 | 66.30 |
| **4** | **CONSTRUCTION – ARTISAN WORKS** |  |  |  |
| 4.1 | Applying cement screed d=40mm, with cleaning and washing the surface before the placement of the screed. The upper side of the screed must be evenly smoothened and treated until hardened. Construction material is to be delivered manually, to the 2nd floor and place of installation.  | Applying cement screed d=40mm, with cleaning and washing the surface before the placement of the screed. The upper side of the screed must be evenly smoothened and treated until hardened. Construction material is to be delivered manually, to the 2nd floor and place of installation.  | m2 | 66.30 |
| 4.2 | Construction of epoxy floor d=3-5mm according to the manufacturer’s instruction, with prior cleaning of the surface. Construction material is to be delivered manually, to the 2nd floor and place of installation. | Construction of epoxy floor d=3-5mm according to the manufacturer’s instruction, with prior cleaning of the surface. Construction material is to be delivered manually, to the 2nd floor and place of installation. | m2 | 66.30 |
| 4.3 | One-sided coating of d=95mm pillars and dividing full-brick walls according to the manufacturer’s instructions, with fire-resistant panels DF d=15mm (triple one-sided coating), fire resistance class EI90 to subconstruction of CW and UW 50/0.6 profiles. Joints of the fire resistant panels and joining elements must be covered with bandage strips and grouted.Construction material is to be delivered manually, to the 2nd floor and place of installation. | One-sided coating of d=95mm pillars and dividing full-brick walls according to the manufacturer’s instructions, with fire-resistant panels DF d=15mm (triple one-sided coating), fire resistance class EI90 to subconstruction of CW and UW 50/0.6 profiles. Joints of the fire resistant panels and joining elements must be covered with bandage strips and grouted.Construction material is to be delivered manually, to the 2nd floor and place of installation. | m2 | 188.70 |
| 4.4 | Construction of a dividing wall d=125mm according to manufacturer’s instructions, with fire resistant panels DF d=12,5mm (double two-sides coating), fire resistance class EI90 to subconstruction of CW and UW 75/0.6 profile with sound and thermal insulation between the panels of hard-pressed stone-mineral wool d=70mm. Joints of the fire resistant panels and joining elements must be covered with bandage strips and grouted.Construction material is to be delivered manually, to the 2nd floor and place of installation.  | Construction of a dividing wall d=125mm according to manufacturer’s instructions, with fire resistant panels DF d=12,5mm (double two-sides coating), fire resistance class EI90 to subconstruction of CW and UW 75/0.6 profile with sound and thermal insulation between the panels of hard-pressed stone-mineral wool d=70mm. Joints of the fire resistant panels and joining elements must be covered with bandage strips and grouted.Construction material is to be delivered manually, to the 2nd floor and place of installation.  | m2 | 51.51 |
| 4.5 | Construction of a suspended ceiling according to the manufacturer’s instructions, with fire resistant panels DF d=15mm (triple one-sided coating), fire resistance class EI90 on the subconstruction of CD and UD 60x27mm profiles with related elements-suspenders of the suspended ceiling. Joints of the fire resistant panels and joining elements must be covered with bandage strips and grouted.Construction material is to be delivered manually, to the 2nd floor and place of installation.  | Construction of a suspended ceiling according to the manufacturer’s instructions, with fire resistant panels DF d=15mm (triple one-sided coating), fire resistance class EI90 on the subconstruction of CD and UD 60x27mm profiles with related elements-suspenders of the suspended ceiling. Joints of the fire resistant panels and joining elements must be covered with bandage strips and grouted.Construction material is to be delivered manually, to the 2nd floor and place of installation.  | m2 | 27.90 |
| 4.6 | Procurement and installation of single-wing steel fire resistant door (type: PV-1/90 or equivalent), with F90 fire resistance, all in accordance with the manufacturer’s instructions. Door frame should consist of steel galvanised sheet of d=2mm, and should be plasticised according to RAL colour chart. The wing should consist of a d=1mm sheet with fire resistant filling of d=62mm total wing thickness, and should also be plasticised according to RAL colour chart. The elements of the steel F90 fire resistant door include: - joint with a ball bearing plasticised according to RAL colour chart (2 pcs), - hydraulic seal with a lever or glider (EN1154 or equivalent), - panic lock, central, fire resistant (EN12209 or equivalent), reed contact, panic lever in F1 and inox door handle with rosettes for the cylinder, electric strike (eff-eff 3705 or equivalent), mortise lock (mod.802 or equivalent), cylinder with 3 keys, door bottom seal – clearance h=5-10mm.The joint between the wall and door frame should be finished with a profile. Planned door have one-way entrance control.Dimensions of the opening for installation of FR door is 100x205cm. Light width of the door is 85x200 cm.Note: ALL MEASURES MUST BE DETERMINED ON THE SPOT AND ELEMENTS OF THE FR FIRE RESISTANT DOOR ARE DESIGNED ACCORDING TO THE CONTRACTOR’S WORKSHOP DETAILS. THE DOOR MUST BE ACCOMPANIED BY A CERTIFICATE ON FIRE RESISTANCE.  | Procurement and installation of single-wing steel fire resistant door (type: PV-1/90 or equivalent), with F90 fire resistance, all in accordance with the manufacturer’s instructions. Door frame should consist of steel galvanised sheet of d=2mm, and should be plasticised according to RAL colour chart. The wing should consist of a d=1mm sheet with fire resistant filling of d=62mm total wing thickness, and should also be plasticised according to RAL colour chart. The elements of the steel F90 fire resistant door include: - joint with a ball bearing plasticised according to RAL colour chart (2 pcs), - hydraulic seal with a lever or glider (EN1154 or equivalent), - panic lock, central, fire resistant (EN12209 or equivalent), reed contact, panic lever in F1 and inox door handle with rosettes for the cylinder, electric strike (eff-eff 3705 or equivalent), mortise lock (mod.802 or equivalent), cylinder with 3 keys, door bottom seal – clearance h=5-10mm.The joint between the wall and door frame should be finished with a profile. Planned door have one-way entrance control.Dimensions of the opening for installation of FR door is 100x205cm. Light width of the door is 85x200 cm.Note: ALL MEASURES MUST BE DETERMINED ON THE SPOT AND ELEMENTS OF THE FR FIRE RESISTANT DOOR ARE DESIGNED ACCORDING TO THE CONTRACTOR’S WORKSHOP DETAILS. THE DOOR MUST BE ACCOMPANIED BY A CERTIFICATE ON FIRE RESISTANCE.  | pcs. | 1 |
| 4.7 | Procurement and installation of single-wing steel fire resistant door (type: PV-1/90 or equivalent), of F90 fire resistance, all according to the manufacturer’s instructions. Door frame should consist of steel galvanised sheet of d=2mm and should be plasticised according to RAL colour chart. The wing should consist of a d=1mm sheet with fire resistant filling of d=62mm total wing thickness, and should also be plasticised according to RAL colour chart. The elements of the steel F90 fire resistant door include:- joint with a ball bearing plasticised according to RAL colour chart (2 pcs), - hydraulic seal with a lever or glider (EN1154 or equivalent), - standard lock, central, fire resistant (DIN18250 or equivalent), inox door handle – handle with rosettes for the cylinder, cylinder with 3 keys.Joint between the wall and door frame should be finished with a profile. Dimensions of the opening for installation of FR door is 100x205cm. Light width of the door is 90x200 cm.  Note: ALL MEASURES MUST BE DETERMINED ON THE SPOT AND ELEMENTS OF THE FR FIRE RESISTANT DOOR ARE DESIGNED ACCORDING TO THE CONTRACTOR’S WORKSHOP DETAILS. THE DOOR MUST BE ACCOMPANIED BY A CERTIFICATE ON FIRE RESISTANCE. | Procurement and installation of single-wing steel fire resistant door (type: PV-1/90 or equivalent), of F90 fire resistance, all according to the manufacturer’s instructions. Door frame should consist of steel galvanised sheet of d=2mm and should be plasticised according to RAL colour chart. The wing should consist of a d=1mm sheet with fire resistant filling of d=62mm total wing thickness, and should also be plasticised according to RAL colour chart. The elements of the steel F90 fire resistant door include:- joint with a ball bearing plasticised according to RAL colour chart (2 pcs), - hydraulic seal with a lever or glider (EN1154 or equivalent), - standard lock, central, fire resistant (DIN18250 or equivalent), inox door handle – handle with rosettes for the cylinder, cylinder with 3 keys.Joint between the wall and door frame should be finished with a profile. Dimensions of the opening for installation of FR door is 100x205cm. Light width of the door is 90x200 cm.  Note: ALL MEASURES MUST BE DETERMINED ON THE SPOT AND ELEMENTS OF THE FR FIRE RESISTANT DOOR ARE DESIGNED ACCORDING TO THE CONTRACTOR’S WORKSHOP DETAILS. THE DOOR MUST BE ACCOMPANIED BY A CERTIFICATE ON FIRE RESISTANCE. | pcs. | 2 |
| 4.8 | Procurement and installation of steel fire resistant fix glass membrane of F90 fire resistance, all in accordance with the manufacturer’s instructions. The elements of the fire resistant F90 fix glass membrane include steel box of square cross-section, glazed flange made of profile sheet d=2mm, plasticised according to RAL colour chart, rubber self-extinguishing seal in black colour, glass panel d=34mm. The glazed flange is fixed to the box profile line (standard).Opening dimensions for installation of PP door are 150x105cm. Light width of the door is 137x92 cm.Note: ALL MEASURES MUST BE DETERMINED ON THE SPOT AND ELEMENTS OF THE FR FIX GLASS MEMBRANE ARE DESIGNED ACCORDING TO THE CONTRACTOR’S WORKSHOP DETAILS. THE FIX GLASS MEMBRANE MUST BE ACCOMPANIED BY A CERTIFICATE ON FIRE RESISTANCE.  | Procurement and installation of steel fire resistant fix glass membrane of F90 fire resistance, all in accordance with the manufacturer’s instructions. The elements of the fire resistant F90 fix glass membrane include steel box of square cross-section, glazed flange made of profile sheet d=2mm, plasticised according to RAL colour chart, rubber self-extinguishing seal in black colour, glass panel d=34mm. The glazed flange is fixed to the box profile line (standard).Opening dimensions for installation of PP door are 150x105cm. Light width of the door is 137x92 cm.Note: ALL MEASURES MUST BE DETERMINED ON THE SPOT AND ELEMENTS OF THE FR FIX GLASS MEMBRANE ARE DESIGNED ACCORDING TO THE CONTRACTOR’S WORKSHOP DETAILS. THE FIX GLASS MEMBRANE MUST BE ACCOMPANIED BY A CERTIFICATE ON FIRE RESISTANCE.  | pcs. | 1 |
| 4.9 | Coating the wall and ceiling surfaces with dispersive paint with plastering. Plasterboard surfaces on the walls and ceiling should be plastered with dispersive putty in two layers, and finish with polishing. Prepared surfaces will be coated with dispersive paint (combination of white and black shade) in two layers, with final coating with anti-dust protective coating. Construction material is to be delivered manually, to the 2nd floor and place of installation. | Coating the wall and ceiling surfaces with dispersive paint with plastering. Plasterboard surfaces on the walls and ceiling should be plastered with dispersive putty in two layers, and finish with polishing. Prepared surfaces will be coated with dispersive paint (combination of white and black shade) in two layers, with final coating with anti-dust protective coating. Construction material is to be delivered manually, to the 2nd floor and place of installation. | m2 | 353.30 |
| 4.10 | Combined sealing of installation penetrations for floor and dry-mounting walls and ceilings with fire resistant foam of EI90 fire resistance class. Penetration systems for fire protection of electrical, telecommunication or optical cables and lines, flammable and inflammable tubes, and so on. Penetration routes are defined in the design solution for installations (Corridor – Auxiliary room 213/B, Auxiliary room 213/B, Office 213/A, Office 213/A – Data centre 213/C). | Combined sealing of installation penetrations for floor and dry-mounting walls and ceilings with fire resistant foam of EI90 fire resistance class. Penetration systems for fire protection of electrical, telecommunication or optical cables and lines, flammable and inflammable tubes, and so on. Penetration routes are defined in the design solution for installations (Corridor – Auxiliary room 213/B, Auxiliary room 213/B, Office 213/A, Office 213/A – Data centre 213/C). | lump | 1 |
| 4.11 | Delivery and installation of electro conductive antistatic floor with galvanised subconstruction, adjustable stands and spare panels. The panel is 600x600mm in dimensions, d=40mm thick with final coating resistant to wear and tear and with graphite bridges for conductivity. The floor substructure is grounded. Construction material is to be delivered manually, to the 1st floor and place of installation.Note: ELEMENTS OF THE ELECTROCONDUCTIVE ANTISTATIC FLOOR SHOULD BE ACCOMPANIED BY THE RELEVANT CERTIFICATE AND ATTEST. | Delivery and installation of electro conductive antistatic floor with galvanised subconstruction, adjustable stands and spare panels. The panel is 600x600mm in dimensions, d=40mm thick with final coating resistant to wear and tear and with graphite bridges for conductivity. The floor substructure is grounded. Construction material is to be delivered manually, to the 1st floor and place of installation.Note: ELEMENTS OF THE ELECTROCONDUCTIVE ANTISTATIC FLOOR SHOULD BE ACCOMPANIED BY THE RELEVANT CERTIFICATE AND ATTEST. | m2 | 85.05 |
| **CONSTRUCTION OF CONCRETE PLATEAU IN THE YARD OF THE RADIO TELEVISION OF MONTENEGRO** |  |  |
| **5** | **CONSTRUCTION AND ARTISAN WORKS**  |  |  |  |
| 5.1 | Mechanical excavation of soil of 3rd and 4th category, finally with humus 25cm thick. The excavation must be carried out by regular cuttings of sides with calculated accuracy of the bottom processing and deviation of up to 5cm. Excess soil should be stored on a temporary disposal site within the building yard, until finally disposed of at the city landfill. | Mechanical excavation of soil of 3rd and 4th category, finally with humus 25cm thick. The excavation must be carried out by regular cuttings of sides with calculated accuracy of the bottom processing and deviation of up to 5cm. Excess soil should be stored on a temporary disposal site within the building yard, until finally disposed of at the city landfill. | m3 | 6.30 |
| 5.2 | Procurement, filling spreading and proper compaction of gravel layer with vibrating plate, granulation 0-60mm, of at least 10cm thickness, under the planned plateau. NOTE: SUPPLY OF ATTEST ON SURFACE COMPACTION ISSUED BY SPECIALISED INSTITUTION IS OBLIGATORY. | Procurement, filling spreading and proper compaction of gravel layer with vibrating plate, granulation 0-60mm, of at least 10cm thickness, under the planned plateau. NOTE: SUPPLY OF ATTEST ON SURFACE COMPACTION ISSUED BY SPECIALISED INSTITUTION IS OBLIGATORY. | m3 | 5 |
| 5.3 | Construction of reinforced concrete plate of d=15cm, dimensions 570x550cm, with finishing in slope of 0.5-1%. The price includes formworks, preparation and application of MB30 and reinforcing net Q257 in the upper third of the plate thickness, vibration and final treatment of concrete. | Construction of reinforced concrete plate of d=15cm, dimensions 570x550cm, with finishing in slope of 0.5-1%. The price includes formworks, preparation and application of MB30 and reinforcing net Q257 in the upper third of the plate thickness, vibration and final treatment of concrete. | m2 | 31.50 |
| 5.4 | Loading, transport to a landfill 10 km distant, unloading and rough planning of the excess soil at the unloading spot. | Loading, transport to a landfill 10 km distant, unloading and rough planning of the excess soil at the unloading spot. | lump | 1 |
| 5.5 | Construction of pre-fabricated protective panel fence on the brim of the concrete plateau. The construction is made of poles similar to those with anchor stand, of square cross-cutting 50x50mm and 205cm high, fixed into the plateau with FBN II 10/30 anchors (10x160). It is planned to install PVC caps on the poles’ openings. The filling is composed of panels of 183x250cm, wire thickness d=6/5/6mm, with openings of 50x200mm, toned according to RAL colour chart. Panel filling is fixed to poles by the means of square joints. The fence includes single-wing entrance door of 90x183 dimensions, with the above listed construction elements and filling, and related accessories according to the purpose (hinges, lock with cylinder and 3 keys). | Construction of pre-fabricated protective panel fence on the brim of the concrete plateau. The construction is made of poles similar to those with anchor stand, of square cross-cutting 50x50mm and 205cm high, fixed into the plateau with FBN II 10/30 anchors (10x160). It is planned to install PVC caps on the poles’ openings. The filling is composed of panels of 183x250cm, wire thickness d=6/5/6mm, with openings of 50x200mm, toned according to RAL colour chart. Panel filling is fixed to poles by the means of square joints. The fence includes single-wing entrance door of 90x183 dimensions, with the above listed construction elements and filling, and related accessories according to the purpose (hinges, lock with cylinder and 3 keys). | lump | 1 |
| 5.6 | Drafting of the as-built design for executed architectural and construction works and for the equipment. | Drafting of the as-built design for executed architectural and construction works and for the equipment. | lump | 1 |
| **Note:** Before the beginning of preparatory works included in the Bill of Quantities, the rooms planned for adaptation must be cleared of equipment and furniture of importance.  |
| **6** | **ELECTRIC INSTALLATIONS FOR HEAVY CURRENT** |  |  |  |
| 6.1 | Delivery and installation of sheet superstructure switchboard cabinet GRT-DC. The cabinet is of IP54 protection level, composed of three fields. The switchboard cabinet is 800x1200x250 mm (WxHxD). The following equipment is to be installed in the switchboard cabinet: Generator set field: -manual switch 1-0-2, 250A, 4p pcs 1-load switch INS 160A, 3p pcs 1-load switch INS 80A, 3p pcs 2-compact switch NSX 160A, 3p pcs 1UPS1 field: -load switch INS 160A, 3p pcs 1-load switch INS 100A, 3p pcs 1-load switch INS 80A, 3p pcs 1UPS2 field: -manual switch 1-0-2, 160A, 4p pcs 1-load switch INS 100A, 3p pcs 1-load switch INS 80A, 3p pcs 1The main connector of the grounding bus, other mounting and joining materials, labels, POK channels, pertinax, stands, and other.Completely connected, tested and started-up under voltage. The price must include mounting/installation, connecting and testing, as well as all necessary material and accessories for installation, connecting and labelling. | Delivery and installation of sheet superstructure switchboard cabinet GRT-DC. The cabinet is of IP54 protection level, composed of three fields. The switchboard cabinet is 800x1200x250 mm (WxHxD). The following equipment is to be installed in the switchboard cabinet: Generator set field: -manual switch 1-0-2, 250A, 4p pcs 1-load switch INS 160A, 3p pcs 1-load switch INS 80A, 3p pcs 2-compact switch NSX 160A, 3p pcs 1UPS1 field: -load switch INS 160A, 3p pcs 1-load switch INS 100A, 3p pcs 1-load switch INS 80A, 3p pcs 1UPS2 field: -manual switch 1-0-2, 160A, 4p pcs 1-load switch INS 100A, 3p pcs 1-load switch INS 80A, 3p pcs 1The main connector of the grounding bus, other mounting and joining materials, labels, POK channels, pertinax, stands, and other.Completely connected, tested and started-up under voltage. The price must include mounting/installation, connecting and testing, as well as all necessary material and accessories for installation, connecting and labelling. | set | 1 |
| 6.2 | Delivery and installation of sheet superstructure switchboard cabinet RT-DC1. The cabinet is of IP54 protection level, composed of three fields. The switchboard cabinet is 1000x1200x250 mm (WxHxD). The following equipment is to be installed in the switchboard cabinet:Generator set field: -Automatic fuse iC60N/2A, 1P, curve C, 10kA.……. pcs. 3-Signal lamps Led fi 22, displaying the voltage blue.……. pcs. 3-Automatic fuse iC60N/63A, 3P, curve D, 10kA .……. pcs. 1-Automatic fuse iC60N/10A, 3P, curve C, 10kA .…….pcs. 6-Automatic fuse iC60N/16A, 1P, curve C, 10kA.……. pcs. 3-Automatic fuse iC60N/10A, 1P, curve C, 10kA .…….pcs. 3UPS1 field: -Automatic fuse iC60N/2A, 1P, curve C, 10kA .……. pcs. 3- Signal lamps Led fi 22 displaying the voltage blue.……. pcs. 3-Automatic fuse iC60N/32A, 1P, curve C, 10kA .…….pcs. 25-Automatic fuse iC60N/16A, 1P, curve C, 10kA .……. pcs. 6-Automatic fuse iC60N/10A, 1P, curve C, 10kA .……. pcs. 2UPS2 field: -Automatic fuse iC60N/2A, 1P, curve C, 10kA .……. pcs. 3- Signal lamps Led fi 22 displaying the voltage blue.…….pcs. 3-Automatic fuse iC60N/32A, 1P, curve C, 10kA .……. pcs. 25-Automatic fuse iC60N/16A, 1P, curve C, 10kA .……. pcs. 7- The main connector of the grounding bus, other mounting and joining materials, labels, POK channels, pertinax, stands, and other.Completely connected, tested and started-up under voltage. The price must include mounting/installation, connecting and testing, as well as all necessary material and accessories for installation, connecting and labelling. | Delivery and installation of sheet superstructure switchboard cabinet RT-DC1. The cabinet is of IP54 protection level, composed of three fields. The switchboard cabinet is 1000x1200x250 mm (WxHxD). The following equipment is to be installed in the switchboard cabinet:Generator set field: -Automatic fuse iC60N/2A, 1P, curve C, 10kA.……. pcs. 3-Signal lamps Led fi 22, displaying the voltage blue.……. pcs. 3-Automatic fuse iC60N/63A, 3P, curve D, 10kA .……. pcs. 1-Automatic fuse iC60N/10A, 3P, curve C, 10kA .…….pcs. 6-Automatic fuse iC60N/16A, 1P, curve C, 10kA.……. pcs. 3-Automatic fuse iC60N/10A, 1P, curve C, 10kA .…….pcs. 3UPS1 field: -Automatic fuse iC60N/2A, 1P, curve C, 10kA .……. pcs. 3- Signal lamps Led fi 22 displaying the voltage blue.……. pcs. 3-Automatic fuse iC60N/32A, 1P, curve C, 10kA .…….pcs. 25-Automatic fuse iC60N/16A, 1P, curve C, 10kA .……. pcs. 6-Automatic fuse iC60N/10A, 1P, curve C, 10kA .……. pcs. 2UPS2 field: -Automatic fuse iC60N/2A, 1P, curve C, 10kA .……. pcs. 3- Signal lamps Led fi 22 displaying the voltage blue.…….pcs. 3-Automatic fuse iC60N/32A, 1P, curve C, 10kA .……. pcs. 25-Automatic fuse iC60N/16A, 1P, curve C, 10kA .……. pcs. 7- The main connector of the grounding bus, other mounting and joining materials, labels, POK channels, pertinax, stands, and other.Completely connected, tested and started-up under voltage. The price must include mounting/installation, connecting and testing, as well as all necessary material and accessories for installation, connecting and labelling. | set | 1 |
| 6.3 | Delivery and installation of sheet superstructure switchboard cabinet RT-DC2. The cabinet is of IP54 protection level, composed of three fields. The switchboard cabinet is 1000x1200x250 mm (WxHxD). The following equipment is to be installed in the switchboard cabinet: Generator set field: -Automatic fuse iC60N/2A, 1P, curve C, 10kA .……. pcs. 3- Signal lamps Led fi 22 displaying the voltage blue .……. pcs. 3-Automatic fuse iC60N/63A, 3P, curve D, 10kA .……. pcs. 1-Automatic fuse iC60N/10A, 3P, curve C, 10kA .……. pcs. 4-Automatic fuse iC60N/16A, 1P, curve C, 10kA .……. pcs. 3-Automatic fuse iC60N/10A, 1P, curve C, 10kA .……. pcs. 3UPS1 field: -Automatic fuse iC60N/2A, 1P, curve C, 10kA .……. pcs. 3- Signal lamps Led fi 22 displaying the voltage blue.……. pcs. 3-Automatic fuse iC60N/32A, 1P, curve C, .……. kom 13-Automatic fuse iC60N/16A, 1P, curve C, 10kA .……. pcs. 6-Automatic fuse iC60N/10A, 1P, curve C, 10kA .……. pcs. 2UPS2 field: -Automatic fuse iC60N/2A, 1P, curve C, 10kA pcs. 3- Signal lamps Led fi 22 displaying the voltage blue .……. pcs. 3-Automatic fuse iC60N/32A, 1P, curve C, 10kA .……. pcs. 13-Automatic fuse iC60N/16A, 1P, curve C, 10kA .……. pcs. 7- The main connector of the grounding bus, other mounting and joining materials, labels, POK channels, pertinax, stands, and other.Completely connected, tested and started-up under voltage. The price must include mounting/installation, connecting and testing, as well as all necessary material and accessories for installation, connecting and labelling. | Delivery and installation of sheet superstructure switchboard cabinet RT-DC2. The cabinet is of IP54 protection level, composed of three fields. The switchboard cabinet is 1000x1200x250 mm (WxHxD). The following equipment is to be installed in the switchboard cabinet: Generator set field: -Automatic fuse iC60N/2A, 1P, curve C, 10kA .……. pcs. 3- Signal lamps Led fi 22 displaying the voltage blue .……. pcs. 3-Automatic fuse iC60N/63A, 3P, curve D, 10kA .……. pcs. 1-Automatic fuse iC60N/10A, 3P, curve C, 10kA .……. pcs. 4-Automatic fuse iC60N/16A, 1P, curve C, 10kA .……. pcs. 3-Automatic fuse iC60N/10A, 1P, curve C, 10kA .……. pcs. 3UPS1 field: -Automatic fuse iC60N/2A, 1P, curve C, 10kA .……. pcs. 3- Signal lamps Led fi 22 displaying the voltage blue.……. pcs. 3-Automatic fuse iC60N/32A, 1P, curve C, .……. kom 13-Automatic fuse iC60N/16A, 1P, curve C, 10kA .……. pcs. 6-Automatic fuse iC60N/10A, 1P, curve C, 10kA .……. pcs. 2UPS2 field: -Automatic fuse iC60N/2A, 1P, curve C, 10kA pcs. 3- Signal lamps Led fi 22 displaying the voltage blue .……. pcs. 3-Automatic fuse iC60N/32A, 1P, curve C, 10kA .……. pcs. 13-Automatic fuse iC60N/16A, 1P, curve C, 10kA .……. pcs. 7- The main connector of the grounding bus, other mounting and joining materials, labels, POK channels, pertinax, stands, and other.Completely connected, tested and started-up under voltage. The price must include mounting/installation, connecting and testing, as well as all necessary material and accessories for installation, connecting and labelling. | set | 1 |
| 6.4 | Delivery and installation in the existing switchboard cabinet, in NN block, field 5 and field 8, of the following equipment:- Switch NSX200F/TM200D or equivalent- Other joining materials, labels, POK channels, pertinax, stands, and other.Completely connected and started-up under voltage. The price must include mounting/ installation, connecting and testing, as well as all necessary material and accessories for installation, connecting and labelling. | Delivery and installation in the existing switchboard cabinet, in NN block, field 5 and field 8, of the following equipment:- Switch NSX200F/TM200D or equivalent- Other joining materials, labels, POK channels, pertinax, stands, and other.Completely connected and started-up under voltage. The price must include mounting/ installation, connecting and testing, as well as all necessary material and accessories for installation, connecting and labelling. | pcs. | 2 |
| 6.5 | -Supply cable ducts. Delivery and installation of meshy and perforated steel ducts for laying in the floor of DC room onto the duct spacers. For bends and crossings, use standard pieces that prevents breaking and damaging of cables. Equalise the potential by the means of galvanised connecting of all segments and joining with potential equalisation rails. Duct spacers 30 mm high will be installed on screws and fastenings in the floor at maximal distance of 60 cm, in places where they are necessary (bends, crossings, passages through the wall) and closer. -Ducts of 400x60mm with related accessories as per description …m 35- Ducts of 300x60mm with related accessories as per description …m 95- Ducts of 200x60mm with related accessories as per description..m 140- Ducts of 100x60mm with related accessories as per description …m 75- Ducts of 50x60mm with related accessories as per description …m 110-Cap for PNK 300… m 50-Cap for PNK 200… m 105-Cap for PNK 50… m 110The price includes installation and potential equalisation, as well as all necessary material and accessories for installation, connecting and labelling.  | -Supply cable ducts. Delivery and installation of meshy and perforated steel ducts for laying in the floor of DC room onto the duct spacers. For bends and crossings, use standard pieces that prevents breaking and damaging of cables. Equalise the potential by the means of galvanised connecting of all segments and joining with potential equalisation rails. Duct spacers 30 mm high will be installed on screws and fastenings in the floor at maximal distance of 60 cm, in places where they are necessary (bends, crossings, passages through the wall) and closer. -Ducts of 400x60mm with related accessories as per description …m 35- Ducts of 300x60mm with related accessories as per description …m 95- Ducts of 200x60mm with related accessories as per description..m 140- Ducts of 100x60mm with related accessories as per description …m 75- Ducts of 50x60mm with related accessories as per description …m 110-Cap for PNK 300… m 50-Cap for PNK 200… m 105-Cap for PNK 50… m 110The price includes installation and potential equalisation, as well as all necessary material and accessories for installation, connecting and labelling.  | set | 1 |
| 6.6 | -Main supply cables.  Delivery, laying and connecting cables for supplying the equipment, according to design details. Laying the cables for supply according to documents, on the walls and in ducts within the room floor. Loose ends of cables after the ducts must be 1.5m long (unless indicated otherwise on the drawing), and must be protected against mechanical damages by the means of flexible cable hose. Cable ends in the spots where they are supposed to be connected must be fixed with appropriate clamps. The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling, including the joining materials – cable lugs and everything that is needed for installation thereof.  -Supply cable from NN block to GRT-DCNHXHX 4x95 mm2 + NHXHX 1x50 mm2 …….m 25-Supply cable from GRT-DC to UPS1 and UPS2NHXHX 4x70 mm2 + NHXHX 1x50 mm2 …….m 94-Supply cables from GRT-DC to RT-DC1 and RT-DC2 NHXHX 4x35 mm2 + NHXHX 1x25 mm2 …….m 330-Supply cable from GRT-DC to RT-DC1 and RT-DC2 NHXHX 4x25mm2 + NHXHX 1x25 mm2 …….m770  | -Main supply cables.  Delivery, laying and connecting cables for supplying the equipment, according to design details. Laying the cables for supply according to documents, on the walls and in ducts within the room floor. Loose ends of cables after the ducts must be 1.5m long (unless indicated otherwise on the drawing), and must be protected against mechanical damages by the means of flexible cable hose. Cable ends in the spots where they are supposed to be connected must be fixed with appropriate clamps. The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling, including the joining materials – cable lugs and everything that is needed for installation thereof.  -Supply cable from NN block to GRT-DCNHXHX 4x95 mm2 + NHXHX 1x50 mm2 …….m 25-Supply cable from GRT-DC to UPS1 and UPS2NHXHX 4x70 mm2 + NHXHX 1x50 mm2 …….m 94-Supply cables from GRT-DC to RT-DC1 and RT-DC2 NHXHX 4x35 mm2 + NHXHX 1x25 mm2 …….m 330-Supply cable from GRT-DC to RT-DC1 and RT-DC2 NHXHX 4x25mm2 + NHXHX 1x25 mm2 …….m770  | set | 1 |
| 6.7 | -Racks supply.  Delivery, installation and connecting of switches for supply of racks, according to design details. Laying the supply cables in ducts in room floor. Loose ends of cables after the ducts must be 1.5m long, and must be protected against mechanical damages by the means of flexible cable hose. Finishing from both sides, connection of cables into RO.UPS; finishing and connection of switches at cable ends below the rack. The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. -The switch is a mono-phase one, type UKO UTO, 230V, 50Hz, 16A, to be installed on the cable …..pcs. 72- Cable type NHXHX 3x6 mm2 …. m 1730 | -Racks supply.  Delivery, installation and connecting of switches for supply of racks, according to design details. Laying the supply cables in ducts in room floor. Loose ends of cables after the ducts must be 1.5m long, and must be protected against mechanical damages by the means of flexible cable hose. Finishing from both sides, connection of cables into RO.UPS; finishing and connection of switches at cable ends below the rack. The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. -The switch is a mono-phase one, type UKO UTO, 230V, 50Hz, 16A, to be installed on the cable …..pcs. 72- Cable type NHXHX 3x6 mm2 …. m 1730 | set | 1 |
| 6.8 | -Supply of air conditioning equipment in DC roomSupply of heat exchangers in cooling units, NHXHX 5x1.5 mm2. Laying on cable ducts in the floor. Finishing from both sides, connecting the cables into RT-DC and cooling units.-Cable type NHXHX 5x1,5mm2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. | -Supply of air conditioning equipment in DC roomSupply of heat exchangers in cooling units, NHXHX 5x1.5 mm2. Laying on cable ducts in the floor. Finishing from both sides, connecting the cables into RT-DC and cooling units.-Cable type NHXHX 5x1,5mm2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. | m | 240 |
| 6.9 | -Supply of chillers.Installation of chiller supply, cable NXHXH 5x16mm2. Laying on cable ducts in the floor, in installation tubes in the remaining space, through protective cable ducts outside the space. -Cable type NXHXH 5x16mm2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. | -Supply of chillers.Installation of chiller supply, cable NXHXH 5x16mm2. Laying on cable ducts in the floor, in installation tubes in the remaining space, through protective cable ducts outside the space. -Cable type NXHXH 5x16mm2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. | m | 250 |
| 6.10 | -Service Schuko plugs outside the Data centre.Four-module plug (2x 2M), cable NHXHX 3x2.5mm2. Laying on cable ducts in the floor.Delivery and installation of four-module plugs with the following accessorise:- box of 2 modules … pcs. 1- frame for 2 modules … pcs. 1- decoration frame for 2 modules … pcs. 1 - connector for 2 modules…. pcs. 1 | -Service Schuko plugs outside the Data centre.Four-module plug (2x 2M), cable NHXHX 3x2.5mm2. Laying on cable ducts in the floor.Delivery and installation of four-module plugs with the following accessorise:- box of 2 modules … pcs. 1- frame for 2 modules … pcs. 1- decoration frame for 2 modules … pcs. 1 - connector for 2 modules…. pcs. 1 | pcs. | 3 |
| 6.11 | -Cable type NHXHX 3x2,5mm2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. | -Cable type NHXHX 3x2,5mm2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. | m | 50 |
| 6.12 | -Service Schuko plugsWall Schuko plug, cable NHXHX 3x2.5 mm2. Laying on cable ducts in the floor. The plug is mono-phase one, type OG, IP44, 230V, 50Hz, 16A, for wall mounting. | -Service Schuko plugsWall Schuko plug, cable NHXHX 3x2.5 mm2. Laying on cable ducts in the floor. The plug is mono-phase one, type OG, IP44, 230V, 50Hz, 16A, for wall mounting. | pcs. | 9 |
| 6.13 | -Cable type NHXHX 3x2,5mm2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. | -Cable type NHXHX 3x2,5mm2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. | m | 185 |
| 6.14 | Supply of FP central units and cabinets for access control ACC.-Supply of FP central unit and ACC, NHXHX 3x1.5 mm2. Laying on able ducts in the floor, in installation tubes. Finishing of ends from both sides, connecting the cables. -Cable type NHXHX 3x1.5mm2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. | Supply of FP central units and cabinets for access control ACC.-Supply of FP central unit and ACC, NHXHX 3x1.5 mm2. Laying on able ducts in the floor, in installation tubes. Finishing of ends from both sides, connecting the cables. -Cable type NHXHX 3x1.5mm2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. | m | 80 |
| 6.15 | Supply of separate RACK cabinet(RACK TV and RACK RADIO) and connections for workplaces-Supply of RACK cabinets and connections for workplaces, cable NHXHX 3x2.5mm2. Laying on able ducts in the floor, in installation tubes. Finishing of ends from both sides, connecting the cables. -Cable type NHXHX 3x2,5mm2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. | Supply of separate RACK cabinet(RACK TV and RACK RADIO) and connections for workplaces-Supply of RACK cabinets and connections for workplaces, cable NHXHX 3x2.5mm2. Laying on able ducts in the floor, in installation tubes. Finishing of ends from both sides, connecting the cables. -Cable type NHXHX 3x2,5mm2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. | m | 205 |
| 6.16 | Supply of cabinets for automatic control ROA-VOD-Supply of the control cabinet in the safe room, cable NHXHX 5x2.5mm2. Laying on able ducts in the floor, in installation tubes. Finishing of ends from both sides, connecting the cables -Cable type 5x2.5mm2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. | Supply of cabinets for automatic control ROA-VOD-Supply of the control cabinet in the safe room, cable NHXHX 5x2.5mm2. Laying on able ducts in the floor, in installation tubes. Finishing of ends from both sides, connecting the cables -Cable type 5x2.5mm2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling. | m | 17 |
| 6.17 | Grounding and potential equalisation The price includes delivery of all necessary mounting, installation material and accessories, connecting and labelling; laying, finishing the cables with pressed lugs, connecting with elements of the equipment according to documentation, testing, measurement of resistance, and issuance of reports and attests pursuant to regulations.  - Potential equalisation rail, E-Cu 60x10 mm, 30 cm long, on insulation spacers, for installation on the floor or on the wall ….. pcs. 2- Cable NHXHX-J 1x16 mm2, with ends in form of pressed lugs for screw connecting …. m 1400 | Grounding and potential equalisation The price includes delivery of all necessary mounting, installation material and accessories, connecting and labelling; laying, finishing the cables with pressed lugs, connecting with elements of the equipment according to documentation, testing, measurement of resistance, and issuance of reports and attests pursuant to regulations.  - Potential equalisation rail, E-Cu 60x10 mm, 30 cm long, on insulation spacers, for installation on the floor or on the wall ….. pcs. 2- Cable NHXHX-J 1x16 mm2, with ends in form of pressed lugs for screw connecting …. m 1400 | set  | 1 |
| 6.18 | Installation of light.Lights for technical DC room Installation in the suspended ceiling and on frames for lights, distributed as per the design.  - 1 x delivery and installation of the switchbox with the following accessories: \*box for 2 modules…. pcs. 1 \*frame for 2 modules…. pcs. 1 \*decoration frame for 2 modules ….pcs. 1  \*simple switch for 2 modules …. pcs. 1- 2 x delivery and installation of the switchbox with the following accessories: \*box for 3 modules…. pcs. 1 \*frame for 3 modules…. pcs. 1 \*decoration frame for 3 modules…. pcs. 1  \*simple switch for 1 module …. pcs. 3-Laying the cable for supply of lights on the ceiling and the walls in installation insulation tubes. Continuation, i.e. branching of cables in OG switchboard cabinets or inside the lights if the manufacturer envisaged so.  - Cable type NHXHX 3x1.5mm2, average length 10m …… pcs. 34- (S1) Overhead light 4000K, 230V, 34W, similar to type SM134V LED37S/840 PSU W20L120 NOC Philips or equivalent….pcs. 24- (S2) Mounting light 4000K, 230V, 34W, similar to type RC134B LED37S/840 PSU W60L60 NOC Philips or equivalent … pcs. 8- (S3) Overhead light 4000K, 230V, 28W, similar to type DN135C LED20S/840 PSU II WH Philips or equivalent ... pcs. 2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling.  | Installation of light.Lights for technical DC room Installation in the suspended ceiling and on frames for lights, distributed as per the design.  - 1 x delivery and installation of the switchbox with the following accessories: \*box for 2 modules…. pcs. 1 \*frame for 2 modules…. pcs. 1 \*decoration frame for 2 modules ….pcs. 1  \*simple switch for 2 modules …. pcs. 1- 2 x delivery and installation of the switchbox with the following accessories: \*box for 3 modules…. pcs. 1 \*frame for 3 modules…. pcs. 1 \*decoration frame for 3 modules…. pcs. 1  \*simple switch for 1 module …. pcs. 3-Laying the cable for supply of lights on the ceiling and the walls in installation insulation tubes. Continuation, i.e. branching of cables in OG switchboard cabinets or inside the lights if the manufacturer envisaged so.  - Cable type NHXHX 3x1.5mm2, average length 10m …… pcs. 34- (S1) Overhead light 4000K, 230V, 34W, similar to type SM134V LED37S/840 PSU W20L120 NOC Philips or equivalent….pcs. 24- (S2) Mounting light 4000K, 230V, 34W, similar to type RC134B LED37S/840 PSU W60L60 NOC Philips or equivalent … pcs. 8- (S3) Overhead light 4000K, 230V, 28W, similar to type DN135C LED20S/840 PSU II WH Philips or equivalent ... pcs. 2The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling.  | set | 1 |
| 6.19 | Panic lights 1 x 8W. Delivery, installation and connection to panic lights in the Data centre space. The light power is 8W, flux 90lm, autonomy for 1h. The lights are equipped with appropriate masks (pictograms). Laying the cables for supply of panic lights on the ceiling and walls by placing installation insulation tubes on frames. -Cable type NHXHX 3x1.5 mm2, average length 15m.Panic light must be labelled with exit wording. The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling.  | Panic lights 1 x 8W. Delivery, installation and connection to panic lights in the Data centre space. The light power is 8W, flux 90lm, autonomy for 1h. The lights are equipped with appropriate masks (pictograms). Laying the cables for supply of panic lights on the ceiling and walls by placing installation insulation tubes on frames. -Cable type NHXHX 3x1.5 mm2, average length 15m.Panic light must be labelled with exit wording. The price includes delivery of equipment, installation, connection and testing, as well as all necessary mounting, installation material and accessories for labelling.  | pcs. | 11 |
| 6.20 | UPS supply.UPS system of 100kVA/100kW c, with three-phase input and three-phase output.Dimensions of the UPS system max. (WxDxH) 600x855x1400 mm, weight to 225 kg.The UPS must have installed service bypass switch. The system must have its own display with keyboard for status signalisation, measurement of values and settings. The device must be equipped with communication module which ensures connection through Ethernet for remote supervision, with the support of SNMP protocol.Technical data: -Power: 100kVA/100kW-Nominal input voltage: 3x400/230 +/- 10%, 50Hz-Power factor at the input at full power: minimally 0.99-Output voltage: 3x400/230 (programmable +/- 2%), 50Hz-Stability of the output voltage: better than ±1% in usual state. -Overload: better than 150% for 1 min, 125% for 10 min-Efficiency: >96.5%Environmental parameters: -Temperature: 0 - 40°C-Relative air humidity: max. 95%-Mechanical protection: IP20Standards that must be fulfilled: -Directive for CE label: CE, RCM(E2376)-Safety EMC: IEC/EN 62040-1, AS 62040.1.1, AS 62040.1.2-Performances: IEC/EN 62040-3, AS 62040.3Batteries:Original battery manufacture cabinet must be delivered together with cables, protection and Long Life type batteries, according to Eurobat classification.The price of the offered set should include delivery of equipment, installation, connecting to already installed, testing, as well as all necessary mounting, installation material and accessorise for labelling. | UPS supply.UPS system of 100kVA/100kW c, with three-phase input and three-phase output.Dimensions of the UPS system max. (WxDxH) 600x855x1400 mm, weight to 225 kg.The UPS must have installed service bypass switch. The system must have its own display with keyboard for status signalisation, measurement of values and settings. The device must be equipped with communication module which ensures connection through Ethernet for remote supervision, with the support of SNMP protocol.Technical data: -Power: 100kVA/100kW-Nominal input voltage: 3x400/230 +/- 10%, 50Hz-Power factor at the input at full power: minimally 0.99-Output voltage: 3x400/230 (programmable +/- 2%), 50Hz-Stability of the output voltage: better than ±1% in usual state. -Overload: better than 150% for 1 min, 125% for 10 min-Efficiency: >96.5%Environmental parameters: -Temperature: 0 - 40°C-Relative air humidity: max. 95%-Mechanical protection: IP20Standards that must be fulfilled: -Directive for CE label: CE, RCM(E2376)-Safety EMC: IEC/EN 62040-1, AS 62040.1.1, AS 62040.1.2-Performances: IEC/EN 62040-3, AS 62040.3Batteries:Original battery manufacture cabinet must be delivered together with cables, protection and Long Life type batteries, according to Eurobat classification.The price of the offered set should include delivery of equipment, installation, connecting to already installed, testing, as well as all necessary mounting, installation material and accessorise for labelling. | pcs. | 1 |
| 6.21 | Installation of fire resistant barriers in places where cables pass from one fire protection sector to another, together with spraying the cables with attested fire resistant mixture (to the opening), all according to design detail.  | Installation of fire resistant barriers in places where cables pass from one fire protection sector to another, together with spraying the cables with attested fire resistant mixture (to the opening), all according to design detail.  | pcs. | 8 |
| 6.22 | Testing of soundness of heavy current electric installations, with issuance of attest of soundness. | Testing of soundness of heavy current electric installations, with issuance of attest of soundness. | lump | 1 |
| 6.23 | Drafting the as-built design for all heavy current electric installations. | Drafting the as-built design for all heavy current electric installations. | lump | 1 |
| **7** | **LAN AND TC INSTALLATIONS** |  |  |
|  | **TV Data Centre, 1st floor**  |  |  |  |
| 7.1 | Rack cabinet 600×2000×1200, 42U in configuration with the following elements:- 1× front door perforated, single-wing 180°- 1× back door perforated, double-wing 180°- 1× upper panel modular for introduction of cables and opening for the cooler- 2× 19" frames adjustable in depth with height marks “Unita”- 4× spacer for passive cooling- 1× grounding- 50× M5 cage nut with bolt- Cabinet capacity at least: 1500 kg.- Cabinet colour: RAL 7035 frames and panelsRAL 9005 internal installation- Certificates: UL/ cUL(Rack cabinets are from items labelled in the design as: SR01, SR02,SR03, SR05, SR06, SR07, SR08, SR09, SR10, SR12, SR13, SR14, SR15, SR16, SR18, SR19, SR20, SR21, SR23, SR24)  | Rack cabinet 600×2000×1200, 42U in configuration with the following elements:- 1× front door perforated, single-wing 180°- 1× back door perforated, double-wing 180°- 1× upper panel modular for introduction of cables and opening for the cooler- 2× 19" frames adjustable in depth with height marks “Unita”- 4× spacer for passive cooling- 1× grounding- 50× M5 cage nut with bolt- Cabinet capacity at least: 1500 kg.- Cabinet colour: RAL 7035 frames and panelsRAL 9005 internal installation- Certificates: UL/ cUL(Rack cabinets are from items labelled in the design as: SR01, SR02,SR03, SR05, SR06, SR07, SR08, SR09, SR10, SR12, SR13, SR14, SR15, SR16, SR18, SR19, SR20, SR21, SR23, SR24)  | pcs. | 20 |
| 7.2 | Delivery and installation of additional components for required rack cabinets on item 7.1:- Upper frame for cable routes, set =2.... set 20- Interior cover panel 600x2000 Colour: RAL 9005 ...... pcs. 20- Magnetic cover L=5m.... pcs. 20- Cable coil 85×43, set=10 ...set 20- 19" Blank panel 3U (3× 1U), RAL9005, set= 9U (3× 3U)...... set 20- Bolt M5×16, set=50...... set 10- Cage nut M5, set=50.... set 10- Full grounding and connecting of rack cabinet to the potential equalisation bus, as stipulated in heavy current design ... pcs. 20 | Delivery and installation of additional components for required rack cabinets on item 7.1:- Upper frame for cable routes, set =2.... set 20- Interior cover panel 600x2000 Colour: RAL 9005 ...... pcs. 20- Magnetic cover L=5m.... pcs. 20- Cable coil 85×43, set=10 ...set 20- 19" Blank panel 3U (3× 1U), RAL9005, set= 9U (3× 3U)...... set 20- Bolt M5×16, set=50...... set 10- Cage nut M5, set=50.... set 10- Full grounding and connecting of rack cabinet to the potential equalisation bus, as stipulated in heavy current design ... pcs. 20 | set | 1 |
| 7.3 | Rack cabinet of 800×2000×1200, 42U in configuration with the following elements: -1× front door perforated, single-wing 180°-1× back door perforated, double-wing 180°-1× upper panel modular for introduction of cables and opening for the cooler-2× 19" frames adjustable in depth with height marks “Unita”-4× spacer for passive cooling-1× grounding-50× M5 cage nut with bolt -Capacity: 1500 kg.-Colour: RAL 7035 frame and panels RAL 9005 interior installation-Certificates: UL/ cUL(Rack cabinets are from items labelled in the design as: SR04, SR11, SR17, SR22).  | Rack cabinet of 800×2000×1200, 42U in configuration with the following elements: -1× front door perforated, single-wing 180°-1× back door perforated, double-wing 180°-1× upper panel modular for introduction of cables and opening for the cooler-2× 19" frames adjustable in depth with height marks “Unita”-4× spacer for passive cooling-1× grounding-50× M5 cage nut with bolt -Capacity: 1500 kg.-Colour: RAL 7035 frame and panels RAL 9005 interior installation-Certificates: UL/ cUL(Rack cabinets are from items labelled in the design as: SR04, SR11, SR17, SR22).  | pcs. | 4 |
| 7.4 | Delivery and installation of additional components for required rack cabinets on item 7.3 :- Upper frame for cable routes, set =2 .... set 4- Interior cover panel, 800x2000Colour: RAL 9005, Divides cool and warm zone inside the cabinet + 6 additional vertical 1U 19"" mounting positions ......pcs. 4- Cable rack 6U, set=14, Colour: RAL 9005 ....... set 4- Cable coil 125×65, set=10 ...set 4- 19" Blank panel 3U (3× 1U), RAL9005, set= 9U (3× 3U) ..... set 4- Bolt M5×16, set=50 .... set 2- Cage nut M5, set =50 ......set 2- External joint, set =6....set 27- Full grounding and connecting of rack cabinet to the potential equalisation bus, as stipulated in heavy current design... pcs. 4 | Delivery and installation of additional components for required rack cabinets on item 7.3 :- Upper frame for cable routes, set =2 .... set 4- Interior cover panel, 800x2000Colour: RAL 9005, Divides cool and warm zone inside the cabinet + 6 additional vertical 1U 19"" mounting positions ......pcs. 4- Cable rack 6U, set=14, Colour: RAL 9005 ....... set 4- Cable coil 125×65, set=10 ...set 4- 19" Blank panel 3U (3× 1U), RAL9005, set= 9U (3× 3U) ..... set 4- Bolt M5×16, set=50 .... set 2- Cage nut M5, set =50 ......set 2- External joint, set =6....set 27- Full grounding and connecting of rack cabinet to the potential equalisation bus, as stipulated in heavy current design... pcs. 4 | set | 1 |
| 7.5 | Delivery and installation of the basic modular distribution supply unit.Modular supply system – C13 with fuses and the following components: - Frame for plugin modules 1200mm, 2×3×16A...... pcs. 24- Mounting accessorise.....pcs. 24- Connecting cable, 3m IEC 309/ X-Com connectors 5-pole/ 16A/ 3~ ......pcs. 48- Plugin module 4×C13 with surge protection per plug...pcs. 96- Plugin module 4×C19..... pcs. 24- Plugin module 4×Schuko .... pcs. 24Delivery and installation...pcs. 24 | Delivery and installation of the basic modular distribution supply unit.Modular supply system – C13 with fuses and the following components: - Frame for plugin modules 1200mm, 2×3×16A...... pcs. 24- Mounting accessorise.....pcs. 24- Connecting cable, 3m IEC 309/ X-Com connectors 5-pole/ 16A/ 3~ ......pcs. 48- Plugin module 4×C13 with surge protection per plug...pcs. 96- Plugin module 4×C19..... pcs. 24- Plugin module 4×Schuko .... pcs. 24Delivery and installation...pcs. 24 | set | 1 |
| 7.6 | Cutting and protecting the opening in panels of the double floor with rubber for cable entrance, L=3m | Cutting and protecting the opening in panels of the double floor with rubber for cable entrance, L=3m | pcs. | 5 |
|  | Passive infrastructure of TV data centre | Passive infrastructure of TV data centre |  |  |
| 7.7 | Delivery and installation of patch panels Cat. 6A SFTP cladded for interconnections of communication / server equipment within data centre with 24 x RJ45 module. The panel must be equipped with frames for mechanical dividing of cables, system for connecting the cable coating and conductor for the connection to potential equalisation system. Patch panel is installed into racks as per scheme and technical description for connecting the cabinet, provided for in design documentation.  - Patch panel is 19" for 24 modules, with self-adhesive label for the port number, empty, 1HU high. The price of the panel must include work and installation......pcs 46- RJ45 Module for patch panel Cat.6A 10Gbit, STP (SFB). The price of the panel must include work and installation......pcs 90 | Delivery and installation of patch panels Cat. 6A SFTP cladded for interconnections of communication / server equipment within data centre with 24 x RJ45 module. The panel must be equipped with frames for mechanical dividing of cables, system for connecting the cable coating and conductor for the connection to potential equalisation system. Patch panel is installed into racks as per scheme and technical description for connecting the cabinet, provided for in design documentation.  - Patch panel is 19" for 24 modules, with self-adhesive label for the port number, empty, 1HU high. The price of the panel must include work and installation......pcs 46- RJ45 Module for patch panel Cat.6A 10Gbit, STP (SFB). The price of the panel must include work and installation......pcs 90 | set | 1 |
| 7.8 | Delivery and installation of FO patch panel 24xLC-Duplex for optical interconnection with telecommunication room on the 1st floor and cabinet within the TV Data Centre. FO patch panel is with 24xLC-Duplex ports, equipped with a frame for mechanical dividing of cables, system for connecting the cable coating and conductor for the connection to potential equalisation system.- FO Patch Panel 19"", 1U 24 x LC Duplex MM 50/125 OM4 with equipment for labelling panel ports (for LC adapters with feeders ready to receipt predetermined and prefabricated optical cable 2 x 24x50/125, OM4 finished with LC adapters on both ends). The price of the panel must include work and installation of equipment......pcs 2- FO Adapter LC duplex, MM, plastic, ceramic coating, grey. The price of the panel must include work and installation of equipment......pcs 48- FO Pigtail LC, OM4, multimode, 50/125um, 2m, 4 pieces in a set. The price of the panel must include work and installation of equipment......pcs 24 | Delivery and installation of FO patch panel 24xLC-Duplex for optical interconnection with telecommunication room on the 1st floor and cabinet within the TV Data Centre. FO patch panel is with 24xLC-Duplex ports, equipped with a frame for mechanical dividing of cables, system for connecting the cable coating and conductor for the connection to potential equalisation system.- FO Patch Panel 19"", 1U 24 x LC Duplex MM 50/125 OM4 with equipment for labelling panel ports (for LC adapters with feeders ready to receipt predetermined and prefabricated optical cable 2 x 24x50/125, OM4 finished with LC adapters on both ends). The price of the panel must include work and installation of equipment......pcs 2- FO Adapter LC duplex, MM, plastic, ceramic coating, grey. The price of the panel must include work and installation of equipment......pcs 48- FO Pigtail LC, OM4, multimode, 50/125um, 2m, 4 pieces in a set. The price of the panel must include work and installation of equipment......pcs 24 | set | 1 |
| 7.9 | Delivery and laying of installation halogen free cable type S/FTP cat 6a/ Class EA 4x2x23 AVG LSOH. The installation cable serves for inter-rack interconnections and connection. | Delivery and laying of installation halogen free cable type S/FTP cat 6a/ Class EA 4x2x23 AVG LSOH. The installation cable serves for inter-rack interconnections and connection. | m | 1000 |
| 7.10 | Delivery and installation of optical cable 24 x 9/125um - OS1 for interconnection of Telecommunication room and rack cabinet in the Data Centre- Optical cable 24 x 9/125um -OS1, FRNC- LS0H, LooseTube  | Delivery and installation of optical cable 24 x 9/125um - OS1 for interconnection of Telecommunication room and rack cabinet in the Data Centre- Optical cable 24 x 9/125um -OS1, FRNC- LS0H, LooseTube  | m | 70 |
| 7.11 | Plug for installation on DIN35 rail with RJ45 connector-Frame for RJ45 module (SFA, SFB) for DIN rail-RJ45 Module, Cat.6a 10Gbit, STP (SFA)Set: delivery, installation, linking, and connecting to patch panels. | Plug for installation on DIN35 rail with RJ45 connector-Frame for RJ45 module (SFA, SFB) for DIN rail-RJ45 Module, Cat.6a 10Gbit, STP (SFA)Set: delivery, installation, linking, and connecting to patch panels. | pcs. | 3 |
| 7.12 | Making connections on patch panels cat.6a with labelling and testing.Link testing is to be conducted with a tester that can measure at least 500MHz, issuing certificate for each link. | Making connections on patch panels cat.6a with labelling and testing.Link testing is to be conducted with a tester that can measure at least 500MHz, issuing certificate for each link. | pcs. | 90 |
| 7.13 | Making FO connections on patch panels-Finishing of FO pre-installed cable in FO patch panel, with shunting of the FO cable reserve. Set: installation, connection, labelling of connections.-Final measurements on optical cable, making a measurement protocol. | Making FO connections on patch panels-Finishing of FO pre-installed cable in FO patch panel, with shunting of the FO cable reserve. Set: installation, connection, labelling of connections.-Final measurements on optical cable, making a measurement protocol. | pcs. | 48 |
| 7.14 | Rack cabinets for placement of local network equipment – RACK TV.- 19" on-wall rack cabinet 12HU, 635/600/395 (HxWxL), max. capacity 30 kg........ pcs. 1- Cooler with filter and grid for the on-wall rack cabinet, 120x120 ..... pcs. 1- Cooler thermostat 1 N/O ....pcs. 1- 19" supply panel with 8 plug in points –Schuko, PVC, 1.25HU ..... pcs. 2- 19" panel for cable shunting, 1HU, with 5 bigger PVC coils 80x40mm .... pcs. 2- 19" Fixed shelf 250mm deep, 1HU, 15kg max, perforated, for placement of video surveillance system equipment ..... pcs. 1- 19" Patch panel for 24 modules, empty, 1HU high, toolless line.... pcs. 1- FO Patch Panel 19", 1U 4 x LC Duplex MM 50/125 OM4 (for LC adapters, with splice cassettes and coils for shunting and OV finishing)...... pcs. 1- Toolless line -RJ45 Module, Cat.6, STP (SFA) ....... pcs. 24 - Patch cable RJ45, Cat.6, U/UTP, grey, 1m ..... pcs. 20- Patch cable RJ45, Cat.6, U/UTP, grey, 2m ..... pcs. 5- Patch cable RJ45, Cat.6, U/UTP, grey, 3m ..... pcs. 5- Managed L2 28-Port 10/100/1000 Gigabit Ethernet Switch similar to type of brand Cisco SG300-28 or equivalent ...... pcs. 1- Gigabit Ethernet SX Mini-GBIC SFP Transceiver ..... pcs. 2- Firewall with 10 x GE RJ45 ports (including 7 x Internal Ports, 2xWAN Ports, 1xDMZ Port) similar to type FG-60E Fortinet FortiGate or equivalent...... pcs. 1 | Rack cabinets for placement of local network equipment – RACK TV.- 19" on-wall rack cabinet 12HU, 635/600/395 (HxWxL), max. capacity 30 kg........ pcs. 1- Cooler with filter and grid for the on-wall rack cabinet, 120x120 ..... pcs. 1- Cooler thermostat 1 N/O ....pcs. 1- 19" supply panel with 8 plug in points –Schuko, PVC, 1.25HU ..... pcs. 2- 19" panel for cable shunting, 1HU, with 5 bigger PVC coils 80x40mm .... pcs. 2- 19" Fixed shelf 250mm deep, 1HU, 15kg max, perforated, for placement of video surveillance system equipment ..... pcs. 1- 19" Patch panel for 24 modules, empty, 1HU high, toolless line.... pcs. 1- FO Patch Panel 19", 1U 4 x LC Duplex MM 50/125 OM4 (for LC adapters, with splice cassettes and coils for shunting and OV finishing)...... pcs. 1- Toolless line -RJ45 Module, Cat.6, STP (SFA) ....... pcs. 24 - Patch cable RJ45, Cat.6, U/UTP, grey, 1m ..... pcs. 20- Patch cable RJ45, Cat.6, U/UTP, grey, 2m ..... pcs. 5- Patch cable RJ45, Cat.6, U/UTP, grey, 3m ..... pcs. 5- Managed L2 28-Port 10/100/1000 Gigabit Ethernet Switch similar to type of brand Cisco SG300-28 or equivalent ...... pcs. 1- Gigabit Ethernet SX Mini-GBIC SFP Transceiver ..... pcs. 2- Firewall with 10 x GE RJ45 ports (including 7 x Internal Ports, 2xWAN Ports, 1xDMZ Port) similar to type FG-60E Fortinet FortiGate or equivalent...... pcs. 1 | set | 1 |
| 7.15 | Delivery and laying of installation halogen free cable type S/FTP cat 6a/ Class EA 4x2x23 AVG LSOH. The installation cable serves for equipment in inter-space and in the Data centre space. | Delivery and laying of installation halogen free cable type S/FTP cat 6a/ Class EA 4x2x23 AVG LSOH. The installation cable serves for equipment in inter-space and in the Data centre space. | m | 500 |
| 7.16 | Delivery and installation of optical cable 8x50/125um-OM4, FRNC-LS0H, LooseTube. The installation cable is for the equipment in the RACK TV inter-space, interconnection to Telecommunication room. | Delivery and installation of optical cable 8x50/125um-OM4, FRNC-LS0H, LooseTube. The installation cable is for the equipment in the RACK TV inter-space, interconnection to Telecommunication room. | m | 35 |
| 7.17 | Making connections on patch panels cat.6a with labelling and testing.Link testing is to be conducted with a tester that can measure at least 500MHz, issuing certificate for each link. | Making connections on patch panels cat.6a with labelling and testing.Link testing is to be conducted with a tester that can measure at least 500MHz, issuing certificate for each link. | pcs. | 24 |
| 7.18 | Making FO connections on patch panels. Finishing of FO pre-installed cable in FO patch panel, with shunting of FO cable reserve. -Set: installation, connection, labelling the connections...... pcs. 8- Installation of RACK TV cabinets......pcs.1- Installation of elements in the field – connections RJ45.... pcs. 24- Final installation, start-up with all necessary construction works in execution of installations (including making of openings and slots, closing the openings and slots in the walls). Installation of fire resistant barriers in places where cables pass from one fire protection sector to another, together with spraying the cables with attested fire resistant mixture (to the opening), all according to design detail.....lump 1 | Making FO connections on patch panels. Finishing of FO pre-installed cable in FO patch panel, with shunting of FO cable reserve. -Set: installation, connection, labelling the connections...... pcs. 8- Installation of RACK TV cabinets......pcs.1- Installation of elements in the field – connections RJ45.... pcs. 24- Final installation, start-up with all necessary construction works in execution of installations (including making of openings and slots, closing the openings and slots in the walls). Installation of fire resistant barriers in places where cables pass from one fire protection sector to another, together with spraying the cables with attested fire resistant mixture (to the opening), all according to design detail.....lump 1 | set | 1 |
|  | **Radio Data Centre, 2nd floor** |  |  |  |
| 7.19 | Rack cabinet 600×2000×1200, 42U in configuration with the following elements:- 1× front door perforated, single-wing 180°- 1× back door perforated, double-wing 180°- 1× upper panel modular for introduction of cables and opening for the cooler- 2× 19" frames adjustable in depth with height marks “Unita”- 4× spacer for passive cooling- 1× grounding- 50× M5 cage nut with bolt- Cabinet capacity at least: 1500 kg.- Cabinet colour: RAL 7035 frames and panelsRAL 9005 internal installation- Certificates: UL/ cUL(Rack cabinets are from items labelled in the design as: SR01, SR02, SR03, SR04, SR06, SR07, SR09, SR10, SR11, SR12). | Rack cabinet 600×2000×1200, 42U in configuration with the following elements:- 1× front door perforated, single-wing 180°- 1× back door perforated, double-wing 180°- 1× upper panel modular for introduction of cables and opening for the cooler- 2× 19" frames adjustable in depth with height marks “Unita”- 4× spacer for passive cooling- 1× grounding- 50× M5 cage nut with bolt- Cabinet capacity at least: 1500 kg.- Cabinet colour: RAL 7035 frames and panelsRAL 9005 internal installation- Certificates: UL/ cUL(Rack cabinets are from items labelled in the design as: SR01, SR02, SR03, SR04, SR06, SR07, SR09, SR10, SR11, SR12). | pcs. | 10 |
| 7.20 | Delivery and installation of additional components for required rack cabinets on item 7.19:- Upper frame for cable routes, set =2.... set 10- Interior cover panel 600x2000 Colour: RAL 9005 ...... pcs. 10- Magnetic cover L=5m.... pcs. 10- Cable coil 85×43, set=10 ...set 10- 19" Blank panel 3U (3× 1U), RAL9005, set= 9U (3× 3U)...... set 10- Bolt M5×16, set=50...... set 5- Cage nut M5, set=50.... set 5- Full grounding and connecting of rack cabinet to the potential equalisation bus, as stipulated in heavy current design ... pcs. 10 | Delivery and installation of additional components for required rack cabinets on item 7.19:- Upper frame for cable routes, set =2.... set 10- Interior cover panel 600x2000 Colour: RAL 9005 ...... pcs. 10- Magnetic cover L=5m.... pcs. 10- Cable coil 85×43, set=10 ...set 10- 19" Blank panel 3U (3× 1U), RAL9005, set= 9U (3× 3U)...... set 10- Bolt M5×16, set=50...... set 5- Cage nut M5, set=50.... set 5- Full grounding and connecting of rack cabinet to the potential equalisation bus, as stipulated in heavy current design ... pcs. 10 | set | 1 |
| 7.21 | Rack cabinet 800×2000×1200, 42U in configuration with the following elements:- 1× front door perforated, single-wing 180°- 1× back door perforated, double-wing 180°- 1× upper panel modular for introduction of cables and opening for the cooler- 2× 19" frames adjustable in depth with height marks “Unita”- 4× spacer for passive cooling- 1× grounding- 50× M5 cage nut with bolt- Cabinet capacity at least: 1500 kg.- Cabinet colour: RAL 7035 frames and panelsRAL 9005 internal installation- Certificates: UL/ cUL(Rack cabinets are from items labelled in the design as: SR05, SR08.) | Rack cabinet 800×2000×1200, 42U in configuration with the following elements:- 1× front door perforated, single-wing 180°- 1× back door perforated, double-wing 180°- 1× upper panel modular for introduction of cables and opening for the cooler- 2× 19" frames adjustable in depth with height marks “Unita”- 4× spacer for passive cooling- 1× grounding- 50× M5 cage nut with bolt- Cabinet capacity at least: 1500 kg.- Cabinet colour: RAL 7035 frames and panelsRAL 9005 internal installation- Certificates: UL/ cUL(Rack cabinets are from items labelled in the design as: SR05, SR08.) | pcs. | 2 |
| 7.22 | Delivery and installation of additional components for required rack cabinets on item 7.21:- Upper frame for cable routes, set =2 .... set 2- Interior cover panel, 800x2000Colour: RAL 9005, Divides cool and warm zone inside the cabinet + 6 additional vertical 1U 19" mounting positions ......pcs. 2- Cable rack 6U, set=14, Colour: RAL 9005 ....... set 2- Cable coil 125×65, set=10 ...set 2- 19" Blank panel 3U (3× 1U), RAL9005, set= 9U (3× 3U) ..... set 2- Bolt M5×16, set=50 .... set 1- Cage nut M5, set =50 ......set 1- External joint, set =6....set 14- Full grounding and connecting of rack cabinet to the potential equalisation bus, as stipulated in heavy current design... pcs. 2 | Delivery and installation of additional components for required rack cabinets on item 7.21:- Upper frame for cable routes, set =2 .... set 2- Interior cover panel, 800x2000Colour: RAL 9005, Divides cool and warm zone inside the cabinet + 6 additional vertical 1U 19" mounting positions ......pcs. 2- Cable rack 6U, set=14, Colour: RAL 9005 ....... set 2- Cable coil 125×65, set=10 ...set 2- 19" Blank panel 3U (3× 1U), RAL9005, set= 9U (3× 3U) ..... set 2- Bolt M5×16, set=50 .... set 1- Cage nut M5, set =50 ......set 1- External joint, set =6....set 14- Full grounding and connecting of rack cabinet to the potential equalisation bus, as stipulated in heavy current design... pcs. 2 |  |  |
| 7.23 | Delivery and installation of the basic modular distribution supply unit.Supply modular system – C13 with fuses and the following components: - Frame for plugin modules 1200mm, 2×3×16A...... pcs. 12- Mounting accessorise.....pcs. 12- Connecting cable, 3m IEC 309/ X-Com connectors 5-pole/ 16A/ 3~ ......pcs. 24- Plugin module 4×C13 with surge protection per plug...pcs. 96- Plugin module 4×C19..... pcs. 12- Plugin module 4×Schuko .... pcs. 12Delivery and installation...pcs. 12 | Delivery and installation of the basic modular distribution supply unit.Supply modular system – C13 with fuses and the following components: - Frame for plugin modules 1200mm, 2×3×16A...... pcs. 12- Mounting accessorise.....pcs. 12- Connecting cable, 3m IEC 309/ X-Com connectors 5-pole/ 16A/ 3~ ......pcs. 24- Plugin module 4×C13 with surge protection per plug...pcs. 96- Plugin module 4×C19..... pcs. 12- Plugin module 4×Schuko .... pcs. 12Delivery and installation...pcs. 12 | set | 1 |
| 7.24 | Delivery and installation of patch panels Cat. 6A SFTP cladded for interconnections of communication / server equipment within data centre with 24 x RJ45 module. The panel must be equipped with frames for mechanical dividing of cables, system for connecting the cable coating and conductor for the connection to potential equalisation system. Patch panel is installed into racks as per scheme and technical description for connecting the cabinet, provided for in design documentation.  - Patch panel is 19" for 24 modules, with self-adhesive label for the port number, empty, 1HU high. The price of the panel must include work and installation......pcs 22- RJ45 Module for patch panel Cat.6A 10Gbit, STP (SFB). The price of the panel must include work and installation......pcs 40 | Delivery and installation of patch panels Cat. 6A SFTP cladded for interconnections of communication / server equipment within data centre with 24 x RJ45 module. The panel must be equipped with frames for mechanical dividing of cables, system for connecting the cable coating and conductor for the connection to potential equalisation system. Patch panel is installed into racks as per scheme and technical description for connecting the cabinet, provided for in design documentation.  - Patch panel is 19" for 24 modules, with self-adhesive label for the port number, empty, 1HU high. The price of the panel must include work and installation......pcs 22- RJ45 Module for patch panel Cat.6A 10Gbit, STP (SFB). The price of the panel must include work and installation......pcs 40 | set | 1 |
| 7.25 | Delivery and installation of FO patch panel 24xLC-Duplex for optical interconnection with telecommunication room on the 1st floor and cabinet within the TV Data Centre. FO patch panel is with 24xLC-Duplex ports, equipped with a frame for mechanical dividing of cables, system for connecting the cable coating and conductor for the connection to potential equalisation system.- FO Patch Panel 19"", 1U 24 x LC Duplex MM 50/125 OM4 with equipment for labelling panel ports (for LC adapters with feeders ready to receipt predetermined and prefabricated optical cable 2 x 24x50/125, OM4 finished with LC adapters on both ends). The price of the panel must include work and installation of equipment......pcs 2- FO Adapter LC duplex, MM, plastic, ceramic coating, grey. The price of the panel must include work and installation of equipment......pcs 48- FO Pigtail LC, OM4, multimode, 50/125um, 2m, 4 pieces in a set. The price of the panel must include work and installation of equipment......pcs 24 | Delivery and installation of FO patch panel 24xLC-Duplex for optical interconnection with telecommunication room on the 1st floor and cabinet within the TV Data Centre. FO patch panel is with 24xLC-Duplex ports, equipped with a frame for mechanical dividing of cables, system for connecting the cable coating and conductor for the connection to potential equalisation system.- FO Patch Panel 19"", 1U 24 x LC Duplex MM 50/125 OM4 with equipment for labelling panel ports (for LC adapters with feeders ready to receipt predetermined and prefabricated optical cable 2 x 24x50/125, OM4 finished with LC adapters on both ends). The price of the panel must include work and installation of equipment......pcs 2- FO Adapter LC duplex, MM, plastic, ceramic coating, grey. The price of the panel must include work and installation of equipment......pcs 48- FO Pigtail LC, OM4, multimode, 50/125um, 2m, 4 pieces in a set. The price of the panel must include work and installation of equipment......pcs 24 | set | 1 |
| 7.26 | Delivery and laying of installation halogen free cable type S/FTP cat 6a/ Class EA 4x2x23 AVG LSOH. The installation cable serves for inter-rack interconnections and connection. | Delivery and laying of installation halogen free cable type S/FTP cat 6a/ Class EA 4x2x23 AVG LSOH. The installation cable serves for inter-rack interconnections and connection. | m | 400 |
| 7.27 | Delivery and installation of optical cable 24 x 9/125um - OS1 for interconnection of Telecommunication room and rack cabinet in the Data Centre- Optical cable 24 x 9/125um -OS1, FRNC- LS0H, LooseTube  | Delivery and installation of optical cable 24 x 9/125um - OS1 for interconnection of Telecommunication room and rack cabinet in the Data Centre- Optical cable 24 x 9/125um -OS1, FRNC- LS0H, LooseTube  | m | 250 |
| 7.28 | Plug for installation on DIN35 rail with RJ45 connector-Frame for RJ45 module (SFA, SFB) DIN rail-RJ45 Module, Cat.6a 10Gbit, STP (SFA)Set: delivery, installation, linking, and connecting to patch panels. | Plug for installation on DIN35 rail with RJ45 connector-Frame for RJ45 module (SFA, SFB) DIN rail-RJ45 Module, Cat.6a 10Gbit, STP (SFA)Set: delivery, installation, linking, and connecting to patch panels. | pcs. | 3 |
| 7.29 | Making connections on patch panels cat.6a with labelling and testing.Link testing is to be conducted with a tester that can measure at least 500MHz, issuing certificate for each link. | Making connections on patch panels cat.6a with labelling and testing.Link testing is to be conducted with a tester that can measure at least 500MHz, issuing certificate for each link. | pcs. | 40 |
| 7.30 | Making FO connections on patch panels-Finishing of FO pre-installed cable in FO patch panel, with shunting of the FO cable reserve. Set: installation, connection, labelling of connections.-Final measurements on optical cable, making a measurement protocol. | Making FO connections on patch panels-Finishing of FO pre-installed cable in FO patch panel, with shunting of the FO cable reserve. Set: installation, connection, labelling of connections.-Final measurements on optical cable, making a measurement protocol. | pcs. | 48 |
| 7.31 | Delivery and installation of rack cabinets for placement of local LAN network equipment – RACK Radio, with the following components and equipment.- 19" on-wall rack cabinet 12HU, 635/600/395 (HxWxL), max. capacity 30 kg........ pcs. 1- Cooler with filter and grid for the on-wall rack cabinet, 120x120 ..... pcs. 1- Cooler thermostat 1 N/O ....pcs. 1- 19" supply panel with 8 plug in points –Schuko, PVC, 1.25HU ..... pcs. 2- 19" panel for cable shunting, 1HU, with 5 bigger PVC coils 80x40mm .... pcs. 2- 19" Fixed shelf 250mm deep, 1HU, 15kg max, perforated, for placement of video surveillance system equipment ..... pcs. 1- 19" Patch panel for 24 modules, empty, 1HU high, toolless line.... pcs. 1- FO Patch Panel 19", 1U 4 x LC Duplex MM 50/125 OM4 (for LC adapters, with splice cassettes and coils for shunting and OV finishing)...... pcs. 1- Toolless line -RJ45 Module, Cat.6, STP (SFA) ....... pcs. 24 - Patch cable RJ45, Cat.6, U/UTP, grey, 1m ..... pcs. 24- Patch cable RJ45, Cat.6, U/UTP, grey, 2m ..... pcs. 5- Patch cable RJ45, Cat.6, U/UTP, grey, 3m ..... pcs. 5- Managed L2 28-Port 10/100/1000 Gigabit Ethernet Switch similar to type of brand Cisco SG300-28 or equivalent ...... pcs. 1- Gigabit Ethernet SX Mini-GBIC SFP Transceiver ..... pcs. 2- Firewall with 10 x GE RJ45 ports (including 7 x Internal Ports, 2xWAN Ports, 1xDMZ Port) similar to type FG-60E Fortinet FortiGate or equivalent...... pcs. 1. | Delivery and installation of rack cabinets for placement of local LAN network equipment – RACK Radio, with the following components and equipment.- 19" on-wall rack cabinet 12HU, 635/600/395 (HxWxL), max. capacity 30 kg........ pcs. 1- Cooler with filter and grid for the on-wall rack cabinet, 120x120 ..... pcs. 1- Cooler thermostat 1 N/O ....pcs. 1- 19" supply panel with 8 plug in points –Schuko, PVC, 1.25HU ..... pcs. 2- 19" panel for cable shunting, 1HU, with 5 bigger PVC coils 80x40mm .... pcs. 2- 19" Fixed shelf 250mm deep, 1HU, 15kg max, perforated, for placement of video surveillance system equipment ..... pcs. 1- 19" Patch panel for 24 modules, empty, 1HU high, toolless line.... pcs. 1- FO Patch Panel 19", 1U 4 x LC Duplex MM 50/125 OM4 (for LC adapters, with splice cassettes and coils for shunting and OV finishing)...... pcs. 1- Toolless line -RJ45 Module, Cat.6, STP (SFA) ....... pcs. 24 - Patch cable RJ45, Cat.6, U/UTP, grey, 1m ..... pcs. 24- Patch cable RJ45, Cat.6, U/UTP, grey, 2m ..... pcs. 5- Patch cable RJ45, Cat.6, U/UTP, grey, 3m ..... pcs. 5- Managed L2 28-Port 10/100/1000 Gigabit Ethernet Switch similar to type of brand Cisco SG300-28 or equivalent ...... pcs. 1- Gigabit Ethernet SX Mini-GBIC SFP Transceiver ..... pcs. 2- Firewall with 10 x GE RJ45 ports (including 7 x Internal Ports, 2xWAN Ports, 1xDMZ Port) similar to type FG-60E Fortinet FortiGate or equivalent...... pcs. 1. | set | 1 |
| 7.32 | Delivery and laying of installation halogen free cable type S/FTP cat 6a/ Class EA 4x2x23 AVG LSOH. The installation cable serves for the equipment in the inter-space and Data Centre space. | Delivery and laying of installation halogen free cable type S/FTP cat 6a/ Class EA 4x2x23 AVG LSOH. The installation cable serves for the equipment in the inter-space and Data Centre space. | m | 550 |
| 7.33 | Delivery and laying of installation halogen free cable type S/FTP cat 7 for external installation. | Delivery and laying of installation halogen free cable type S/FTP cat 7 for external installation. | m | 85 |
| 7.34 | Delivery and installation of optical cable 8x50/125um-OM4, FRNC-LS0H, LooseTube. The installation cable is for the equipment in the RACK Radio inter-space, interconnection to Telecommunication room. | Delivery and installation of optical cable 8x50/125um-OM4, FRNC-LS0H, LooseTube. The installation cable is for the equipment in the RACK Radio inter-space, interconnection to Telecommunication room. | m | 150 |
| 7.35 | Making connections on patch panels cat.6A with labelling and testing.Link testing is to be conducted with a tester that can measure at least 500MHz, issuing certificate for each link. | Making connections on patch panels cat.6A with labelling and testing.Link testing is to be conducted with a tester that can measure at least 500MHz, issuing certificate for each link. | pcs. | 24 |
| 7.36 | Making FO connections on patch panels. Finishing of FO pre-installed cable in FO patch panel, with shunting of FO cable reserve. -Set: installation, connection, labelling the connections...... pcs. 8- Installation of RACK Radio cabinets......pcs.1- Installation of elements in the field – connections RJ45.... pcs. 24- Final installation, start-up with all necessary construction works in execution of installations (including making of openings and slots, closing the openings and slots in the walls). Installation of fire resistant barriers in places where cables pass from one fire protection sector to another, together with spraying the cables with attested fire resistant mixture (to the opening), all according to design detail.....lump 1. | Making FO connections on patch panels. Finishing of FO pre-installed cable in FO patch panel, with shunting of FO cable reserve. -Set: installation, connection, labelling the connections...... pcs. 8- Installation of RACK Radio cabinets......pcs.1- Installation of elements in the field – connections RJ45.... pcs. 24- Final installation, start-up with all necessary construction works in execution of installations (including making of openings and slots, closing the openings and slots in the walls). Installation of fire resistant barriers in places where cables pass from one fire protection sector to another, together with spraying the cables with attested fire resistant mixture (to the opening), all according to design detail.....lump 1. | set | 1 |
| **8** | **IP VIDEO SURVEILLANCE SYSTEM** |  |  |  |
|  | **TV Data centre, 1st floor** |  |  |  |
| 8.1 | 2 Mpix day/night network IP camera in vandal-proof IK10 housing, 3DNR, 1/2.8” 2 Megapixel progressive STARVIS CMOS, H.265 / H.264 compression, maximal resolution 25/30fps@1080p (1920x1080), ICR filter, WDR(120dB), automatic control of white colour, automatic control of intensification, 3D noise reduction, incorporated motorised i lens 2.7-13.5 mm, minimal lighting of 0 lux, maximal range of IC diodes is 30 meters, micro SD card slot to 128GB. ONVIF support, 12VDC / PoE supply. IP67,IK10, PoE.  | 2 Mpix day/night network IP camera in vandal-proof IK10 housing, 3DNR, 1/2.8” 2 Megapixel progressive STARVIS CMOS, H.265 / H.264 compression, maximal resolution 25/30fps@1080p (1920x1080), ICR filter, WDR(120dB), automatic control of white colour, automatic control of intensification, 3D noise reduction, incorporated motorised i lens 2.7-13.5 mm, minimal lighting of 0 lux, maximal range of IC diodes is 30 meters, micro SD card slot to 128GB. ONVIF support, 12VDC / PoE supply. IP67, IK10, PoE.  | pcs. | 5 |
| 8.2 | Wall socket for concealing the cables and connectors in installation of dome cameras. Waterproof COG wall Al frame, white colour. Dimensions max.160x125x80 mm weighing up to 0.5 kg. Operative temperature -40°C ~ + 60 °C. | Wall socket for concealing the cables and connectors in installation of dome cameras. Waterproof COG wall Al frame, white colour. Dimensions max.160x125x80 mm weighing up to 0.5 kg. Operative temperature -40°C ~ + 60 °C. | pcs. | 5 |
| 8.3 | P2P network video recorder for 8 IP camera of maximal resolution of 8 Mpix. Recording up to 200Mbps, H.265/H.264, maximal resolution 8 megapixels, 1 HDMI output, 1 VGA output, output resolution up to 3840×2160, possibility of connecting up to 2 hours hard disks, maximal capacity of which is 12TB in total, 2 USB ports (1 USB3.0), 4 alarm inputs, 2 relay outputs, surveillance via Internet, software for smart mobile phones.  | P2P network video recorder for 8 IP camera of maximal resolution of 8 Mpix. Recording up to 200Mbps, H.265/H.264, maximal resolution 8 megapixels, 1 HDMI output, 1 VGA output, output resolution up to 3840×2160, possibility of connecting up to 2 hours hard disks, maximal capacity of which is 12TB in total, 2 USB ports (1 USB3.0), 4 alarm inputs, 2 relay outputs, surveillance via Internet, software for smart mobile phones.  | pcs. | 1 |
| 8.4 | Surveillance HDD 2 TB SATA 6Gb/s, 64MB Cache.  | Surveillance HDD 2 TB SATA 6Gb/s, 64MB Cache.  | pcs. | 2 |
| 8.5 | Installation, start-up and configuration of network video surveillance system. | Installation, start-up and configuration of network video surveillance system. | lump | 1 |
|  | **Radio Data Centre, 2nd floor** |  |  |  |
| 8.6 | 2 Mpix day/night network IP camera in vandal-proof IK10 housing, 3DNR, 1/2.8” 2 Megapixel progressive STARVIS CMOS, H.265 / H.264 compression, maximal resolution 25/30fps@1080p (1920x1080), ICR filter, WDR(120dB), automatic control of white colour, automatic control of intensification, 3D noise reduction, incorporated motorised i lens 2.7-13.5 mm, minimal lighting of 0 lux, maximal range of IC diodes is 30 meters, micro SD card slot to 128GB. ONVIF support, 12VDC / PoE supply. IP67, IK10, PoE.  | 2 Mpix day/night network IP camera in vandal-proof IK10 housing, 3DNR, 1/2.8” 2 Megapixel progressive STARVIS CMOS, H.265 / H.264 compression, maximal resolution 25/30fps@1080p (1920x1080), ICR filter, WDR(120dB), automatic control of white colour, automatic control of intensification, 3D noise reduction, incorporated motorised i lens 2.7-13.5 mm, minimal lighting of 0 lux, maximal range of IC diodes is 30 meters, micro SD card slot to 128GB. ONVIF support, 12VDC / PoE supply. IP67, IK10, PoE.  | pcs. | 6 |
| 8.7 | Wall socket for concealing the cables and connectors in installation of dome cameras. Waterproof COG wall Al frame, white colour. Dimensions max.160x125x80 mm weighing up to 0.5 kg. Operational temperature -40°C ~ + 60 °C. | Wall socket for concealing the cables and connectors in installation of dome cameras. Waterproof COG wall Al frame, white colour. Dimensions max.160x125x80 mm weighing up to 0.5 kg. Operational temperature -40°C ~ + 60 °C. | pcs. | 6 |
| 8.8 | Full HD 1080p day/night network IP camera, 2 megapixels, ICR filter, WDR(120dB), 3DNR, 1/3'' EXMOR CMOS chip with progressive scanning. H.264 / MJPEG compression, 25/30 fps in 1080p resolution, supports auto iris lens, minimal lighting 0.01 lux, two-way audio communication, micro SD slot (maximal card 32GB), analogue video output, ONVIF support, 12VDC / PoE supply. Smart detection: Tripwire, Intrusion, Scene change, Face detect. | Full HD 1080p day/night network IP camera, 2 megapixels, ICR filter, WDR(120dB), 3DNR, 1/3'' EXMOR CMOS chip with progressive scanning. H.264 / MJPEG compression, 25/30 fps in 1080p resolution, supports auto iris lens, minimal lighting 0.01 lux, two-way audio communication, micro SD slot (maximal card 32GB), analogue video output, ONVIF support, 12VDC / PoE supply. Smart detection: Tripwire, Intrusion, Scene change, Face detect. | pcs. | 1 |
| 8.9 | CS mount varifocal aspheric lens, 1/2.7'', DC auto iris, 2.7~12mm, day/night, F1.6 HD lens for 1080p cameras (3 megapixels).  | CS mount varifocal aspheric lens, 1/2.7'', DC auto iris, 2.7~12mm, day/night, F1.6 HD lens for 1080p cameras (3 megapixels).  | pcs. | 1 |
| 8.10 | Housing for box cameras. Installed heater and cooler. Operating conditions from -40 to 60 degrees C. Protection: IP67, IK10, Dimensions 410x165x135mm, weight up to 3 kg.  | Housing for box cameras. Installed heater and cooler. Operating conditions from -40 to 60 degrees C. Protection: IP67, IK10, Dimensions 410x165x135mm, weight up to 3 kg.  | pcs. | 1 |
| 8.11 | Wall-mount Al camera frame. | Wall-mount Al camera frame. | pcs. | 1 |
| 8.12 | Surge protection for the outdoor camera model.  | Surge protection for the outdoor camera model.  | pcs. | 2 |
| 8.13 | P2P network video recorder for 8 IP camera of maximal resolution of 8 Mpix. Recording up to 200Mbps, H.265/H.264, maximal resolution 8 megapixels, 1 HDMI output, 1 VGA output, output resolution up to 3840×2160, possibility of connecting up to 2 hours hard disks, maximal capacity of which is 12TB in total, 2 USB ports (1 USB3.0), 4 alarm inputs, 2 relay outputs, surveillance via Internet, software for smart mobile phones.  | P2P network video recorder for 8 IP camera of maximal resolution of 8 Mpix. Recording up to 200Mbps, H.265/H.264, maximal resolution 8 megapixels, 1 HDMI output, 1 VGA output, output resolution up to 3840×2160, possibility of connecting up to 2 hours hard disks, maximal capacity of which is 12TB in total, 2 USB ports (1 USB3.0), 4 alarm inputs, 2 relay outputs, surveillance via Internet, software for smart mobile phones.  | pcs. | 1 |
| 8.14 | Surveillance HDD 2 TBSATA 6Gb/s, 64MB Cache | Surveillance HDD 2 TBSATA 6Gb/s, 64MB Cache | pcs. | 2 |
| 8.15 | Installation, start-up and configuration of network video surveillance system  | Installation, start-up and configuration of network video surveillance system  | pcs. | 1 |
| **9** | **ACCESS CONTROL SYSTEM** |  |  |  |
|  | **TV Data centre, 1st floor** |  |  |  |
| 9.1 | Installation, start-up and configuration of access control system. - Controller for 4 readers that supports 100,000 cards and 150,000 events. Protocols Wiegand or RS485 for readers (2 or 4 doors), connection via TCP / IP or RS485. Nine actuating inputs (4 for magnetic contacts, 4 for REX buttons, 1 for the alarm). 5 outputs (4 for doors, 1 for the alarm). Supply 12 VDC, 500mA. Box dimensions max. to 280 x 320 x 114 mm. .....pcs. 1 - Accumulator 12V/7Ah. Maximal dimensions 153x67x100mm, weight max. 2.05 kg. ....pcs. 1- Keyboard and card reader 13.56MHz (Mifare). Wiegand26/34 bits RS-485 protocol Vandal-proof RFID Reader. All-metal buttons with blue backlight. Red and Green indicator LEDs. Surface mounted installation, dimensions maximally up to 110mm x 85 mm 26 mm. ....... pcs. 2- REX stainless steel button, NO contact. Dimensions max. 90x30mm. ... pcs. 2- Magnetic mini mounting contact. Diameter up to 9.5 mm, length18 mm. ... pcs. 2- ID Card Mifare 1, 13.56MHz. .....pcs. 50- Delivery and laying the installation halogen free cable, type JH(St)H 2x2x0.8 mm2 FE180/E30 for interconnection of the access control cabinet and emergency ventilation cabinet .... m 50 | Installation, start-up and configuration of access control system. - Controller for 4 readers that supports 100,000 cards and 150,000 events. Protocols Wiegand or RS485 for readers (2 or 4 doors), connection via TCP / IP or RS485. Nine actuating inputs (4 for magnetic contacts, 4 for REX buttons, 1 for the alarm). 5 outputs (4 for doors, 1 for the alarm). Supply 12 VDC, 500mA. Box dimensions max. to 280 x 320 x 114 mm. .....pcs. 1 - Accumulator 12V/7Ah. Maximal dimensions 153x67x100mm, weight max. 2.05 kg. ....pcs. 1- Keyboard and card reader 13.56MHz (Mifare). Wiegand26/34 bits RS-485 protocol Vandal-proof RFID Reader. All-metal buttons with blue backlight. Red and Green indicator LEDs. Surface mounted installation, dimensions maximally up to 110mm x 85 mm 26 mm. ....... pcs. 2- REX stainless steel button, NO contact. Dimensions max. 90x30mm. ... pcs. 2- Magnetic mini mounting contact. Diameter up to 9.5 mm, length18 mm. ... pcs. 2- ID Card Mifare 1, 13.56MHz. .....pcs. 50- Delivery and laying the installation halogen free cable, type JH(St)H 2x2x0.8 mm2 FE180/E30 for interconnection of the access control cabinet and emergency ventilation cabinet .... m 50 | set  | 1 |
|  | **Radio Data Centre, 2nd floor** |  |  |  |
| 9.2 | Installation, start-up and configuration of access control system. - Controller for 4 readers that supports 100,000 cards and 150,000 events. Protocols Wiegand or RS485 for readers (2 or 4 doors), connection via TCP / IP or RS485. Nine actuating inputs (4 for magnetic contacts, 4 for REX buttons, 1 for the alarm). 5 outputs (4 for doors, 1 for the alarm). Supply 12 VDC, 500mA. Box dimensions max. to 280 x 320 x 114 mm. .....pcs. 1 - Accumulator 12V/7Ah. Maximal dimensions 153x67x100mm, weight max. 2.5 kg. ....pcs. 1- Keyboard and card reader 13.56MHz (Mifare). Wiegand 26/34 bits RS-485 protocol Vandal-proof RFID Reader. All-metal buttons with blue backlight. Red and Green indicator LEDs. Surface mounted installation, dimensions maximally up to 110mm x 85 mm 26 mm. ....... pcs. 3- REX stainless steel button, NO contact. Dimensions max. 90x30mm. ... pcs. 3- Magnetic mini mounting contact. Diameter up to 9.5 mm, length18 mm. ... pcs. 3- ID Card Mifare 1, 13.56MHz. .....pcs. 50- Delivery and laying the installation halogen free cable, type JH(St)H 2x2x0.8 mm2 FE180/E30 for interconnection of the access control cabinet and emergency ventilation cabinet .... m 20 | Installation, start-up and configuration of access control system. - Controller for 4 readers that supports 100,000 cards and 150,000 events. Protocols Wiegand or RS485 for readers (2 or 4 doors), connection via TCP / IP or RS485. Nine actuating inputs (4 for magnetic contacts, 4 for REX buttons, 1 for the alarm). 5 outputs (4 for doors, 1 for the alarm). Supply 12 VDC, 500mA. Box dimensions max. to 280 x 320 x 114 mm. .....pcs. 1 - Accumulator 12V/7Ah. Maximal dimensions 153x67x100mm, weight max. 2.5 kg. ....pcs. 1- Keyboard and card reader 13.56MHz (Mifare). Wiegand 26/34 bits RS-485 protocol Vandal-proof RFID Reader. All-metal buttons with blue backlight. Red and Green indicator LEDs. Surface mounted installation, dimensions maximally up to 110mm x 85 mm 26 mm. ....... pcs. 3- REX stainless steel button, NO contact. Dimensions max. 90x30mm. ... pcs. 3- Magnetic mini mounting contact. Diameter up to 9.5 mm, length18 mm. ... pcs. 3- ID Card Mifare 1, 13.56MHz. .....pcs. 50- Delivery and laying the installation halogen free cable, type JH(St)H 2x2x0.8 mm2 FE180/E30 for interconnection of the access control cabinet and emergency ventilation cabinet .... m 20 | set  | 1 |
| **10** | **PHYSICAL PARAMETERS SURVEILLANCE SYSTEM**  |  |  |  |
|  | **TV Data Centre, 1st floor** |  |  |  |
| 10.1 | Installation, connecting and programming the modular system for surveillance of physical parameters in IT environment within the Data Centre. The surveillance system should comprise at least the following elements.- Control processor unit..... pcs. 2- System supply. Input voltage 100-240V, 50/60 Hz. Output voltage 24V DC, 2A.... pcs. 4- Connecting cables C13/C14 IEC320 C13/C14. ... pcs. 4- Installation unit for the system components 1U RAL9005. Installation of devices, maximally up to 3 devices to 1U installation unit... pcs. 4-Cable racks for the installation unit 1U RAL9005..... pcs. 4- Temperature sensors... pcs. 24- Temperature/ Humidity sensor... pcs. 2- Water vapour permeation ribbon-like sensor, 15m. ...... pcs. 2- Crossover cable RJ 45, 2m ... pcs. 22- CAN-BUS cable RJ45, 5m..... pcs. 4- GSM unit+SMS function.... pcs. 1 | Installation, connecting and programming the modular system for surveillance of physical parameters in IT environment within the Data Centre. The surveillance system should comprise at least the following elements.- Control processor unit..... pcs. 2- System supply. Input voltage 100-240V, 50/60 Hz. Output voltage 24V DC, 2A.... pcs. 4- Connecting cables C13/C14 IEC320 C13/C14. ... pcs. 4- Installation unit for the system components 1U RAL9005. Installation of devices, maximally up to 3 devices to 1U installation unit... pcs. 4-Cable racks for the installation unit 1U RAL9005..... pcs. 4- Temperature sensors... pcs. 24- Temperature/ Humidity sensor... pcs. 2- Water vapour permeation ribbon-like sensor, 15m. ...... pcs. 2- Crossover cable RJ 45, 2m ... pcs. 22- CAN-BUS cable RJ45, 5m..... pcs. 4- GSM unit+SMS function.... pcs. 1 | set | 1 |
|  | **Radio Data Centre, 2nd floor** |  |  |  |
| 10.2 | Installation, connecting and programming the modular system for surveillance of physical parameters in IT environment within the Data Centre. The surveillance system should comprise at least the following elements.- Control processor unit..... pcs. 2- System supply. Input voltage 100-240V, 50/60 Hz. Output voltage 24V DC, 2A.... pcs. 4- Connecting cables C13/C14 IEC320 C13/C14. ... pcs. 4- Installation unit for the system components 1U RAL9005. Installation of devices, maximally up to 3 devices to 1U installation unit... pcs. 4-Cable racks for the installation unit 1U RAL9005..... pcs. 4- Temperature sensors... pcs. 12- Temperature/ Humidity sensor... pcs. 2- Water vapour permeation ribbon-like sensor, 15m. ...... pcs. 2- Crossover cable RJ 45, 2m ... pcs. 10- CAN-BUS cable RJ45, 5m..... pcs. 8- GSM unit+SMS function.... pcs. 1 | Installation, connecting and programming the modular system for surveillance of physical parameters in IT environment within the Data Centre. The surveillance system should comprise at least the following elements.- Control processor unit..... pcs. 2- System supply. Input voltage 100-240V, 50/60 Hz. Output voltage 24V DC, 2A.... pcs. 4- Connecting cables C13/C14 IEC320 C13/C14. ... pcs. 4- Installation unit for the system components 1U RAL9005. Installation of devices, maximally up to 3 devices to 1U installation unit... pcs. 4-Cable racks for the installation unit 1U RAL9005..... pcs. 4- Temperature sensors... pcs. 12- Temperature/ Humidity sensor... pcs. 2- Water vapour permeation ribbon-like sensor, 15m. ...... pcs. 2- Crossover cable RJ 45, 2m ... pcs. 10- CAN-BUS cable RJ45, 5m..... pcs. 8- GSM unit+SMS function.... pcs. 1 | set | 1 |
| **11** | **CABLE TRAYS** |  |  |  |
|  | **TV Data centre, 1st floor** |  |  |  |
| 11.1 | Cable rack, PAND WG12BL10, 12' W x 10' L, black, similar to Panduit brand, or equivalent. | Cable rack, PAND WG12BL10, 12' W x 10' L, black, similar to Panduit brand, or equivalent. | m | 36 |
| 11.2 | Cable rack, PAND.WG18BL10, 18' W x 10' L, black, similar to Panduit brand, or equivalent. | Cable rack, PAND.WG18BL10, 18' W x 10' L, black, similar to Panduit brand, or equivalent. | m | 48 |
| 11.3 | Lateral cable racks PAND.WGSW6BL, similar to Panduit brand, or equivalent. | Lateral cable racks PAND.WGSW6BL, similar to Panduit brand, or equivalent. | pcs. | 360 |
| 11.4 | Wall retainer PAND.WGWMTB1830BL, similar to Panduit brand, or equivalent. | Wall retainer PAND.WGWMTB1830BL, similar to Panduit brand, or equivalent. | pcs. | 7 |
| 11.5 | Suspension for cables PAND.WGBMWFBLsimilar to Panduit brand, or equivalent. | Suspension for cables PAND.WGBMWFBLsimilar to Panduit brand, or equivalent. | pcs. | 240 |
| 11.6 | Bend PAND.WGINTBRC6BLsimilar to Panduit brand, or equivalent. | Bend PAND.WGINTBRC6BLsimilar to Panduit brand, or equivalent. | pcs. | 28 |
| 11.7 | Intersection splice PAND.WGINTSPLBL similar to Panduit brand, or equivalent. | Intersection splice PAND.WGINTSPLBL similar to Panduit brand, or equivalent. | pcs. | 14 |
| 11.8 | In splice PAND.WGSPL1218BL similar to Panduit brand, or equivalent. | In splice PAND.WGSPL1218BL similar to Panduit brand, or equivalent. | pcs. | 24 |
| 11.9 | Ceiling bracket PAND.WGTBS18BL similar to Panduit brand, or equivalent. | Ceiling bracket PAND.WGTBS18BL similar to Panduit brand, or equivalent. | pcs. | 5 |
| 11.10 | Small non-specified material | Small non-specified material | lump | 1 |
| 11.11 | Installation and work on the cable tray system | Installation and work on the cable tray system | lump | 1 |
|  | **Radio Data Centre, 2nd floor** |  |  |  |
| 11.12 | Cable rack, PAND WG12BL10, 12' W x 10' L, black, similar to Panduit brand, or equivalent. | Cable rack, PAND WG12BL10, 12' W x 10' L, black, similar to Panduit brand, or equivalent. | m | 32 |
| 11.13 | Cable rack, PAND.WG18BL10, 18' W x 10' L, black, similar to Panduit brand, or equivalent. | Cable rack, PAND.WG18BL10, 18' W x 10' L, black, similar to Panduit brand, or equivalent. | m | 16 |
| 11.14 | Lateral cable racks PAND.WGSW6BL, similar to Panduit brand, or equivalent. | Lateral cable racks PAND.WGSW6BL, similar to Panduit brand, or equivalent. | pcs. | 170 |
| 11.15 | Wall retainer PAND.WGWMTB1830BL, similar to Panduit brand, or equivalent. | Wall retainer PAND.WGWMTB1830BL, similar to Panduit brand, or equivalent. | pcs. | 10 |
| 11.16 | Suspension for cables PAND.WGBMWFBLsimilar to Panduit brand, or equivalent. | Suspension for cables PAND.WGBMWFBLsimilar to Panduit brand, or equivalent. | pcs. | 120 |
| 11.17 | Bend PAND.WGINTBRC6BLsimilar to Panduit brand, or equivalent. | Bend PAND.WGINTBRC6BLsimilar to Panduit brand, or equivalent. | pcs. | 16 |
| 11.18 | Intersection splice PAND.WGINTSPLBL similar to Panduit brand, or equivalent. | Intersection splice PAND.WGINTSPLBL similar to Panduit brand, or equivalent. | pcs. | 6 |
| 11.19 | In splice PAND.WGSPL1218BL similar to Panduit brand, or equivalent. | In splice PAND.WGSPL1218BL similar to Panduit brand, or equivalent. | pcs. | 8 |
| 11.20 | Ceiling bracket PAND.WGTBS18BL similar to Panduit brand, or equivalent.  | Ceiling bracket PAND.WGTBS18BL similar to Panduit brand, or equivalent.  | pcs. | 1 |
| 11.21 | Ceiling bracket PAND.WGTBS12BL similar to Panduit brand, or equivalent. | Ceiling bracket PAND.WGTBS12BL similar to Panduit brand, or equivalent. | pcs. | 2 |
| 11.22 | Wall retainer PAND.WGWMTB12BLsimilar to Panduit brand, or equivalent. | Wall retainer PAND.WGWMTB12BLsimilar to Panduit brand, or equivalent. | pcs. | 10 |
| 11.23 | Small non-specified material | Small non-specified material | lump | 1 |
| 11.24 | Installation and work on the cable tray system | Installation and work on the cable tray system | lump | 1 |
| 11.25 | Drafting the as-built design for all segments of light current electrical installations. | Drafting the as-built design for all segments of light current electrical installations. | lump | 1 |
|  | **Mechanical works and equipment** |  |  |
| **12** | **ROOM 213 – 2nd floor and ROOM 105 – 1st floor** |  |  |
|  | **Cooling equipment and equipment for division of cold zone** **ROOM 213 – 2nd floor**  |  |  |  |
| 12.1 | Interior air conditioning unit. The offered air conditioning unit must be specifically designed for use and application in Data Centres. It has to have integrated heat exchanger based on water-glycol/air, and must guarantee cooling capacity of at least 28 kW per unit. It should have the option of mechanical connecting with standard IT cabinets. In accordance with design solution, it is necessary to offer a solution where heat and water exchanger is installed between two standard rack cabinets. The device should suck in hot air released by equipment in rack cabinets through the back perforated door. The air should be sucked in alongside the entire height so as to annulate zones of hot air collection. The air cooled down should be ejected on the side in front of the cabinet, also alongside the entire height of the cabinet. In that way, the equipment installed in the cabinet is evenly cooled down alongside the entire height thereof.Interior air conditioning unit should be in the same line with other cabinets in the row, not to interfere with any route within the room in case of emergency.Air conditioning unit offered for air circulation must have EC fans in the desired number. Individual cooling capacity should be at least 9 kW per cooler. Increasing the number of EC fans would achieve maximal efficiency, thus reducing electricity consumption. A total of 4 EC fans modules should enable minimal cooling capacity of up to 28 kW, so the device must have installed at least 4 EC fans. Fan modules must be replaceable at any moment, even during the operation of the air conditioning unit. The exchanger must have high-level performances, guaranteeing maximal cooling even in conditions of higher temperatures of the input medium water/glycol. The air conditioning units must be equipped with software that enables automatic control of the incoming air temperature in the cabinets. The speed of fans and flow of the water/glycol mixture for cooling can be automatically adjusted depending on the change in consumption and dissipation of heat in the cabinets. The device must have intelligent network of sensors to monitor temperature of the incoming and outgoing air and flow of the water/glycol mixture. It is also necessary to ensure support for SNMP protocol and Ethernet communication for monitoring and controlling alarms for all physical parameters of the equipment.Temperature sensors for the incoming and outgoing water should be integrated with a thermometer and in case of a need for servicing, their replacement should be made possible during the unit operation, at the same time enabling uninterrupted operation.Minimal technical characteristics of the interior air conditioning unit:- Maximal dimensions: WxHxD: 300х2000х1200 mm, Colour: RAL 7035- Cooling capacity with two / three / four fans: 16 / 25 / 28 KW- Number of cooling cycles: 1- Number of installed fans: 2- Minimal number of fans: 4- Air flow under full load: 4500-5000 m³ / h (with 4 fans)- Cooling capacity (4 fans): 28 kW- Incoming air temperature: max.24°C- Temperature of the incoming water/glycol medium: 15° C- Operating cycle: 100%- Coolant: water/glycol in max. proportion of 67%-33%- Coolant flow: up to 60 litres per minute.- Operating voltage: 208/230 V, 1 ~, 50/60 Hz, 400 V, 3 ~, N, 50/60 Hz- Maximal consumption: 2,1 kW- The system must optionally support drainage pump for condensate.- Allowed operational pressure: up to 10 bar- Unit weight: maximally up to 230 kg- Option for replacement of a fan during the operation.Procurement and delivery and installation of equipment.Note: Heat exchanger of the air conditioning unit must be completely mechanically compatible to the delivered standard cabinets for the equipment so as to position them safely between the cabinets. | Interior air conditioning unit. The offered air conditioning unit must be specifically designed for use and application in Data Centres. It has to have integrated heat exchanger based on water-glycol/air, and must guarantee cooling capacity of at least 28 kW per unit. It should have the option of mechanical connecting with standard IT cabinets. In accordance with design solution, it is necessary to offer a solution where heat and water exchanger is installed between two standard rack cabinets. The device should suck in hot air released by equipment in rack cabinets through the back perforated door. The air should be sucked in alongside the entire height so as to annulate zones of hot air collection. The air cooled down should be ejected on the side in front of the cabinet, also alongside the entire height of the cabinet. In that way, the equipment installed in the cabinet is evenly cooled down alongside the entire height thereof.Interior air conditioning unit should be in the same line with other cabinets in the row, not to interfere with any route within the room in case of emergency.Air conditioning unit offered for air circulation must have EC fans in the desired number. Individual cooling capacity should be at least 9 kW per cooler. Increasing the number of EC fans would achieve maximal efficiency, thus reducing electricity consumption. A total of 4 EC fans modules should enable minimal cooling capacity of up to 28 kW, so the device must have installed at least 4 EC fans. Fan modules must be replaceable at any moment, even during the operation of the air conditioning unit. The exchanger must have high-level performances, guaranteeing maximal cooling even in conditions of higher temperatures of the input medium water/glycol. The air conditioning units must be equipped with software that enables automatic control of the incoming air temperature in the cabinets. The speed of fans and flow of the water/glycol mixture for cooling can be automatically adjusted depending on the change in consumption and dissipation of heat in the cabinets. The device must have intelligent network of sensors to monitor temperature of the incoming and outgoing air and flow of the water/glycol mixture. It is also necessary to ensure support for SNMP protocol and Ethernet communication for monitoring and controlling alarms for all physical parameters of the equipment.Temperature sensors for the incoming and outgoing water should be integrated with a thermometer and in case of a need for servicing, their replacement should be made possible during the unit operation, at the same time enabling uninterrupted operation.Minimal technical characteristics of the interior air conditioning unit:- Maximal dimensions: WxHxD: 300х2000х1200 mm, Colour: RAL 7035- Cooling capacity with two / three / four fans: 16 / 25 / 28 KW- Number of cooling cycles: 1- Number of installed fans: 2- Minimal number of fans: 4- Air flow under full load: 4500-5000 m³ / h (with 4 fans)- Cooling capacity (4 fans): 28 kW- Incoming air temperature: max.24°C- Temperature of the incoming water/glycol medium: 15° C- Operating cycle: 100%- Coolant: water/glycol in max. proportion of 67%-33%- Coolant flow: up to 60 litres per minute.- Operating voltage: 208/230 V, 1 ~, 50/60 Hz, 400 V, 3 ~, N, 50/60 Hz- Maximal consumption: 2,1 kW- The system must optionally support drainage pump for condensate.- Allowed operational pressure: up to 10 bar- Unit weight: maximally up to 230 kg- Option for replacement of a fan during the operation.Procurement and delivery and installation of equipment.Note: Heat exchanger of the air conditioning unit must be completely mechanically compatible to the delivered standard cabinets for the equipment so as to position them safely between the cabinets. | pcs. | 4 |
| 12.2 | Touchscreen displayDisplay on the air conditioning unit: minimally 4", touch-sensitive, resolution of at least 480 x 270 pixels, operating temperature -20° С ÷ 70° С. Characteristics that must be possessed by the air conditioning unit on the display: -Display the temperature of the cooled down air from the air conditioning unit (towards the IT equipment); -Display the temperature of warm air at the entrance into the air conditioning unit (the output of IT equipment); -Display the current cooling capacity; -Display the temperature of the incoming and outgoing coolant; -Display the speed of coolant flow; -Display the position of the control vent; -Swift overview of all parameters; -Display the alarm. | Touchscreen displayDisplay on the air conditioning unit: minimally 4", touch-sensitive, resolution of at least 480 x 270 pixels, operating temperature -20° С ÷ 70° С. Characteristics that must be possessed by the air conditioning unit on the display: -Display the temperature of the cooled down air from the air conditioning unit (towards the IT equipment); -Display the temperature of warm air at the entrance into the air conditioning unit (the output of IT equipment); -Display the current cooling capacity; -Display the temperature of the incoming and outgoing coolant; -Display the speed of coolant flow; -Display the position of the control vent; -Swift overview of all parameters; -Display the alarm. | pcs. | 4 |
| 12.3 | Flexible connecting hose 11/2", set=2 | Flexible connecting hose 11/2", set=2 | set | 4 |
| 12.4 | Filter holder (water cooling) Installation on the back door of the air conditioning unit. Filter class as per DIN EN 779: G1The set also includes:- Filter holder- Air filter- Installation accessorise | Filter holder (water cooling) Installation on the back door of the air conditioning unit. Filter class as per DIN EN 779: G1The set also includes:- Filter holder- Air filter- Installation accessorise | set | 4 |
| 12.5 | Rubber for cable introduction | Rubber for cable introduction | pcs. | 8 |
|  | Equipment for division of warm and cold zone | Equipment for division of warm and cold zone |  |  |
| 12.6 | Cold zone – door for 42U, 1200mm for standard IT cabinets-SK Aisle containment-Door element WxH: 3600x2000 mm-For enclosure depth: 1200 mm-RAL 7035 | Cold zone – door for 42U, 1200mm for standard IT cabinets-SK Aisle containment-Door element WxH: 3600x2000 mm-For enclosure depth: 1200 mm-RAL 7035 | pcs. | 2 |
| 12.7 | Cold zone – upper cover for the beginning/end, 600mm wide-Aisle containment, Roof element, start/endDimensions: 600 mm in width.For the covering of the beginning or the end of passage of 1200 mm in width. The upper element should be of transparent polycarbonate panel (d = 6 mm), metal holders. Intended for coverage of the space of cold zone along the door, at the beginning and the end, between two cabinets of 800 mm in width.Material:- Metal parts in RAL 7035 colour- Transparent parts made of polycarbonate (d=4mm)- Fire protection according to DIN 4102 B1. | Cold zone – upper cover for the beginning/end, 600mm wide-Aisle containment, Roof element, start/endDimensions: 600 mm in width.For the covering of the beginning or the end of passage of 1200 mm in width. The upper element should be of transparent polycarbonate panel (d = 6 mm), metal holders. Intended for coverage of the space of cold zone along the door, at the beginning and the end, between two cabinets of 800 mm in width.Material:- Metal parts in RAL 7035 colour- Transparent parts made of polycarbonate (d=4mm)- Fire protection according to DIN 4102 B1. | pcs. | 2 |
| 12.8 | Cold zone – upper cover, 600mm in width-SK Aisle containment-Roof element, centre-WxD: 800x1200 mm-RAL 7035 | Cold zone – upper cover, 600mm in width-SK Aisle containment-Roof element, centre-WxD: 800x1200 mm-RAL 7035 | pcs. | 3 |
| 12.9 | Cold zone – upper cover, 800mm in width-SK Aisle containment-Roof element, centre-WxD: 800x1200 mm-RAL 7035 | Cold zone – upper cover, 800mm in width-SK Aisle containment-Roof element, centre-WxD: 800x1200 mm-RAL 7035 | pcs. | 1 |
| 12.10 | Cold zone – upper cover, 300mm in width-SK Aisle containment-Roof element, centre-WxD: 300x1200 mm-RAL 7035 | Cold zone – upper cover, 300mm in width-SK Aisle containment-Roof element, centre-WxD: 300x1200 mm-RAL 7035 | pcs. | 1 |
| 12.11 | Works of mounting and installation of cooling equipment and equipment for dividing the cold zone | Works of mounting and installation of cooling equipment and equipment for dividing the cold zone | lump | 1 |
|  | **Cooling equipment and equipment for dividing the cold zone, Room 105 – 1st floor** |  |  |  |
| 12.12 | Interior air conditioning unit. The offered air conditioning unit must be specifically designed for use and application in Data Centres. It has to have integrated heat exchanger based on water-glycol/air, and must guarantee cooling capacity of at least 28 kW per unit. It should have the option of mechanical connecting with standard IT cabinets. In accordance with design solution, it is necessary to offer a solution where heat and water exchanger is installed between two standard rack cabinets. The device should suck in hot air released by equipment in rack cabinets through the back perforated door. The air should be sucked in alongside the entire height so as to annulate zones of hot air collection. The air cooled down should be ejected on the side in front of the cabinet, also alongside the entire height of the cabinet. In that way, the equipment installed in the cabinet is evenly cooled down alongside the entire height thereof.Interior air conditioning unit should be in the same line with other cabinets in the row, not to interfere with any route within the room in case of emergency.Air conditioning unit offered for air circulation must have EC fans in the desired number. Individual cooling capacity should be at least 9 kW per cooler. Increasing the number of EC fans would achieve maximal efficiency, thus reducing electricity consumption. A total of 4 EC fans modules should enable minimal cooling capacity of up to 28 kW, so the device must have installed at least 4 EC fans. Fan modules must be replaceable at any moment, even during the operation of the air conditioning unit. The exchanger must have high-level performances, guaranteeing maximal cooling even in conditions of higher temperatures of the input medium water/glycol. The air conditioning units must be equipped with software that enables automatic control of the incoming air temperature in the cabinets. The speed of fans and flow of the water/glycol mixture for cooling can be automatically adjusted depending on the change in consumption and dissipation of heat in the cabinets. The device must have intelligent network of sensors to monitor temperature of the incoming and outgoing air and flow of the water/glycol mixture. It is also necessary to ensure support for SNMP protocol and Ethernet communication for monitoring and controlling alarms for all physical parameters of the equipment.Temperature sensors for the incoming and outgoing water should be integrated with a thermometer and in case of a need for servicing, their replacement should be made possible during the unit operation, at the same time enabling uninterrupted operation.Minimal technical characteristics of the interior air conditioning unit:- Maximal dimensions: WxHxD: 300х2000х1200 mm, Colour: RAL 7035- Cooling capacity with two / three / four fans: 16 / 25 / 28 KW- Number of cooling cycles: 1- Number of installed fans: 2- Minimal number of fans: 4- Air flow under full load: 4500-5000 m³ / h (with 4 fans)- Cooling capacity (4 fans): 28 kW- Incoming air temperature: max.24°C- Temperature of the incoming water/glycol medium: 15° C- Operating cycle: 100%- Coolant: water/glycol in max. proportion of 67%-33%- Coolant flow: up to 60 litres per minute- Operating voltage: 208/230 V, 1 ~, 50/60 Hz, 400 V, 3 ~, N, 50/60 Hz- Maximal consumption: 2,1 kW- The system must optionally support drainage pump for condensate.- Allowed operational pressure: up to 10 bar- Unit weight: maximally up to 230 kg- Option for replacement of a fan during the operation.Procurement and delivery and installation of equipment.Note: Heat exchangers of the air conditioning unit must be completely mechanically compatible to the delivered standard cabinets for the equipment so as to position them safely between the cabinets. | Interior air conditioning unit. The offered air conditioning unit must be specifically designed for use and application in Data Centres. It has to have integrated heat exchanger based on water-glycol/air, and must guarantee cooling capacity of at least 28 kW per unit. It should have the option of mechanical connecting with standard IT cabinets. In accordance with design solution, it is necessary to offer a solution where heat and water exchanger is installed between two standard rack cabinets. The device should suck in hot air released by equipment in rack cabinets through the back perforated door. The air should be sucked in alongside the entire height so as to annulate zones of hot air collection. The air cooled down should be ejected on the side in front of the cabinet, also alongside the entire height of the cabinet. In that way, the equipment installed in the cabinet is evenly cooled down alongside the entire height thereof.Interior air conditioning unit should be in the same line with other cabinets in the row, not to interfere with any route within the room in case of emergency.Air conditioning unit offered for air circulation must have EC fans in the desired number. Individual cooling capacity should be at least 9 kW per cooler. Increasing the number of EC fans would achieve maximal efficiency, thus reducing electricity consumption. A total of 4 EC fans modules should enable minimal cooling capacity of up to 28 kW, so the device must have installed at least 4 EC fans. Fan modules must be replaceable at any moment, even during the operation of the air conditioning unit. The exchanger must have high-level performances, guaranteeing maximal cooling even in conditions of higher temperatures of the input medium water/glycol. The air conditioning units must be equipped with software that enables automatic control of the incoming air temperature in the cabinets. The speed of fans and flow of the water/glycol mixture for cooling can be automatically adjusted depending on the change in consumption and dissipation of heat in the cabinets. The device must have intelligent network of sensors to monitor temperature of the incoming and outgoing air and flow of the water/glycol mixture. It is also necessary to ensure support for SNMP protocol and Ethernet communication for monitoring and controlling alarms for all physical parameters of the equipment.Temperature sensors for the incoming and outgoing water should be integrated with a thermometer and in case of a need for servicing, their replacement should be made possible during the unit operation, at the same time enabling uninterrupted operation.Minimal technical characteristics of the interior air conditioning unit:- Maximal dimensions: WxHxD: 300х2000х1200 mm, Colour: RAL 7035- Cooling capacity with two / three / four fans: 16 / 25 / 28 KW- Number of cooling cycles: 1- Number of installed fans: 2- Minimal number of fans: 4- Air flow under full load: 4500-5000 m³ / h (with 4 fans)- Cooling capacity (4 fans): 28 kW- Incoming air temperature: max.24°C- Temperature of the incoming water/glycol medium: 15° C- Operating cycle: 100%- Coolant: water/glycol in max. proportion of 67%-33%- Coolant flow: up to 60 litres per minute- Operating voltage: 208/230 V, 1 ~, 50/60 Hz, 400 V, 3 ~, N, 50/60 Hz- Maximal consumption: 2,1 kW- The system must optionally support drainage pump for condensate.- Allowed operational pressure: up to 10 bar- Unit weight: maximally up to 230 kg- Option for replacement of a fan during the operation.Procurement and delivery and installation of equipment.Note: Heat exchangers of the air conditioning unit must be completely mechanically compatible to the delivered standard cabinets for the equipment so as to position them safely between the cabinets. | pcs. | 6 |
| 12.13 | Touchscreen displayDisplay on the air conditioning unit: minimally 4", touch-sensitive, resolution of at least 480 x 270 pixels, operating temperature -20° С ÷ 70° С. Characteristics that must be possessed by the air conditioning unit on the display: -Display the temperature of the cooled down air from the air conditioning unit (towards the IT equipment); -Display the temperature of warm air at the entrance into the air conditioning unit (the output of IT equipment); -Display the current cooling capacity; -Display the temperature of the incoming and outgoing coolant; -Display the speed of coolant flow; -Display the position of the control vent; -Swift overview of all parameters; -Display the alarm. | Touchscreen displayDisplay on the air conditioning unit: minimally 4", touch-sensitive, resolution of at least 480 x 270 pixels, operating temperature -20° С ÷ 70° С. Characteristics that must be possessed by the air conditioning unit on the display: -Display the temperature of the cooled down air from the air conditioning unit (towards the IT equipment); -Display the temperature of warm air at the entrance into the air conditioning unit (the output of IT equipment); -Display the current cooling capacity; -Display the temperature of the incoming and outgoing coolant; -Display the speed of coolant flow; -Display the position of the control vent; -Swift overview of all parameters; -Display the alarm. | pcs. | 6 |
| 12.14 | Flexible connecting hose 11/2", set=2  | Flexible connecting hose 11/2", set=2  | set | 6 |
| 12.15 | Filter holder (water cooling) Installation on the back door of the air conditioning unit. Filter class as per DIN EN 779: G1The set also includes:- Filter holder- Air filter- Installation accessorise | Filter holder (water cooling) Installation on the back door of the air conditioning unit. Filter class as per DIN EN 779: G1The set also includes:- Filter holder- Air filter- Installation accessorise | set | 6 |
| 12.16 | Rubber for cable introduction | Rubber for cable introduction | pcs. | 12 |
|  | Equipment for division of warm and cold zone | Equipment for division of warm and cold zone |  |  |
| 12.17 | Cold zone – door for 42U, 1200mm for standard IT cabinets-SK Aisle containment-Door element WxH: 3600x2000 mm-For enclosure depth: 1200 mm-RAL 7035 | Cold zone – door for 42U, 1200mm for standard IT cabinets-SK Aisle containment-Door element WxH: 3600x2000 mm-For enclosure depth: 1200 mm-RAL 7035 | pcs. | 2 |
| 12.18 | Cold zone – upper cover for the beginning/end, 600mm wide-Aisle containment, Roof element, start/endDimensions: 600 mm in width.For the covering of the beginning or the end of passage of 1200 mm in width. The upper element should be of transparent polycarbonate panel (d = 6 mm), metal holders. Intended for coverage of the space of cold zone along the door, at the beginning and the end, between two cabinets of 800 mm in width.Material:- Metal parts in RAL 7035 colour- Transparent parts made of polycarbonate (d=4mm)- Fire protection according to DIN 4102 B1 | Cold zone – upper cover for the beginning/end, 600mm wide-Aisle containment, Roof element, start/endDimensions: 600 mm in width.For the covering of the beginning or the end of passage of 1200 mm in width. The upper element should be of transparent polycarbonate panel (d = 6 mm), metal holders. Intended for coverage of the space of cold zone along the door, at the beginning and the end, between two cabinets of 800 mm in width.Material:- Metal parts in RAL 7035 colour- Transparent parts made of polycarbonate (d=4mm)- Fire protection according to DIN 4102 B1 | pcs. | 2 |
| 12.19 | Cold zone – upper cover, 600mm in width-SK Aisle containment-Roof element, centre-WxD: 800x1200 mm-RAL 7035 | Cold zone – upper cover, 600mm in width-SK Aisle containment-Roof element, centre-WxD: 800x1200 mm-RAL 7035 | pcs. | 9 |
| 12.20 | Cold zone – upper cover, 800mm in width-SK Aisle containment-Roof element, centre-WxD: 800x1200 mm-RAL 7035 | Cold zone – upper cover, 800mm in width-SK Aisle containment-Roof element, centre-WxD: 800x1200 mm-RAL 7035 | pcs. | 2 |
| 12.21 | Cold zone – upper cover, 300mm in width-SK Aisle containment-Roof element, centre-WxD: 300x1200 mm-RAL 7035 | Cold zone – upper cover, 300mm in width-SK Aisle containment-Roof element, centre-WxD: 300x1200 mm-RAL 7035 | pcs. | 3 |
| 12.22 | Works of mounting and installation of cooling equipment and equipment for dividing the cold zone |  | lump | 1 |
|  | **ROOM 213 – 2nd floor and ROOM 105 – 1st floor** |  |  |  |
| 12.13 | External air conditioning unit – Chiller, which serves for preparation of cold water for cooling of the equipment in Data Centres with integrated system for Freecooling (automatic switch to free cooling at the outer temperature of 2K lower that the incoming water temperature in the device), with three-position directional valve integrated in the cooler, and with ambience sensor. The chiller needed for cooling of RTCG Data Centres must be delivered with sealed compressor and optionally with a heater for the protection against freezing for ambience temperatures lower than -20°C. It must be equipped with a condenser with air cooling of high performances. It must have axial fans with speed regulation – inlet air from the lateral sides, and outlet towards the upper side.It must have two cycles of cooling with output control; transparent glass for inspection, safety valve; electromagnetic valve and expansion valve, thermostatically controlled, service valve and pressure blockade for ventilation on the compressor side.Pressostats; regulator in a compact housing made of stainless steel, plasticized, with protection degree of IP54; The offered chiller must have the option for remote on/off control, as well as interface with possibility of connecting and integrating the existing system of control or by the means of SNMP protocol.The tank has to be made of steel with closed pressurised water cycles. It must have at least one inverter pump of high efficiency.It should also possess: block valve before and after the pump, irreversible valve at the pump outlet, automatic two-way valve, expansion vessel, safety valve, release fan, dryer and interior water fitting for access to the system; manometer of 0-10 bar; pressure sensor on the water fitting.It must have at least five relay outputs for the following information: general alarm, pump alarm, fluid alarm in the cooling cycle, high temperature alarm and alarm for low pressure of coolant (water/glycol) in the pipeline.It must possess preparation for a separate joint of important components of the cooling unit to UPS system for uninterruptible supply, such as cooling unit electronics, inverter pumps and fan units. The UPS device does not have to be delivered along with the offered cooling unit. It must have a possibility for joining up to 8 same cooling units in redundancy operation by the means of a triplex cable. This function must be an integrated part of already installed electronics within the device, without the need for additional external control systems.The equipment must have rubber anti-vibrating stands.The fluid for the coolant must be at least water classified as drinking water with additive glycol-based antifrogen of 20% up to 30%.Minimal technical characteristics of the offered equipment:- Cooling capacity by the means of compressors at Tw = 15°C, Ta = 35°C: Qc = 98 kW- Cooling capacity by the means of compressors at Twin = 25°C, Ta = 35°C: Qc = 111 kW - Cooling capacity of the Freecooling system at Tw = 15°C, Ta = 2°C: Qc = 112 kW- Supply (+/- 6%): 400V / 50Hz / 3~ - Control voltage (+/-10%): 24V AC/50Hz- Consumption of electricity in compressor operation at Tw = 15°C, Tu = 35°C: 29 kW- Consumption of electricity in Freecooling mode: maximally 4,4 kW- Nominal power in the compressor operation: 52,2 A- Start electricity of the cooling device: 208,1 A- Nominal capacity in Freecooling mode (maximal consumption): 13,3 A- Number of compressors: 2- Number of axial fans: 8- Pump capacity: 240 l / min- Pump pressure, exter. 2,5 bar- Consumption of electricity on the pump: 2 kW- The system must support addition of optional tank of coolant, capacity of which is at least 200 litres.- Cooling range of media temperature: +5°C – +20°C - Operative conditions, environmental temperature: -20°C – +43°C- Water fitting: DN65 Victaulic- Air flow in fans: 25000m³/h- Noise level at distance of 10m: 45dB(A)- Protection level: minimally IP54 for all electrical parts.Procurement, delivery and installation of the equipment. | External air conditioning unit – Chiller, which serves for preparation of cold water for cooling of the equipment in Data Centres with integrated system for Freecooling (automatic switch to free cooling at the outer temperature of 2K lower that the incoming water temperature in the device), with three-position directional valve integrated in the cooler, and with ambience sensor. The chiller needed for cooling of RTCG Data Centres must be delivered with sealed compressor and optionally with a heater for the protection against freezing for ambience temperatures lower than -20°C. It must be equipped with a condenser with air cooling of high performances. It must have axial fans with speed regulation – inlet air from the lateral sides, and outlet towards the upper side.It must have two cycles of cooling with output control; transparent glass for inspection, safety valve; electromagnetic valve and expansion valve, thermostatically controlled, service valve and pressure blockade for ventilation on the compressor side.Pressostats; regulator in a compact housing made of stainless steel, plasticized, with protection degree of IP54; The offered chiller must have the option for remote on/off control, as well as interface with possibility of connecting and integrating the existing system of control or by the means of SNMP protocol.The tank has to be made of steel with closed pressurised water cycles. It must have at least one inverter pump of high efficiency.It should also possess: block valve before and after the pump, irreversible valve at the pump outlet, automatic two-way valve, expansion vessel, safety valve, release fan, dryer and interior water fitting for access to the system; manometer of 0-10 bar; pressure sensor on the water fitting.It must have at least five relay outputs for the following information: general alarm, pump alarm, fluid alarm in the cooling cycle, high temperature alarm and alarm for low pressure of coolant (water/glycol) in the pipeline.It must possess preparation for a separate joint of important components of the cooling unit to UPS system for uninterruptible supply, such as cooling unit electronics, inverter pumps and fan units. The UPS device does not have to be delivered along with the offered cooling unit. It must have a possibility for joining up to 8 same cooling units in redundancy operation by the means of a triplex cable. This function must be an integrated part of already installed electronics within the device, without the need for additional external control systems.The equipment must have rubber anti-vibrating stands.The fluid for the coolant must be at least water classified as drinking water with additive glycol-based antifrogen of 20% up to 30%.Minimal technical characteristics of the offered equipment:- Cooling capacity by the means of compressors at Tw = 15°C, Ta = 35°C: Qc = 98 kW- Cooling capacity by the means of compressors at Twin = 25°C, Ta = 35°C: Qc = 111 kW - Cooling capacity of the Freecooling system at Tw = 15°C, Ta = 2°C: Qc = 112 kW- Supply (+/- 6%): 400V / 50Hz / 3~ - Control voltage (+/-10%): 24V AC/50Hz- Consumption of electricity in compressor operation at Tw = 15°C, Tu = 35°C: 29 kW- Consumption of electricity in Freecooling mode: maximally 4,4 kW- Nominal power in the compressor operation: 52,2 A- Start electricity of the cooling device: 208,1 A- Nominal capacity in Freecooling mode (maximal consumption): 13,3 A- Number of compressors: 2- Number of axial fans: 8- Pump capacity: 240 l / min- Pump pressure, exter. 2,5 bar- Consumption of electricity on the pump: 2 kW- The system must support addition of optional tank of coolant, capacity of which is at least 200 litres.- Cooling range of media temperature: +5°C – +20°C - Operative conditions, environmental temperature: -20°C – +43°C- Water fitting: DN65 Victaulic- Air flow in fans: 25000m³/h- Noise level at distance of 10m: 45dB(A)- Protection level: minimally IP54 for all electrical parts.Procurement, delivery and installation of the equipment. | pcs. | 2 |
| 12.24 | Pipeline network and armature. Delivery and installation of the equipment and material: \*Pipeline of steel seamless pipes, according to EN 10220, of the following dimensions: - Ø88,9x3,2 - DN80.........m 90- Ø76,1x2,9 - DN65.........m 113\*Pipeline of welded steel pipes, according to EN 10225, of the following dimensions: - Ø60,3x3.65 - DN50.........m 25- Ø42,4x3.25 - DN32.........m 35Joining, suspending and sealing material, elbows, forks, and so on, necessary for mounting the installations in previous positions, with cleaning, red lead coating and paining of pipes and armature with finishing paint resistant to high temperature.  | Pipeline network and armature. Delivery and installation of the equipment and material: \*Pipeline of steel seamless pipes, according to EN 10220, of the following dimensions: - Ø88,9x3,2 - DN80.........m 90- Ø76,1x2,9 - DN65.........m 113\*Pipeline of welded steel pipes, according to EN 10225, of the following dimensions: - Ø60,3x3.65 - DN50.........m 25- Ø42,4x3.25 - DN32.........m 35Joining, suspending and sealing material, elbows, forks, and so on, necessary for mounting the installations in previous positions, with cleaning, red lead coating and paining of pipes and armature with finishing paint resistant to high temperature.  | set | 1 |
| 12.25 | Pipe insulation with insulation material with vapour barrier, thickness up to DN40-13 mm of DN50-38 mm, together with glue for mounting and adhesive tapes for joints. Fire protection class B1. (DIN4102, JUS.U.J1.055). Calculation is made per length meter of insulation. -Steel pipe Ø88,9mm – external diameter ......m 90-Steel pipe Ø76,1mm – external diameter......m 113-Steel pipe Ø60,3mm – external diameter ......m 25-Steel pipe Ø42,4mm – external diameter ......m 35 | Pipe insulation with insulation material with vapour barrier, thickness up to DN40-13 mm of DN50-38 mm, together with glue for mounting and adhesive tapes for joints. Fire protection class B1. (DIN4102, JUS.U.J1.055). Calculation is made per length meter of insulation. -Steel pipe Ø88,9mm – external diameter ......m 90-Steel pipe Ø76,1mm – external diameter......m 113-Steel pipe Ø60,3mm – external diameter ......m 25-Steel pipe Ø42,4mm – external diameter ......m 35 | set | 1 |
| 12.26 | Installation of pipe network from removal of condensate, made of polypropylene in shafts for fusion welding. This item includes all needed fittings, seals and suspenders to be placed at 1.5m distance. -Nominal diameter DN32-Interior pipe diameter Ø32,6 mm-Pipe thickness 3.7 mm | Installation of pipe network from removal of condensate, made of polypropylene in shafts for fusion welding. This item includes all needed fittings, seals and suspenders to be placed at 1.5m distance. -Nominal diameter DN32-Interior pipe diameter Ø32,6 mm-Pipe thickness 3.7 mm | m | 60 |
| 12.27 | Impurity catcher, together with counter-flanges (to DN 50 with fittings to the thread), joining and sealing material, nominal pressure PN 16, of the following dimensions: DN65 | Impurity catcher, together with counter-flanges (to DN 50 with fittings to the thread), joining and sealing material, nominal pressure PN 16, of the following dimensions: DN65 | pcs. | 2 |
| 12.28 | Non-return valve, together with counter-flanges (to DN 50 with fittings to the thread), joining and sealing material, nominal pressure PN 16, of the following dimensions:  | Non-return valve, together with counter-flanges (to DN 50 with fittings to the thread), joining and sealing material, nominal pressure PN 16, of the following dimensions:  | pcs. | 2 |
| 12.29 | Ball threaded taps, together with joining and sealing material, nominal pressure NP16, of the following dimensions - DN65 .... pcs. 4- DN32 .... pcs. 10 | Ball threaded taps, together with joining and sealing material, nominal pressure NP16, of the following dimensions - DN65 .... pcs. 4- DN32 .... pcs. 10 | set | 1 |
| 12.30 | Two-way regulation valve for measuring differential pressure, with flat seat, flange joining, counter-flanges, bolts, nuts, sealants PN16. Fittings dimensions: DN65; kvs=63 m3/h | Two-way regulation valve for measuring differential pressure, with flat seat, flange joining, counter-flanges, bolts, nuts, sealants PN16. Fittings dimensions: DN65; kvs=63 m3/h | pcs. | 2 |
| 12.31 | Automatic ballast and regulation valves, independent of pressure changes in the system. Valve characteristic is linear, authority 1 in all settings (unchanged valve characteristic), regulation capacity 1:300 (supplier has to provide laboratory tests). The valve has a shut-off function, as well as two independent mechanisms for flow limitations and continual flow regulation of 100% to 0%. Up to DN50, valves are with external thread for flat Holender joint, and DN65 and bigger are with flanges. - DN32, Qmax=640-3200 l/h | Automatic ballast and regulation valves, independent of pressure changes in the system. Valve characteristic is linear, authority 1 in all settings (unchanged valve characteristic), regulation capacity 1:300 (supplier has to provide laboratory tests). The valve has a shut-off function, as well as two independent mechanisms for flow limitations and continual flow regulation of 100% to 0%. Up to DN50, valves are with external thread for flat Holender joint, and DN65 and bigger are with flanges. - DN32, Qmax=640-3200 l/h | pcs. | 10 |
| 12.32 | Electrothermal drive, with modulating regulation signal, of the following characteristics:Supply 230 V NC (closed without voltage)Closing force 100 NMinimal spacing 4.0mmSpeed around 30 s/mm | Electrothermal drive, with modulating regulation signal, of the following characteristics:Supply 230 V NC (closed without voltage)Closing force 100 NMinimal spacing 4.0mmSpeed around 30 s/mm | pcs. | 10 |
| 12.33 | Pressure valve, dimensions: D20 |  | pcs. | 2 |
| 12.34 | Procurement, delivery and installation of vent vessels together with water overflow and tap DN 15, made of black steel pipe DN150, 350 mm long. | Procurement, delivery and installation of vent vessels together with water overflow and tap DN 15, made of black steel pipe DN150, 350 mm long. | pcs. | 2 |
| 12.35 | Thermometers for measurement range from 0-40°C, 0-6bar, | Thermometers for measurement range from 0-40°C, 0-6bar, | pcs. | 4 |
| 12.36 | Manometers for measurement of pressure, together with manometer two-way tap and two ball valves DN15. Measurement range 0 – 10 bara. | Manometers for measurement of pressure, together with manometer two-way tap and two ball valves DN15. Measurement range 0 – 10 bara. | pcs. | 6 |
| 12.37 | Making holes in walls and floors for installations. Holes for the start and return line, as well as finishing of such holes. | Making holes in walls and floors for installations. Holes for the start and return line, as well as finishing of such holes. | lump | 1 |
| 12.38 | Testing of equipment and devices as devices with increased hazards in terms of occupational health and safety, plus issuance of a report made by authorised organisation. | Testing of equipment and devices as devices with increased hazards in terms of occupational health and safety, plus issuance of a report made by authorised organisation. | lump | 1 |
| 12.39 | Testing the integrity of mechanical installations, plus issuance of attest on integrity.  | Testing the integrity of mechanical installations, plus issuance of attest on integrity.  | lump | 1 |
| 12.40 | Drafting the as-built design for the executed mechanical installations and equipment | Drafting the as-built design for the executed mechanical installations and equipment | lump | 1 |
|  | **Automatic stable fire extinguishing installations** |
| **13** | **SPECIFICATION OF MECHANICAL EQUIPMENT** |  |  |
| 13.1 | Steel cylinder of 81l, with a 2" valve, safety valve, manometer, safety disc and protection cap. The cylinder is filled with nitrogen under pressure of 25bar. Cylinder dimensions: d=324mm,H=1207mm. | Steel cylinder of 81l, with a 2" valve, safety valve, manometer, safety disc and protection cap. The cylinder is filled with nitrogen under pressure of 25bar. Cylinder dimensions: d=324mm,H=1207mm. | pcs. | 1 |
| 13.2 | Steel cylinder of 142l, with a 2", valve, safety valve, manometer, safety disc and protection cap. The cylinder is filled with nitrogen under pressure of 25bar. Cylinder dimensions: d=406mm, H=1349mm. | Steel cylinder of 142l, with a 2", valve, safety valve, manometer, safety disc and protection cap. The cylinder is filled with nitrogen under pressure of 25bar. Cylinder dimensions: d=406mm, H=1349mm. | pcs. | 1 |
| 13.3 | Adapter of 2", with NPT thread for connecting the cylinder to pipeline. The adapter is made of brass, with interior thread. | Adapter of 2", with NPT thread for connecting the cylinder to pipeline. The adapter is made of brass, with interior thread. | pcs. | 2 |
| 13.4 | Bracket for wall mounting of 81 l cylinder. It is composed of steel rail and clamp placed around the cylinder. | Bracket for wall mounting of 81 l cylinder. It is composed of steel rail and clamp placed around the cylinder. | pcs. | 1 |
| 13.5 | Bracket for wall mounting of 142 l cylinder. It is composed of steel rail and clamp placed around the cylinder. | Bracket for wall mounting of 142 l cylinder. It is composed of steel rail and clamp placed around the cylinder. | pcs. | 1 |
| 13.6 | Electrical actuator for activating the cylinder, installed on the cylinder valve. Characteristics of the actuator are: 24V, 0.2A, in Ex execution. The actuator has the reset option upon the activation.  | Electrical actuator for activating the cylinder, installed on the cylinder valve. Characteristics of the actuator are: 24V, 0.2A, in Ex execution. The actuator has the reset option upon the activation.  | pcs. | 2 |
| 13.7 | Manual actuator for activation of the system, installed on the cylinder valve. The actuator is secured with a breaker and has the reset option upon the activation. | Manual actuator for activation of the system, installed on the cylinder valve. The actuator is secured with a breaker and has the reset option upon the activation. | pcs. | 2 |
| 13.8 | Master cylinder adapter kit for joining the cylinders into a set. Similar to type  | Master cylinder adapter kit for joining the cylinders into a set. Similar to type  | pcs. | 2 |
| 13.9 | Pneumatic flexible activation hose for pneumatic activation of cylinder set, 762mm long and of 1/4" diameter. | Pneumatic flexible activation hose for pneumatic activation of cylinder set, 762mm long and of 1/4" diameter. | pcs. | 2 |
| 13.10 | Pressostat for cylinder pressure control. In case of pressure drop below 21bar, the pressostat should send a signal to the FP central unit. | Pressostat for cylinder pressure control. In case of pressure drop below 21bar, the pressostat should send a signal to the FP central unit. | pcs. | 2 |
| 13.11 | Pressure contact for confirmation of activation to be installed on the pipeline or accumulator, including a fitting of 1/2"" for the connection. | Pressure contact for confirmation of activation to be installed on the pipeline or accumulator, including a fitting of 1/2"" for the connection. | pcs. | 2 |
| 13.12 | Adapter for connecting the confirmation of ejection via hose 1/2" NPT x 5/16" | Adapter for connecting the confirmation of ejection via hose 1/2" NPT x 5/16" | pcs. | 2 |
| 13.13 | Fire extinguishing fluid Novec 1230, used in concentrations according to 15004-2 standard. The gas should be filled in a pressurised cylinder at 25bar.  | Fire extinguishing fluid Novec 1230, used in concentrations according to 15004-2 standard. The gas should be filled in a pressurised cylinder at 25bar.  | kg | 217 |
| 13.14 | Nozzle DN15 for fire extinguishing, made of brass, with openings according to hydraulic calculation 360º around the nozzle axis. | Nozzle DN15 for fire extinguishing, made of brass, with openings according to hydraulic calculation 360º around the nozzle axis. | pcs. | 2 |
| 13.15 | Nozzle DN20 for fire extinguishing, made of brass, with openings according to hydraulic calculation 360º around the nozzle axis. | Nozzle DN20 for fire extinguishing, made of brass, with openings according to hydraulic calculation 360º around the nozzle axis. | pcs. | 1 |
| 13.16 | Nozzle DN32 for fire extinguishing, made of brass, with openings according to hydraulic calculation 360º around the nozzle axis. | Nozzle DN32 for fire extinguishing, made of brass, with openings according to hydraulic calculation 360º around the nozzle axis. | pcs. | 2 |
| 13.17 | Nozzle DN40 for fire extinguishing, made of brass, with openings according to hydraulic calculation 360º around the nozzle axis. | Nozzle DN40 for fire extinguishing, made of brass, with openings according to hydraulic calculation 360º around the nozzle axis. | pcs. | 1 |
| 13.18 | Pipe distribution system, which includes: \* Seamless steel pipes according to API5l GradB ASTM106 - DN50 ....... m 15- DN40 ....... m 21- DN32 ....... m 6- DN25 ....... m 6- DN15 ....... m 9\* Steel fitting - NP25 DN15-DN50 .... set 1\* Base and finishing paint.....kg 20\* Installation of equipment and pipeline... lump 1\* Supports ... lump 1\* Other small material... lump 1 | Pipe distribution system, which includes: \* Seamless steel pipes according to API5l GradB ASTM106 - DN50 ....... m 15- DN40 ....... m 21- DN32 ....... m 6- DN25 ....... m 6- DN15 ....... m 9\* Steel fitting - NP25 DN15-DN50 .... set 1\* Base and finishing paint.....kg 20\* Installation of equipment and pipeline... lump 1\* Supports ... lump 1\* Other small material... lump 1 | set | 1 |
| 13.19 | Breakdown installation.Procurement and installation of a channel fan for evacuating the air out of the room, rotation speed 1298o/min (operational point 1491m³/h, 110Pa) Flow: 1420m³/h; 100PaElectricity supply: 230V/50Hz; 7.15A; 532WDimensions DxWxH: 540x340x5620mm; maximal weight of up to 20 kg. | Breakdown installation.Procurement and installation of a channel fan for evacuating the air out of the room, rotation speed 1298o/min (operational point 1491m³/h, 110Pa) Flow: 1420m³/h; 100PaElectricity supply: 230V/50Hz; 7.15A; 532WDimensions DxWxH: 540x340x5620mm; maximal weight of up to 20 kg. | pcs. | 2 |
| 13.20 | Delivery and installation of rectangular channels of galvanised sheet, 1mm thick | Delivery and installation of rectangular channels of galvanised sheet, 1mm thick | kg | 98 |
| 13.21 | Delivery and installation of fire protection flap, dimensions 500x250 mm. | Delivery and installation of fire protection flap, dimensions 500x250 mm. | pcs. | 4 |
| 13.22 | Aluminium grids with horizontal and vertical plates for recirculation air, of the following dimensions:500 x 250 mm. | Aluminium grids with horizontal and vertical plates for recirculation air, of the following dimensions:500 x 250 mm. | pcs. | 1 |
| 13.23 | Aluminium façade fixed grids for sucking in of fresh air or exhausting the polluted air, with a protective steel net (opening size 10x10mm) dimensions: 500x250 mm. | Aluminium façade fixed grids for sucking in of fresh air or exhausting the polluted air, with a protective steel net (opening size 10x10mm) dimensions: 500x250 mm. | pcs. | 3 |
| 13.24 | Preparatory-finishing work (making holes, closing holes, setting and testing the ventilation system). | Preparatory-finishing work (making holes, closing holes, setting and testing the ventilation system). | lump | 1 |
| 13.25 | Testing the seals of the protected area “FAN DOOR TEST” in compliance with EN 15004-1 standard. | Testing the seals of the protected area “FAN DOOR TEST” in compliance with EN 15004-1 standard. | lump | 2 |
| 13.26 | Start-up the fire extinguishing system, drafting the relevant documents, training the users.  | Start-up the fire extinguishing system, drafting the relevant documents, training the users.  | lump | 1 |
| **14** | **SPECIFICATION OF ELECTRIC EQUIPMENT** |  |  |
|  | **TV DATA CENTRE – 1ST FLOOR** |  |  |
| 14.1 | Central unit – fire protection collective, for the automatic extinguishing control, front control workstation of the central device in mother tongue, 1 extinguishing sector, 3 detection zones, port for connecting the elements for pressure control, port for connecting the elements for indication of fluid flow, port for connecting the manual activation of extinguishing, extinguishing blockade and retention, output for activation of sound and light signalisation in Phase 1 and Phase 2, one programmable controlled output for connecting the electromagnetic valve or pyrotechnical actuator, relay output for the alarm and error status, LCD for indication of the system status, possibility to insert batteries of 12V/7Ah, certificate of compliance with EN54:2, EN54:4, EN54:13 and EN-12094-1 standards, certificate on compliance with EMC and LVD Directive, issued by nominated bodies. Procurement, transport, delivery and installation. | Central unit – fire protection collective, for the automatic extinguishing control, front control workstation of the central device in mother tongue, 1 extinguishing sector, 3 detection zones, port for connecting the elements for pressure control, port for connecting the elements for indication of fluid flow, port for connecting the manual activation of extinguishing, extinguishing blockade and retention, output for activation of sound and light signalisation in Phase 1 and Phase 2, one programmable controlled output for connecting the electromagnetic valve or pyrotechnical actuator, relay output for the alarm and error status, LCD for indication of the system status, possibility to insert batteries of 12V/7Ah, certificate of compliance with EN54:2, EN54:4, EN54:13 and EN-12094-1 standards, certificate on compliance with EMC and LVD Directive, issued by nominated bodies. Procurement, transport, delivery and installation. | pcs. | 1 |
| 14.2 | Relay module with 8 outputs of C type, intended for installation into the central device for automatic fire extinguishing control.  | Relay module with 8 outputs of C type, intended for installation into the central device for automatic fire extinguishing control.  | pcs. | 1 |
| 14.3 | Accumulator battery 12V/7Ah, AKU7AH, certificate on compliance with IEC 60896 standard.Procurement, transport, delivery and installation. | Accumulator battery 12V/7Ah, AKU7AH, certificate on compliance with IEC 60896 standard.Procurement, transport, delivery and installation. | pcs. | 2 |
| 14.4 | Parallel control workstation for automatic fire extinguishing system control, integrated LCD, LED indication for monitoring the system status, button for manual activation of extinguishing.  | Parallel control workstation for automatic fire extinguishing system control, integrated LCD, LED indication for monitoring the system status, button for manual activation of extinguishing.  | pcs. | 1 |
| 14.5 | Fire detector, conventional, optical, lock option, detonator at the base so as to prevent unauthorised removal of the system elements, indication of elements status via LED. Procurement, transport, delivery and installation. | Fire detector, conventional, optical, lock option, detonator at the base so as to prevent unauthorised removal of the system elements, indication of elements status via LED. Procurement, transport, delivery and installation. | pcs. | 8 |
| 14.6 | Base for conventional fire detector. Procurement, transport, delivery and installation.  | Base for conventional fire detector. Procurement, transport, delivery and installation.  | pcs. | 8 |
| 14.7 | Manual fire alarm, conventional, yellow, for internal installation, certificate of compliance with EN54:11 standard. | Manual fire alarm, conventional, yellow, for internal installation, certificate of compliance with EN54:11 standard. | pcs. | 1 |
| 14.8 | Manual fire alarm, conventional, blue, for internal installation, certificate of compliance with EN54:11 standard. | Manual fire alarm, conventional, blue, for internal installation, certificate of compliance with EN54:11 standard. | pcs. | 1 |
| 14.9 | Siren, conventional, red, two command signals, 32 tones, IP65, 94-106dB/1m, certificate of compliance with EN54:3 standard, and certificate of compliance with the Rulebook on electromagnetic compatibility. | Siren, conventional, red, two command signals, 32 tones, IP65, 94-106dB/1m, certificate of compliance with EN54:3 standard, and certificate of compliance with the Rulebook on electromagnetic compatibility. | pcs. | 2 |
| 14.10 | Flashlight, conventional, red, IP65, certificate of compliance with EN54:23 standard, and certificate of compliance with the Rulebook on electromagnetic compatibility. Procurement, transport, delivery and installation.  | Flashlight, conventional, red, IP65, certificate of compliance with EN54:23 standard, and certificate of compliance with the Rulebook on electromagnetic compatibility. Procurement, transport, delivery and installation.  | pcs. | 2 |
| 14.11 | Low-profile lighting panel, strobe lights, supply 24V DC. Procurement, transport, delivery and installation. | Low-profile lighting panel, strobe lights, supply 24V DC. Procurement, transport, delivery and installation. | pcs. | 1 |
| 14.12 | Aspirating smoke detector, 1 suck-in pipe Ø25mm, 1 laser smoke detector, foreseen for installation in spaced up to 500m², 3 programmable relays, panel for indication of the system status, maximal pipeline length 50m, possibility to operate in detection classes A, B and C, in compliance with EN54-20 (setting sensitivity within the range of 0.025-20.00% obs/m), possibility of networking in VesdaNET (option), external supply needed 24VDC. Procurement, transport, delivery and installation. | Aspirating smoke detector, 1 suck-in pipe Ø25mm, 1 laser smoke detector, foreseen for installation in spaced up to 500m², 3 programmable relays, panel for indication of the system status, maximal pipeline length 50m, possibility to operate in detection classes A, B and C, in compliance with EN54-20 (setting sensitivity within the range of 0.025-20.00% obs/m), possibility of networking in VesdaNET (option), external supply needed 24VDC. Procurement, transport, delivery and installation. | pcs. | 1 |
| 14.13 | Supply module with battery charger for 24V, 5A batteries, certificate on compliance with EN54-4 standard, for placement of 38Ah batteries. Procurement, transport, delivery and installation. | Supply module with battery charger for 24V, 5A batteries, certificate on compliance with EN54-4 standard, for placement of 38Ah batteries. Procurement, transport, delivery and installation. | pcs. | 1 |
| 14.14 | Accumulator battery 12V/26Ah, AKU12V26AH, certificates on compliance with IEC 60896 standards.Procurement, transport, delivery and installation. | Accumulator battery 12V/26Ah, AKU12V26AH, certificates on compliance with IEC 60896 standards.Procurement, transport, delivery and installation. | pcs. | 2 |
| 14.15 | Material for execution of aspirating pipeline of 25mm diameter........ m 33- Pipeline 3m long .....pcs. 11- T fork .... pcs. 5- Elbow 90°..... pcs. 5- Clamp ..... pcs. 22- Label for aspiration..... pcs. 18- Final cap ..... pcs. 6 | Material for execution of aspirating pipeline of 25mm diameter........ m 33- Pipeline 3m long .....pcs. 11- T fork .... pcs. 5- Elbow 90°..... pcs. 5- Clamp ..... pcs. 22- Label for aspiration..... pcs. 18- Final cap ..... pcs. 6 | set | 1 |
| 14.16 | Cable JH(St)H 1x2x0.8mm Procurement, transport, delivery and installation. | Cable JH(St)H 1x2x0.8mm Procurement, transport, delivery and installation. | m | 70 |
| 14.17 | Cable NHXHX 3x1.5mm² Procurement, transport, delivery and installation. | Cable NHXHX 3x1.5mm² Procurement, transport, delivery and installation. | m | 15 |
| 14.18 | Cable JE-H(St)H 2x2x0.8mm FE180/E30 Procurement, transport, delivery and installation. | Cable JE-H(St)H 2x2x0.8mm FE180/E30. Procurement, transport, delivery and installation. | m | 220 |
| 14.19 | Cable JH(St)H 3x2x0.8mm Procurement, transport, delivery and installation. | Cable JH(St)H 3x2x0.8mm Procurement, transport, delivery and installation. | m | 15 |
| 14.20 | Cable JH(St)H 2x2x0.8mm FE180/E30 Procurement, transport, delivery and installation.The cable is foreseen for connecting the parallel control workstation at the ground level floor and fire protection central unit in the TV Data Centre. | Cable JH(St)H 2x2x0.8mm FE180/E30 Procurement, transport, delivery and installation.The cable is foreseen for connecting the parallel control workstation at the ground level floor and fire protection central unit in the TV Data Centre. | m | 150 |
| 14.21 | Clamps 12-14, together with special anchor, fire resistance up to 30 minutes, cable cut up to 1.5mm2. | Clamps 12-14, together with special anchor, fire resistance up to 30 minutes, cable cut up to 1.5mm2. | pcs. | 800 |
| 14.22 | Pipe HF fi 16/11 | Pipe HF fi 16/11 | m | 70 |
| 14.23 | Installation of halogen free channel box 30x15 | Installation of halogen free channel box 30x15 | pcs. | 3 |
| 14.24 | Checking the installation, system programming, functional testing, drafting the related documents, instruction manuals, event log, training the users and starting-up the system operationally. | Checking the installation, system programming, functional testing, drafting the related documents, instruction manuals, event log, training the users and starting-up the system operationally. | lump | 1 |
|  | **Radio Data Centre – 2nd floor** |  |  |  |
| 14.25 | Central unit – fire protection collective, for the automatic extinguishing control, front control workstation of the central device in mother tongue, 1 extinguishing sector, 3 detection zones, port for connecting the elements for pressure control, port for connecting the elements for indication of fluid flow, port for connecting the manual activation of extinguishing, extinguishing blockade and retention, output for activation of sound and light signalisation in Phase 1 and Phase 2, one programmable controlled output for connecting the electromagnetic valve or pyrotechnical actuator, relay output for the alarm and error status, LCD for indication of the system status, possibility to insert batteries of 12V/7Ah, certificate of compliance with EN54:2, EN54:4, EN54:13 and EN-12094-1 standards, certificate on compliance with EMC and LVD Directive, issued by nominated bodies. Procurement, transport, delivery and installation. | Central unit – fire protection collective, for the automatic extinguishing control, front control workstation of the central device in mother tongue, 1 extinguishing sector, 3 detection zones, port for connecting the elements for pressure control, port for connecting the elements for indication of fluid flow, port for connecting the manual activation of extinguishing, extinguishing blockade and retention, output for activation of sound and light signalisation in Phase 1 and Phase 2, one programmable controlled output for connecting the electromagnetic valve or pyrotechnical actuator, relay output for the alarm and error status, LCD for indication of the system status, possibility to insert batteries of 12V/7Ah, certificate of compliance with EN54:2, EN54:4, EN54:13 and EN-12094-1 standards, certificate on compliance with EMC and LVD Directive, issued by nominated bodies. Procurement, transport, delivery and installation. | pcs. | 1 |
| 14.26 | Relay module with 8 outputs of C type, intended for installation into the central device for automatic fire extinguishing control.  | Relay module with 8 outputs of C type, intended for installation into the central device for automatic fire extinguishing control.  | pcs. | 1 |
| 14.27 | Accumulator battery 12V/7Ah, AKU7AH, certificate on compliance with IEC 60896 standard.Procurement, transport, delivery and installation. | Accumulator battery 12V/7Ah, AKU7AH, certificate on compliance with IEC 60896 standard.Procurement, transport, delivery and installation. | pcs. | 2 |
| 14.28 | Parallel control workstation for automatic fire extinguishing system control, integrated LCD, LED indication for monitoring the system status, button for manual activation of extinguishing.  | Parallel control workstation for automatic fire extinguishing system control, integrated LCD, LED indication for monitoring the system status, button for manual activation of extinguishing.  | pcs. | 1 |
| 14.29 | Fire detector, conventional, optical, lock option, detonator at the base so as to prevent unauthorised removal of the system elements, indication of elements status via LED. Procurement, transport, delivery and installation. | Fire detector, conventional, optical, lock option, detonator at the base so as to prevent unauthorised removal of the system elements, indication of elements status via LED. Procurement, transport, delivery and installation. | pcs. | 6 |
| 14.30 | Base for conventional fire detector.  | Base for conventional fire detector.  | pcs. | 6 |
| 14.31 | Manual fire alarm, conventional, yellow, for internal installation, certificate of compliance with EN54:11 standard. | Manual fire alarm, conventional, yellow, for internal installation, certificate of compliance with EN54:11 standard. | pcs. | 1 |
| 14.32 | Manual fire alarm, conventional, blue, for internal installation, certificate of compliance with EN54:11 standard. | Manual fire alarm, conventional, blue, for internal installation, certificate of compliance with EN54:11 standard. | pcs. | 1 |
| 14.33 | Siren, conventional, red, two command signals, 32 tones, IP65, 94-106dB/1m, certificate of compliance with EN54:3 standard, and certificate of compliance with the Rulebook on electromagnetic compatibility. | Siren, conventional, red, two command signals, 32 tones, IP65, 94-106dB/1m, certificate of compliance with EN54:3 standard, and certificate of compliance with the Rulebook on electromagnetic compatibility. | pcs. | 2 |
| 14.34 | Flashlight, conventional, red, IP65, certificate of compliance with EN54:23 standard, and certificate of compliance with the Rulebook on electromagnetic compatibility. Procurement, transport, delivery and installation.  | Flashlight, conventional, red, IP65, certificate of compliance with EN54:23 standard, and certificate of compliance with the Rulebook on electromagnetic compatibility. Procurement, transport, delivery and installation.  | pcs. | 2 |
| 14.35 | Low-profile lighting panel, strobe lights, supply 24V DC. Procurement, transport, delivery and installation.  | Low-profile lighting panel, strobe lights, supply 24V DC. Procurement, transport, delivery and installation.  | pcs. | 1 |
| 14.36 | Aspirating smoke detector, 1 suck-in pipe Ø25mm, 1 laser smoke detector, foreseen for installation in spaced up to 500m², 3 programmable relays, panel for indication of the system status, maximal pipeline length 50m, possibility to operate in detection classes A, B and C, in compliance with EN54-20 (setting sensitivity within the range of 0.025-20.00% obs/m), possibility of networking in VesdaNET (option), external supply needed 24VDC. Procurement, transport, delivery and installation.  | Aspirating smoke detector, 1 suck-in pipe Ø25mm, 1 laser smoke detector, foreseen for installation in spaced up to 500m², 3 programmable relays, panel for indication of the system status, maximal pipeline length 50m, possibility to operate in detection classes A, B and C, in compliance with EN54-20 (setting sensitivity within the range of 0.025-20.00% obs/m), possibility of networking in VesdaNET (option), external supply needed 24VDC. Procurement, transport, delivery and installation.  | pcs. | 1 |
| 14.37 | Supply module with battery charger for 24V, 5A batteries, certificate on compliance with EN54-4 standard, for placement of 38Ah batteries. Procurement, transport, delivery and installation. | Supply module with battery charger for 24V, 5A batteries, certificate on compliance with EN54-4 standard, for placement of 38Ah batteries. Procurement, transport, delivery and installation. | pcs. | 1 |
| 14.38 | Accumulator battery 12V/26Ah, AKU12V26AH, certificates on compliance with IEC 60896 standards.Procurement, transport, delivery and installation. | Accumulator battery 12V/26Ah, AKU12V26AH, certificates on compliance with IEC 60896 standards.Procurement, transport, delivery and installation. | pcs. | 2 |
| 14.39 | Material for execution of aspirating pipeline of 25mm diameter........ m 21- Pipeline 3m long .....pcs. 7- T fork .... pcs. 3- Elbow 90°..... pcs. 5- Clamp ..... pcs. 14- Label for aspiration..... pcs. 12- Final cap ..... pcs. 4 | Material for execution of aspirating pipeline of 25mm diameter........ m 21- Pipeline 3m long .....pcs. 7- T fork .... pcs. 3- Elbow 90°..... pcs. 5- Clamp ..... pcs. 14- Label for aspiration..... pcs. 12- Final cap ..... pcs. 4 | set | 1 |
| 14.40 | Cable JH(St)H 1x2x0.8mm.Procurement, transport, delivery and installation. | Cable JH(St)H 1x2x0.8mm.Procurement, transport, delivery and installation. | m | 50 |
| 14.41 | Cable NHXHX 3x1.5mm².Procurement, transport, delivery and installation. | Cable NHXHX 3x1.5mm².Procurement, transport, delivery and installation. | m | 15 |
| 14.42 | Cable JE-H(St)H 2x2x0.8mm FE180/E30 Procurement, transport, delivery and installation. | Cable JE-H(St)H 2x2x0.8mm FE180/E30. Procurement, transport, delivery and installation. | m | 220 |
| 14.43 | Cable JH(St)H 3x2x0.8mm.Procurement, transport, delivery and installation. | Cable JH(St)H 3x2x0.8mm.Procurement, transport, delivery and installation. | m | 20 |
| 14.44 | Cable JH(St)H 2x2x0.8mm FE180/E30.Procurement, transport, delivery and installation.The cable is foreseen for connecting the parallel control workstation at the ground level floor and fire protection central unit in the TV Data Centre. | Cable JH(St)H 2x2x0.8mm FE180/E30.Procurement, transport, delivery and installation.The cable is foreseen for connecting the parallel control workstation at the ground level floor and fire protection central unit in the TV Data Centre. | m | 250 |
| 14.45 | Clamps 12-14, together with special anchor, fire resistance up to 30 minutes, cable cut up to 1.5mm2. | Clamps 12-14, together with special anchor, fire resistance up to 30 minutes, cable cut up to 1.5mm2. | pcs. | 650 |
| 14.46 | Hose HF fi 16/11 | Hose HF fi 16/11 | m | 250 |
| 14.47 | Installation of halogen free channel box 30x15 | Installation of halogen free channel box 30x15 | pcs. | 3 |
| 14.48 | Checking the installation, system programming, functional testing, drafting the related documents, instruction manuals, event log, training the users and starting-up the system operationally. | Checking the installation, system programming, functional testing, drafting the related documents, instruction manuals, event log, training the users and starting-up the system operationally. | set | 1 |
|  | **SPECIFICATION OF AUTOMATICS EQUIPMENT** |  |  |  |
|  | Cabinets ROA-VOD1 and ROA-VOD2 |  |  |  |
| 14.49 | Delivery, installation and connecting the cabinet of the electromotor drive ROA-VOD1 and ROA-VOD2, dimensions of 800x1200x250, in a set, with the following equipment. On the cabinet: - Two-pole, two-position 1-0, with zero position 16A, 230VAC ..... pcs. 1- Three-pole, two-position 1-0, with zero position 16A, 400VAC ..... pcs. 1- Relay for the control of presence and sequence of phases with 1 switch contact 5A, 230V ..... pcs. 1- Signal lamp 230V, 5W, red... pcs. 5- Signal lamp 230V,5W, green... pcs 6- One-contact button for 10A, 230V, 50Hz with one still contact, red.....pcs. 1- One contact button for 10A, 230V, 50Hz with one active contact, red.....pcs 1In the cabinet: - Automatic one-pole switches 2A, fast “B” with thermal and electric overload protection +Isc=6KA, 230V, to be mounted on the rail...... pcs. 7- Automatic one-pole switches 4A, fast “B” with thermal and electric overload protection Isc=6KA, 230V, to be mounted on the rail...... pcs. 2- Automatic one-pole switches 6A, fast “B” with thermal and electric overload protection Isc=6KA, 230V, to be mounted on the rail...... pcs.2- Automatic one-pole switches 10A, fast “B” with 1NO auxiliary signal contact for 5A, 230VAC ......pcs. 1- Transformer for 230/24V, 100VA ...pcs. 1- Auxiliary relay with 4 switch contacts for 6A, 230VAC, main voltage 230VAC ......pcs. 6- Auxiliary relay with 4 switch contacts for 6A, 230VAC, main voltage 24VAC ......pcs. 3- Time relay for the main voltage 24V, 50Hz with 1 switch contact with delay in setting of 0-60 sec. ...... pcs. 1- Contactors for the main voltage of 230VAC, 50Hz, fitting voltage 380-440V 2kW, AC3, with 2NO auxiliary contact for signalisation 6A, 400VAC ...... pcs. 1- Protection switch with thermal and electricity overload protection for 3x400VAC, with auxiliary contacts for signalisation 6A, 400VAC Ir=1.6-2,5A with 1NC and 1NO auxiliary contacts respectively...... pcs. 1 | Delivery, installation and connecting the cabinet of the electromotor drive ROA-VOD1 and ROA-VOD2, dimensions of 800x1200x250, in a set, with the following equipment. On the cabinet: - Two-pole, two-position 1-0, with zero position 16A, 230VAC ..... pcs. 1- Three-pole, two-position 1-0, with zero position 16A, 400VAC ..... pcs. 1- Relay for the control of presence and sequence of phases with 1 switch contact 5A, 230V ..... pcs. 1- Signal lamp 230V, 5W, red... pcs. 5- Signal lamp 230V, 5W, green... pcs 6- One-contact button for 10A, 230V, 50Hz with one still contact, red.....pcs. 1- One contact button for 10A, 230V, 50Hz with one active contact, red.....pcs 1In the cabinet: - Automatic one-pole switches 2A, fast “B” with thermal and electric overload protection +Isc=6KA, 230V, to be mounted on the rail...... pcs. 7- Automatic one-pole switches 4A, fast “B” with thermal and electric overload protection Isc=6KA, 230V, to be mounted on the rail...... pcs. 2- Automatic one-pole switches 6A, fast “B” with thermal and electric overload protection Isc=6KA, 230V, to be mounted on the rail...... pcs.2- Automatic one-pole switches 10A, fast “B” with 1NO auxiliary signal contact for 5A, 230VAC ......pcs. 1- Transformer for 230/24V, 100VA ...pcs. 1- Auxiliary relay with 4 switch contacts for 6A, 230VAC, main voltage 230VAC ......pcs. 6- Auxiliary relay with 4 switch contacts for 6A, 230VAC, main voltage 24VAC ......pcs. 3- Time relay for the main voltage 24V, 50Hz with 1 switch contact with delay in setting of 0-60 sec. ...... pcs. 1- Contactors for the main voltage of 230VAC, 50Hz, fitting voltage 380-440V 2kW, AC3, with 2NO auxiliary contact for signalisation 6A, 400VAC ...... pcs. 1- Protection switch with thermal and electricity overload protection for 3x400VAC, with auxiliary contacts for signalisation 6A, 400VAC Ir=1.6-2,5A with 1NC and 1NO auxiliary contacts respectively...... pcs. 1 | set | 2 |
| 14.50 | Cable N2XH-J 7x1.5mm2 .Procurement, transport, delivery and installation. | Cable N2XH-J 7x1.5mm2 .Procurement, transport, delivery and installation. | m | 195 |
| 14.51 | Cable N2XH-J 3x2.5mm2 .Procurement, transport, delivery and installation. | Cable N2XH-J 3x2.5mm2 .Procurement, transport, delivery and installation. | m | 80 |
| 14.52 | Cable JH(St)H FE90 2x2x0.8mm Procurement, transport, delivery and installation. | Cable JH(St)H FE90 2x2x0.8mm Procurement, transport, delivery and installation. | m | 65 |
| 14.53 | Clamps 12-14, together with special anchor, fire resistance up to 30 minutes, cable cut up to 1.5mm2. | Clamps 12-14, together with special anchor, fire resistance up to 30 minutes, cable cut up to 1.5mm2. | pcs. | 50 |
| 14.54 | Hose HF fi 16/11 | Hose HF fi 16/11 | m | 150 |
| 14.55 | Checking the installation, system programming, functional testing, drafting the related documents, instruction manuals, event log, training the users and starting-up the system operationally. | Checking the installation, system programming, functional testing, drafting the related documents, instruction manuals, event log, training the users and starting-up the system operationally. | set | 1 |
| 14.56 | Drafting the as-built design for stable automatic fire extinguishing installations | Drafting the as-built design for stable automatic fire extinguishing installations | lump | 1 |
|  | **Fire protection design** |
|  | **Radio Data Centre 213A and 213 C** |  |  |
| 15.01 | Extinguishers S-9A, cylinders filled with dry powder, label S-9, compliant with JUS Z.C2.035 standard (Official Gazette of SFRY, 68/80) | Extinguishers S-9A, cylinders filled with dry powder, label S-9, compliant with JUS Z.C2.035 standard (Official Gazette of SFRY, 68/80) | pcs. | 1 |
| 15.02 | Extinguishers CO2-5, cylinders with carbon-dioxide, label CO2-5 compliant with JUS Z.C2.040 standard (Official Gazette of SFRY, 68/80) | Extinguishers CO2-5, cylinders with carbon-dioxide, label CO2-5 compliant with JUS Z.C2.040 standard (Official Gazette of SFRY, 68/80) | pcs. | 1 |
| 15.03 | Saclon II Eco fire extinguisher, or equivalent, a mixture of hydrofluorocarbon and organic detoxic essence P 26. Suitable for A, B, C fire class, as well as for electrical fire, non-corrosive, colourless, without odours and of the following characteristics:Emptying time: 20 secondsRange: 4-5 metersTest pressure: 35 barStoring pressure: 15 barsWeight of a full cylinder: around 13.5kg | Saclon II Eco fire extinguisher, or equivalent, a mixture of hydrofluorocarbon and organic detoxic essence P 26. Suitable for A, B, C fire class, as well as for electrical fire, non-corrosive, colourless, without odours and of the following characteristics:Emptying time: 20 secondsRange: 4-5 metersTest pressure: 35 barStoring pressure: 15 barsWeight of a full cylinder: around 13.5kg | pcs. | 3 |
|  | **TV Data Centre 105 A and 105 CA** |  |  |
| 15.04 | Extinguishers S-9A, cylinders filled with dry powder, label S-9, compliant with JUS Z.C2.035 standard (Official Gazette of SFRY, 68/80) | Extinguishers S-9A, cylinders filled with dry powder, label S-9, compliant with JUS Z.C2.035 standard (Official Gazette of SFRY, 68/80) | pcs. | 1 |
| 15.05 | Extinguishers CO2-5, cylinders with carbon-dioxide, label CO2-5 compliant with JUS Z.C2.040 standard (Official Gazette of SFRY, 68/80) | Extinguishers CO2-5, cylinders with carbon-dioxide, label CO2-5 compliant with JUS Z.C2.040 standard (Official Gazette of SFRY, 68/80) | pcs. | 1 |
| 15.06 | Saclon II Eco fire extinguisher, or equivalent, a mixture of hydrofluorocarbon and organic detoxic essence P 26. Suitable for A, B, C fire class, as well as for electrical fire, non-corrosive, colourless, without odours and of the following characteristics:Emptying time: 20 secondsRange: 4-5 metersTest pressure: 35 barStoring pressure: 15 barsWeight of a full cylinder: around 13.5kg | Saclon II Eco fire extinguisher, or equivalent, a mixture of hydrofluorocarbon and organic detoxic essence P 26. Suitable for A, B, C fire class, as well as for electrical fire, non-corrosive, colourless, without odours and of the following characteristics:Emptying time: 20 secondsRange: 4-5 metersTest pressure: 35 barStoring pressure: 15 barsWeight of a full cylinder: around 13.5kg | pcs. | 4 |
|  | **Other works** |
| **16** | **ARCHITECTURE – Preparatory and construction-artisan works**Note:Before the beginning of preparatory works included in the Bill of Quantities, the rooms planned for adaptation must be cleared of equipment and furniture of importance. |  |  |
|  | **Room 029 – Preparatory works** |  |  |  |
| 16.01 | Disassembly of wooden single and double wing entrance and other doors, together with elements, 90x205cm and 130x205cm in dimensions at the entrances into the room, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Disassembly of wooden single and double wing entrance and other doors, together with elements, 90x205cm and 130x205cm in dimensions at the entrances into the room, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | pcs. | 4 |
| 16.2 | - Disassembly of technical machine made of steel and galvanised sheet, dimensions 100x300cm and 150cm high, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill.- Disassembly of air recovery device made of ALU elements, dimensions 250x500cm, and 60cm high on the ceiling above the room, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill.- Disassembly of water supply installation (sanitary equipment, water supply pipes, and so on) and elements of electric installations (lights, cables, and so on) and mechanical installations (galvanised tubes, and so on), not planned for use, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | - Disassembly of technical machine made of steel and galvanised sheet, dimensions 100x300cm and 150cm high, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill.- Disassembly of air recovery device made of ALU elements, dimensions 250x500cm, and 60cm high on the ceiling above the room, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill.- Disassembly of water supply installation (sanitary equipment, water supply pipes, and so on) and elements of electric installations (lights, cables, and so on) and mechanical installations (galvanised tubes, and so on), not planned for use, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | lump | 1 |
| 16.3 | Disassembly of windows made of ALU profiles and glass filling, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill.- window dimensions 540x110cm .... pcs. 2- window dimensions 540x260cm .... pcs. 2 | Disassembly of windows made of ALU profiles and glass filling, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill.- window dimensions 540x110cm .... pcs. 2- window dimensions 540x260cm .... pcs. 2 | set | 1 |
| 16.4 | Disassembly of wall panel “Hunter Douglas”, together with the suspended ceiling subconstruction, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Disassembly of wall panel “Hunter Douglas”, together with the suspended ceiling subconstruction, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | m2 | 110.6 |
| 16.5 | Removing wall and floor ceramic tiles, together with mortar, chiselling the concrete frames off the room floor openings, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Removing wall and floor ceramic tiles, together with mortar, chiselling the concrete frames off the room floor openings, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | m2 | 35 |
|  | **Construction-artisan works** |  |  |  |
| 16.6 | Construction of locksmith middle platform on the round stairwell with moving wing between the GF and BM. The platform structure and the wing are composed of steel box elements 40x40x3mm, welded to be connected, and anchored into the existing ab mezzanine beam. It is planned to install a d=10mm thick OSB board on the platform tread, fixing it by the means of screws into box profiles.The locksmith elements should be coated with oily paint 3in1 into two layers (tone as selected by the Contracting Authority).Note: ALL MEASURES ARE DETERMINED ON THE SPOT, AND THE PLATFORM ELEMENTS ARE EXECUTED ACCORDING TO WORSHOP DETAILS OF THE CONTRACT. | Construction of locksmith middle platform on the round stairwell with moving wing between the GF and BM. The platform structure and the wing are composed of steel box elements 40x40x3mm, welded to be connected, and anchored into the existing ab mezzanine beam. It is planned to install a d=10mm thick OSB board on the platform tread, fixing it by the means of screws into box profiles.The locksmith elements should be coated with oily paint 3in1 into two layers (tone as selected by the Contracting Authority).Note: ALL MEASURES ARE DETERMINED ON THE SPOT, AND THE PLATFORM ELEMENTS ARE EXECUTED ACCORDING TO WORSHOP DETAILS OF THE CONTRACT. | pcs. | 1 |
| 16.7 | Making shafts on openings in the ab beam, between the GF and 1st floor. The structure of the shafts is composed of steel box elements 40x40x3mm, welded together and anchored into the existing ab mezzanine beam. It is planned to install a d=10mm thick OSB board on the platform tread, fixing it by the means of screws into box profiles.These elements must be painted with anti-corrosive protective coating.Note: ALL MEASURES ARE DETERMINED ON THE SPOT, AND THE PLATFORM ELEMENTS ARE EXECUTED ACCORDING TO WORSHOP DETAILS OF THE CONTRACT. | Making shafts on openings in the ab beam, between the GF and 1st floor. The structure of the shafts is composed of steel box elements 40x40x3mm, welded together and anchored into the existing ab mezzanine beam. It is planned to install a d=10mm thick OSB board on the platform tread, fixing it by the means of screws into box profiles.These elements must be painted with anti-corrosive protective coating.Note: ALL MEASURES ARE DETERMINED ON THE SPOT, AND THE PLATFORM ELEMENTS ARE EXECUTED ACCORDING TO WORSHOP DETAILS OF THE CONTRACT. | pcs. | 3 |
| 16.8 | Installation of water supply network in the toilet:Procurement, transport and installation of PVC tubes and profiling pieces, diameter ø15mm, with all necessary fittings. Wall distribution system, distributed in wall slots, should be protected by felt tapes. Completed water supply network should be tested for pressure and make minutes. The network must be disinfected and well-rinsed.The works include opening slots in brick walls for passing the water supply pipes, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill, and final closing of slots. | Installation of water supply network in the toilet:Procurement, transport and installation of PVC tubes and profiling pieces, diameter ø15mm, with all necessary fittings. Wall distribution system, distributed in wall slots, should be protected by felt tapes. Completed water supply network should be tested for pressure and make minutes. The network must be disinfected and well-rinsed.The works include opening slots in brick walls for passing the water supply pipes, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill, and final closing of slots. | m | 13 |
| 16.9 | Procurement, transport and installation of brass, permeable valves with nickelled cap of ø15mm under every sanitary device – tap | Procurement, transport and installation of brass, permeable valves with nickelled cap of ø15mm under every sanitary device – tap | pcs. | 4 |
| 16.10 | Procurement, transport and installation of corner valve of ø15mm for the toilet tank | Procurement, transport and installation of corner valve of ø15mm for the toilet tank | pcs. | 1 |
| 16.11 | Installation of sewerage network in the toilet:Procurement, transport and installation of PVC sewerage pipes with profile elements and joining material. After the installation, testing to waterproofing and permeacity. The works include opening the slots in the concrete surface for laying the sewerage pipes, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill, and final closing of slots.- PVC tubes ø50mm ...... m 2- PVC tubes ø110mm ...... m 3.5 | Installation of sewerage network in the toilet:Procurement, transport and installation of PVC sewerage pipes with profile elements and joining material. After the installation, testing to waterproofing and permeacity. The works include opening the slots in the concrete surface for laying the sewerage pipes, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill, and final closing of slots.- PVC tubes ø50mm ...... m 2- PVC tubes ø110mm ...... m 3.5 | set | 1 |
| 16.12 | Procurement, transport and installation of floor PVC drain ø50mm with nickled grid and frame. | Procurement, transport and installation of floor PVC drain ø50mm with nickled grid and frame. | pcs. | 1 |
| 16.13 | Coating the floor and wall, to the height of 50cm, with Hydroscope elastic 2K, with waterproof mass in two layers. | Coating the floor and wall, to the height of 50cm, with Hydroscope elastic 2K, with waterproof mass in two layers. | m2 | 7 |
| 16.14 | Applying wall ceramic tiles on the cement screed or ceramic glue. | Applying wall ceramic tiles on the cement screed or ceramic glue. | m2 | 23.85 |
| 16.15 | Applying wall ceramic tiles on the cement screed or ceramic glue. | Applying wall ceramic tiles on the cement screed or ceramic glue. | m2 | 5 |
| 16.16 | Procurement, transport and installation of PVC windows made of five-chamber PVC profiles, wall thickness of d=3mm with galvanised steel reinforcement, wall thickness d=1.5mm. The windows should be equipped with quality hinges for window opening around horizontal and vertical axis. Glazing is done by thermopan glass 4+15+4mm, top quality, using quality EPDM seals, which can be replaced as necessary. All windows should be equipped with exterior window sill from the outer side, made of extruded aluminium, with related lateral ends. The mounting is carried out using metal-elastic grommets, and holes around the door must be filled in with polyurethane foamNote: ALL MEASURES ARE DETERMINED ON THE SPOT AND ELEMENTS OF PVC WINDOWS ARE APPLIED AS PER WORKSHOP DETAILS OF THE CONTRACTOR. | Procurement, transport and installation of PVC windows made of five-chamber PVC profiles, wall thickness of d=3mm with galvanised steel reinforcement, wall thickness d=1.5mm. The windows should be equipped with quality hinges for window opening around horizontal and vertical axis. Glazing is done by thermopan glass 4+15+4mm, top quality, using quality EPDM seals, which can be replaced as necessary. All windows should be equipped with exterior window sill from the outer side, made of extruded aluminium, with related lateral ends. The mounting is carried out using metal-elastic grommets, and holes around the door must be filled in with polyurethane foamNote: ALL MEASURES ARE DETERMINED ON THE SPOT AND ELEMENTS OF PVC WINDOWS ARE APPLIED AS PER WORKSHOP DETAILS OF THE CONTRACTOR. | m2 | 40 |
| 16.17 | One-sided coating of d=39mm pillars and dividing full-brick walls according to the manufacturer’s instructions, with cardboard panels d=12,5mm (single, one-sided coating) to subconstruction of 60x27 mm profiles with stone mineral filling d=20 mm, 20mm thickness. The joints between cardboards and joining elements should be covered with bandage strips and grouted. | One-sided coating of d=39mm pillars and dividing full-brick walls according to the manufacturer’s instructions, with cardboard panels d=12,5mm (single, one-sided coating) to subconstruction of 60x27 mm profiles with stone mineral filling d=20 mm, 20mm thickness. The joints between cardboards and joining elements should be covered with bandage strips and grouted. | m2 | 150.25 |
| 16.18 | Construction of a suspended ceiling according to the manufacturer’s instructions, with plasterboards d=12.5mm (single, one-sided coating), on the subconstruction of CD and UD 60x27mm profiles with related elements-suspenders of the suspended ceiling. Joints of the plasterboards and joining elements must be covered with bandage strips and grouted. | Construction of a suspended ceiling according to the manufacturer’s instructions, with plasterboards d=12.5mm (single, one-sided coating), on the subconstruction of CD and UD 60x27mm profiles with related elements-suspenders of the suspended ceiling. Joints of the plasterboards and joining elements must be covered with bandage strips and grouted. | m2 | 120 |
| 16.19 | Coating the wall and ceiling surfaces with dispersive paint with plastering. Plasterboard surfaces on the walls and ceiling should be plastered with dispersive putty in two layers, and finish with polishing. Prepared surfaces will be coated with dispersive paint in two layers. | Coating the wall and ceiling surfaces with dispersive paint with plastering. Plasterboard surfaces on the walls and ceiling should be plastered with dispersive putty in two layers, and finish with polishing. Prepared surfaces will be coated with dispersive paint in two layers. | m2 | 380 |
| 16.20 | Procurement, transport and installation of laminate d=8mm thick onto the prior applied base made of felt and foil. Along the walls, it is necessary to place battens, which will be fixed to the wall at each 80 cm. Corners to be tailored. | Procurement, transport and installation of laminate d=8mm thick onto the prior applied base made of felt and foil. Along the walls, it is necessary to place battens, which will be fixed to the wall at each 80 cm. Corners to be tailored. | m2 | 61 |
| 16.21 | Procurement and installation of interior double-plywood door with wooden frames and moulding batten with related equipment (door handle, lock, cylinder with three keys). Door opening dimensions 90x205cm and 130x205cm. | Procurement and installation of interior double-plywood door with wooden frames and moulding batten with related equipment (door handle, lock, cylinder with three keys). Door opening dimensions 90x205cm and 130x205cm. | pcs. | 4 |
| 16.22 | Coating of steel profiles on the stairwell with oily paint 3in1 in two layers with basis preparation. | Coating of steel profiles on the stairwell with oily paint 3in1 in two layers with basis preparation. | m2 | 40 |
| 16.23 | Procurement, transport and installation of sanitary equipment: - Procurement and installation of a toilet of top quality faience ceramics, with silent flush tank, all according to the Investor’s choice. - Toilet with the following parts: toilet made of faiance with vertical discharge, low-mounted silent flush tank with nickled flushing pipe Ø 32 mm, toilet seat with lid, toilet brush with holder, wall mounted toilet paper holder, toilet with vertical discharge..... pcs. 1- Procurement, transport and installation of a 1st class washbasin, made of faiance, all according to the Investor’s choice, with appropriate standing tap for hot and cold water, nickled pipes Ø 3/8'', and connection to sewerage through plastic syphon. The washbasin to be installed with overflow and outflow setting, plug, related accessorise, such as: mirror and shelf, glass holder, towel holder, soap holder. The washbasin to be completely installed with the mixer tap for hot and cold water...... pcs. 1- Procurement, transport and installation of a shower of 90x90x35cm in dimensions, at the Investor’s choice, with mixer tap for hot and cold water, with wall holder and movable shower handle. Together with the bath, overflow and outflow setting with the syphon, and relevant accessories, such as towel holder, soap holder ....... pcs. 1- Procurement, transport and installation of electric boiler of 80lit with connecting pipes and safety valve ...... pcs. 1 | Procurement, transport and installation of sanitary equipment: - Procurement and installation of a toilet of top quality faience ceramics, with silent flush tank, all according to the Investor’s choice. - Toilet with the following parts: toilet made of faiance with vertical discharge, low-mounted silent flush tank with nickled flushing pipe Ø 32 mm, toilet seat with lid, toilet brush with holder, wall mounted toilet paper holder, toilet with vertical discharge..... pcs. 1- Procurement, transport and installation of a 1st class washbasin, made of faiance, all according to the Investor’s choice, with appropriate standing tap for hot and cold water, nickled pipes Ø 3/8'', and connection to sewerage through plastic syphon. The washbasin to be installed with overflow and outflow setting, plug, related accessorise, such as: mirror and shelf, glass holder, towel holder, soap holder. The washbasin to be completely installed with the mixer tap for hot and cold water...... pcs. 1- Procurement, transport and installation of a shower of 90x90x35cm in dimensions, at the Investor’s choice, with mixer tap for hot and cold water, with wall holder and movable shower handle. Together with the bath, overflow and outflow setting with the syphon, and relevant accessories, such as towel holder, soap holder ....... pcs. 1- Procurement, transport and installation of electric boiler of 80lit with connecting pipes and safety valve ...... pcs. 1 | set | 1 |
| 16.24 | Unanticipated works related to preparatory and construction-artisan works for Room 029.  | Unanticipated works related to preparatory and construction-artisan works for Room 029.  | lump | 1 |
|  | **Room 210, 2nd floor****Construction – artisan works** |  |  |  |
| 16.25 | - Disassembly of a suspended ceiling panel, with panel cutting and reinforcement of suspending subconstruction, and fixing it into the planned plasterboard dividing wall.- Disassembly of the raised floor panel, made of plywood of d=38mm, with the panel cutting and moving the adjustable stands alongside the planned plasterboard dividing membrane. | - Disassembly of a suspended ceiling panel, with panel cutting and reinforcement of suspending subconstruction, and fixing it into the planned plasterboard dividing wall.- Disassembly of the raised floor panel, made of plywood of d=38mm, with the panel cutting and moving the adjustable stands alongside the planned plasterboard dividing membrane. | lump | 1 |
| 16.26 | Construction of a dividing wall of d=125mm according to manufacturer’s instructions, with plasterboard panels d=12.5mm (double, two-side coating), on the subconstruction of CW and UW 75/0.6 profiles with thermal insulation between the panels made of hard-pressed stone mineral wool d=50mm, and sound insulation of asma-phone panels d=20mm. The joints between the plasterboards and elements to be covered with bandage strips and grouted.Construction material to be manually delivered to the 2nd floor of the building, to the installation place. | Construction of a dividing wall of d=125mm according to manufacturer’s instructions, with plasterboard panels d=12.5mm (double, two-side coating), on the subconstruction of CW and UW 75/0.6 profiles with thermal insulation between the panels made of hard-pressed stone mineral wool d=50mm, and sound insulation of asma-phone panels d=20mm. The joints between the plasterboards and elements to be covered with bandage strips and grouted.Construction material to be manually delivered to the 2nd floor of the building, to the installation place. | m2 | 43.25 |
| 16.27 | Coating the dividing walls with dispersive paint with plastering. Plasterboard surfaces of the walls should be plastered with dispersive putty in two layers, and finish with polishing. Prepared surfaces will be coated with dispersive paint in two layers. Construction material is to be delivered manually, to the 2nd floor and place of installation. | Coating the dividing walls with dispersive paint with plastering. Plasterboard surfaces of the walls should be plastered with dispersive putty in two layers, and finish with polishing. Prepared surfaces will be coated with dispersive paint in two layers. Construction material is to be delivered manually, to the 2nd floor and place of installation. | m2 | 86.50 |
| 16.28 | Procurement and installation of interior double-plywood door with wooden frames and moulding batten with related equipment (door handle, lock, cylinder with three keys). Door opening dimensions 90x205cm. | Procurement and installation of interior double-plywood door with wooden frames and moulding batten with related equipment (door handle, lock, cylinder with three keys). Door opening dimensions 90x205cm. | pcs. | 2 |
| 16.29 | Unanticipated works related to preparatory and construction-artisan works for Room 210, 2nd floor. | Unanticipated works related to preparatory and construction-artisan works for Room 210, 2nd floor. | lump | 1 |
|  | **Room 317, 3rd floor** **Construction – artisan works** |  |  |  |
| 16.30 | Disassembly of suspended ceiling panel “Armstrong”, with the panel cutting and reinforcement of suspended subconstruction, and fixing it into the planned plasterboard dividing wall. | Disassembly of suspended ceiling panel “Armstrong”, with the panel cutting and reinforcement of suspended subconstruction, and fixing it into the planned plasterboard dividing wall. | lump | 1 |
| 16.31 | Construction of a dividing wall of d=125mm according to manufacturer’s instructions, with plasterboard panels d=12.5mm (double, two-side coating), on the subconstruction of CW and UW 75/0.6 profiles with thermal insulation between the panels made of hard-pressed stone mineral wool d=50mm, and sound insulation of asma-phone panels d=20mm. The joints between the plasterboards and elements to be covered with bandage strips and grouted.Construction material to be manually delivered to the 3rd floor of the building, to the installation place. | Construction of a dividing wall of d=125mm according to manufacturer’s instructions, with plasterboard panels d=12.5mm (double, two-side coating), on the subconstruction of CW and UW 75/0.6 profiles with thermal insulation between the panels made of hard-pressed stone mineral wool d=50mm, and sound insulation of asma-phone panels d=20mm. The joints between the plasterboards and elements to be covered with bandage strips and grouted.Construction material to be manually delivered to the 3rd floor of the building, to the installation place. | m2 | 110 |
| 16.32 | Coating the dividing walls with dispersive paint with plastering. Plasterboard surfaces of the walls should be plastered with dispersive putty in two layers, and finish with polishing. Prepared surfaces will be coated with dispersive paint in two layers. Construction material is to be delivered manually, to the 3rd floor and place of installation. | Coating the dividing walls with dispersive paint with plastering. Plasterboard surfaces of the walls should be plastered with dispersive putty in two layers, and finish with polishing. Prepared surfaces will be coated with dispersive paint in two layers. Construction material is to be delivered manually, to the 3rd floor and place of installation. | m2 | 220 |
| 16.33 | Procurement and installation of interior double-plywood door with wooden frames and moulding batten with related equipment (door handle, lock, cylinder with three keys). The door wing must be wrapped into sponge material, d=3cm, and with asma-phone sound insulation 2cm thick from the interior side of the door, and then cover it with eco-leather and upholstery nails. Door opening dimensions 90x205cm. | Procurement and installation of interior double-plywood door with wooden frames and moulding batten with related equipment (door handle, lock, cylinder with three keys). The door wing must be wrapped into sponge material, d=3cm, and with asma-phone sound insulation 2cm thick from the interior side of the door, and then cover it with eco-leather and upholstery nails. Door opening dimensions 90x205cm. | pcs. | 5 |
| 16.34 | Unanticipated works related to preparatory and construction-artisan works for Room 317, 3rd floor. | Unanticipated works related to preparatory and construction-artisan works for Room 317, 3rd floor. | lump | 1 |
|  | **Corridor, 1st floor****Construction – artisan works** |  |  |  |
| 16.35 | Disassembly of the raised floor panel, made of plywood of d=38mm and adjustable stands, and installation thereof once opening in the wall in made, with addition of new panels from the existing supplies at the Contracting Authority’s. | Disassembly of the raised floor panel, made of plywood of d=38mm and adjustable stands, and installation thereof once opening in the wall in made, with addition of new panels from the existing supplies at the Contracting Authority’s. | lump | 1 |
| 16.36 | Chiselling of full-brick dividing wall d=25cm, and making the opening for the doorpost of 225x20cm and opening for passage 209x185cm, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | Chiselling of full-brick dividing wall d=25cm, and making the opening for the doorpost of 225x20cm and opening for passage 209x185cm, with manual transfer of demolition material to the ground floor of the building and disposal on temporary disposal site organised within the building yard, until final transport to the city landfill. | m2 | 4.3 |
| 16.37 | Preparing formworks and construction of reinforced concrete doorpost of 25x20cm cross-cut, MB25 brand, above the designed opening.  | Preparing formworks and construction of reinforced concrete doorpost of 25x20cm cross-cut, MB25 brand, above the designed opening.  | m | 2.25 |
| 16.38 | Mortaring the damaged jambs in passages, using mechanical mortar for external application, with installed formworks and formation of edges.Construction material is to be delivered manually, to the 1st floor and place of installation. | Mortaring the damaged jambs in passages, using mechanical mortar for external application, with installed formworks and formation of edges.Construction material is to be delivered manually, to the 1st floor and place of installation. | m | 4 |
| 16.39 | Plastering, polishing and coating the sides of walkable corridors with dispersive paint (the existing tone), in order to fit it into the existing interior.Construction material is to be delivered manually, to the 1st floor and place of installation. | Plastering, polishing and coating the sides of walkable corridors with dispersive paint (the existing tone), in order to fit it into the existing interior.Construction material is to be delivered manually, to the 1st floor and place of installation. | m2 | 20 |
| 16.40 | Unanticipated works related to preparatory and construction-artisan works for Corridor, 1st floor. | Unanticipated works related to preparatory and construction-artisan works for Corridor, 1st floor. | lump | 1 |
| **17** | **HEAVY CURRENT ELECTRICAL INSTALLATIONS** |  |  |
|  | **Room 210, 2nd floor** |  |  |  |
| 17.1 | Delivery and installation:\*Two-modular electric plugs …..pcs. 2with the following accessorise:- box of 2 modules … pcs. 1- frame for 2 modules … pcs. 1- decoration frame for 2 modules … pcs. 1 - connector for 2 modules…. pcs. 1\* Cable, type PP-Y 3x2.5 mm2 ..... m 150\* Delivery, installation, connecting and testing, as well as all necessary mounting, installation material and accessories for labelling. | Delivery and installation:\*Two-modular electric plugs …..pcs. 2with the following accessorise:- box of 2 modules … pcs. 1- frame for 2 modules … pcs. 1- decoration frame for 2 modules … pcs. 1 - connector for 2 modules…. pcs. 1\* Cable, type PP-Y 3x2.5 mm2 ..... m 150\* Delivery, installation, connecting and testing, as well as all necessary mounting, installation material and accessories for labelling. | set | 1 |
|  | **Room 317, 3rd floor** |  |  |  |
| 17.2 | Delivery and installation of a switchboard cabinet RT-317, superstructure. The following equipment is to be installed therein:-FID 63/0.03.... pcs. 1-Automatic fuse iC60N/20A, 1P, curve D, 10kA ...... pcs. 1-Automatic fuse iC60N/16A, 1P, curve D, 10kA ...... pcs. 2-Automatic fuse iC60N/16A, 1P, curve B, 10kA ...... pcs. 13-Automatic fuse iC60N/10A, 1P, curve C, 10kA ..... pcs 3-iTL 16, 230V ...... pcs. 1- The main connector of the grounding bus, other mounting and joining materials, labels, POK channels, pertinax, stands, and other.Completely connected, tested and started-up under voltage. The price of the cabinet must include mounting/installation, connecting and testing, as well as all necessary material and accessories for installation, connecting and labelling. | Delivery and installation of a switchboard cabinet RT-317, superstructure. The following equipment is to be installed therein:-FID 63/0.03.... pcs. 1-Automatic fuse iC60N/20A, 1P, curve D, 10kA ...... pcs. 1-Automatic fuse iC60N/16A, 1P, curve D, 10kA ...... pcs. 2-Automatic fuse iC60N/16A, 1P, curve B, 10kA ...... pcs. 13-Automatic fuse iC60N/10A, 1P, curve C, 10kA ..... pcs 3-iTL 16, 230V ...... pcs. 1- The main connector of the grounding bus, other mounting and joining materials, labels, POK channels, pertinax, stands, and other.Completely connected, tested and started-up under voltage. The price of the cabinet must include mounting/installation, connecting and testing, as well as all necessary material and accessories for installation, connecting and labelling. | set | 1 |
| 17.3 | Delivery and installation in the existing switchboard cabinet, which supplies RT-317 of the following equipment:- Automatic fuse iC60N/32A, 3P, curve C, 10kA ......pcs. 1- Other joining materials, labels, POK channels, pertinax, stands, and other.Completely connected and started-up under voltage. The price must include mounting/ installation, connecting and testing, as well as all necessary material and accessories for installation, connecting and labelling. | Delivery and installation in the existing switchboard cabinet, which supplies RT-317 of the following equipment:- Automatic fuse iC60N/32A, 3P, curve C, 10kA ......pcs. 1- Other joining materials, labels, POK channels, pertinax, stands, and other.Completely connected and started-up under voltage. The price must include mounting/ installation, connecting and testing, as well as all necessary material and accessories for installation, connecting and labelling. | set | 1 |
| 17.4 | Main supply cable.Supply cable from the existing board to RT-317PP-Y 5x10mm2 | Main supply cable.Supply cable from the existing board to RT-317PP-Y 5x10mm2 | m | 50 |
| 17.5 | Supply of workplaces, interior air conditioning units and service plugs. \*Two-module electric plugs of manufacturer …..pcs. 6 with the following accessorise:- box of 2 modules … pcs. 1- frame for 2 modules … pcs. 1- decoration frame for 2 modules … pcs. 1 - connector for 2 modules…. pcs. 1\* Cable, type PP-Y 3x2.5mm2 .... m 470\* Cable, type PP-Y 3x4mm2 ....... m 10\* The price should include delivery of the equipment, installation, connecting and testing, as well as all necessary mounting, installation material and accessories for labelling. | Supply of workplaces, interior air conditioning units and service plugs. \*Two-module electric plugs of manufacturer …..pcs. 6 with the following accessorise:- box of 2 modules … pcs. 1- frame for 2 modules … pcs. 1- decoration frame for 2 modules … pcs. 1 - connector for 2 modules…. pcs. 1\* Cable, type PP-Y 3x2.5mm2 .... m 470\* Cable, type PP-Y 3x4mm2 ....... m 10\* The price should include delivery of the equipment, installation, connecting and testing, as well as all necessary mounting, installation material and accessories for labelling. | set | 1 |
|  | **Lighting for technical room in the Data Centre** |  |  |  |
| 17.6 | Installation in the suspended ceiling and on frames for lights, distributed as per the design.  Delivery and installation of the switchbox with the following accessories: \*box for 2 modules…. pcs. 1 \*frame for 2 modules…. pcs. 1 \*decoration frame for 2 modules ….pcs. 1  \*simple switch for 2 modules …. pcs. 1 | Installation in the suspended ceiling and on frames for lights, distributed as per the design.  Delivery and installation of the switchbox with the following accessories: \*box for 2 modules…. pcs. 1 \*frame for 2 modules…. pcs. 1 \*decoration frame for 2 modules ….pcs. 1  \*simple switch for 2 modules …. pcs. 1 | set | 5 |
| 17.7 | Delivery and installation of the switchbox with the following accessories: \*box for 2 modules…. pcs. 1 \*frame for 2 modules…. pcs. 1 \* decoration frame for 2 modules ….pcs. 1  \*button for 2 modules …. pcs. 1 | Delivery and installation of the switchbox with the following accessories: \*box for 2 modules…. pcs. 1 \*frame for 2 modules…. pcs. 1 \* decoration frame for 2 modules ….pcs. 1  \*button for 2 modules …. pcs. 1 | set | 5 |
| 17.8 | Laying the cable for supply of lights on the ceiling and the walls in installation insulation tubes. Continuation, i.e. branching of cables in OG switchboard cabinets or inside the lights if the manufacturer envisaged so. Cable to be used is type PP-Y 3x1.5mm2, average length for light supply cables is 10m. | Laying the cable for supply of lights on the ceiling and the walls in installation insulation tubes. Continuation, i.e. branching of cables in OG switchboard cabinets or inside the lights if the manufacturer envisaged so. Cable to be used is type PP-Y 3x1.5mm2, average length for light supply cables is 10m. | pcs. | 13 |
| 17.9 | (S2) Built-in light 4000K, 230V, 34W, similar to RC134B LED37S/840 PSU W60L60 NOC, Philips or equivalent.The price should include delivery of the equipment, installation, connecting and testing, as well as all necessary mounting, installation material and accessories for labelling. | (S2) Built-in light 4000K, 230V, 34W, similar to RC134B LED37S/840 PSU W60L60 NOC, Philips or equivalent.The price should include delivery of the equipment, installation, connecting and testing, as well as all necessary mounting, installation material and accessories for labelling. | pcs. | 13 |
| 17.10 | Panic lights 1x8WDelivery, installation and connection to panic lights in the Data centre space. The light power is 8W, flux 90lm, autonomy for 1h. The lights are equipped with appropriate masks (pictograms). Laying the cables for supply of panic lights on the ceiling and walls by placing installation insulation tubes on frames.Cable to be used is PP-Y 3x1.5mm2, average cable length for panic light supply is 10m. Panic light must have the exit label.The price should include installation, connecting and testing, as well as all necessary mounting, installation material and accessories for labelling. | Panic lights 1x8WDelivery, installation and connection to panic lights in the Data centre space. The light power is 8W, flux 90lm, autonomy for 1h. The lights are equipped with appropriate masks (pictograms). Laying the cables for supply of panic lights on the ceiling and walls by placing installation insulation tubes on frames.Cable to be used is PP-Y 3x1.5mm2, average cable length for panic light supply is 10m. Panic light must have the exit label.The price should include installation, connecting and testing, as well as all necessary mounting, installation material and accessories for labelling. | set | 6 |
| **18** | **ELECTRIC INSTALLATIONS FOR COMMUNICATION ENGINEERING** |  |  |
|  | **Room 210, 2nd floor** |  |  |  |
|  | Passive infrastructure for connecting room 201 to the rest of communication infrastructure to room 106. |  |  |  |
| 18.1 | Patch panel Cat. 6A, encased with 24 x RJ45 ports for installation into a 19” rack. The panel is equipped with frames for mechanical dividing of cables, system for connecting the cable coating and conductor for the connection to potential equalisation system. - Patch panel 19"" for 24 modules, empty, 1HU high with labelling equipment. The price includes works/installation on module connecting ….. pcs. 1Patch panel is installed into racks as per scheme and technical description for connecting the cabinet, provided for in design documentation. -RJ45 Module for patch panel Cat. 6A 10Gbit, STP (SFB). The price includes works/installation.......pcs. 30 | Patch panel Cat. 6A, encased with 24 x RJ45 ports for installation into a 19” rack. The panel is equipped with frames for mechanical dividing of cables, system for connecting the cable coating and conductor for the connection to potential equalisation system. - Patch panel 19"" for 24 modules, empty, 1HU high with labelling equipment. The price includes works/installation on module connecting ….. pcs. 1Patch panel is installed into racks as per scheme and technical description for connecting the cabinet, provided for in design documentation. -RJ45 Module for patch panel Cat. 6A 10Gbit, STP (SFB). The price includes works/installation.......pcs. 30 | set | 1 |
| 18.2 | Making connections on patch panels cat.6a with labelling and testing.Making connections to the ends of cable Cat.6a, labelling and testing.Link testing is to be conducted with a tester that can measure at least 500MHz, issuing certificate for each link. | Making connections on patch panels cat.6a with labelling and testing.Making connections to the ends of cable Cat.6a, labelling and testing.Link testing is to be conducted with a tester that can measure at least 500MHz, issuing certificate for each link. | pcs. | 14 |
| 18.3 | Patch cables- Patch cable RJ45, Cat.6, U/UTP, PVC, grey, 1m ....... pcs. 15- Patch cable RJ45, Cat.6, U/UTP, PVC, grey, 2m ....... pcs. 5- Patch cable RJ45, Cat.6, U/UTP, PVC, grey, 3m ....... pcs. 5 | Patch cables- Patch cable RJ45, Cat.6, U/UTP, PVC, grey, 1m ....... pcs. 15- Patch cable RJ45, Cat.6, U/UTP, PVC, grey, 2m ....... pcs. 5- Patch cable RJ45, Cat.6, U/UTP, PVC, grey, 3m ....... pcs. 5 | set | 1 |
| 18.4 | Delivery and laying the installation halogen free cable S/FTP type, cat 6a/ Class EA 4x2x23 AVG LSOH- The cable is installation one, for connecting the equipment in the Data Centre interspace and space. | Delivery and laying the installation halogen free cable S/FTP type, cat 6a/ Class EA 4x2x23 AVG LSOH- The cable is installation one, for connecting the equipment in the Data Centre interspace and space. | m | 500 |
| 18.5 | Installation of elements – Connector RJ45 | Installation of elements – Connector RJ45 | pcs. | 14 |
| 18.6 | Final installation of modules and connectors, start-up the passive network into operation. | Final installation of modules and connectors, start-up the passive network into operation. | lump | 1 |
| 18.7 | Construction works during the installation mounting include making openings and slots, and closing openings and slots in walls. | Construction works during the installation mounting include making openings and slots, and closing openings and slots in walls. | lump | 1 |
| 18.8 | Installation of fire resistant barriers in places where cables pass from one fire protection sector to another, together with spraying the cables with attested fire resistant mixture (to the opening), all according to design detail.  | Installation of fire resistant barriers in places where cables pass from one fire protection sector to another, together with spraying the cables with attested fire resistant mixture (to the opening), all according to design detail.  | lump | 1 |
|  | **Room 317, 3rd floor** |  |  |  |
| 18.9 | FO patch panels 24xLC-Duplex for receipt of optical interconnection with telecommunication room on the 1st floor. FO patch panel is 24xLC-Duplex, equipped with a frame for mechanical dividing of cables, system for connecting the cable coating, equipment for FO patch panel labelling, and conductor for the connection to potential equalisation system.- FO Patch Panel 19"", 1U 24 x LC Duplex MM 50/125 OM4 (for LC adapters with feeders ready to receipt predetermined and prefabricated optical cable 2 x 24x50/125, OM4 finished with LC adapters on both ends).......pcs 1- FO Adapter LC duplex, MM, plastic, ceramic coating, grey. The price must include works and installation of equipment......pcs 28- FO Pigtail LC, OM4, multimode, 50/125 um, 2m, 4 pieces in the set. The price must include works and installation of equipment......pcs 24The price includes all works/installation. | FO patch panels 24xLC-Duplex for receipt of optical interconnection with telecommunication room on the 1st floor. FO patch panel is 24xLC-Duplex, equipped with a frame for mechanical dividing of cables, system for connecting the cable coating, equipment for FO patch panel labelling, and conductor for the connection to potential equalisation system.- FO Patch Panel 19"", 1U 24 x LC Duplex MM 50/125 OM4 (for LC adapters with feeders ready to receipt predetermined and prefabricated optical cable 2 x 24x50/125, OM4 finished with LC adapters on both ends).......pcs 1- FO Adapter LC duplex, MM, plastic, ceramic coating, grey. The price must include works and installation of equipment......pcs 28- FO Pigtail LC, OM4, multimode, 50/125 um, 2m, 4 pieces in the set. The price must include works and installation of equipment......pcs 24The price includes all works/installation. | set | 1 |
| 18.10 | Delivery and laying of optical cable 8 x 50/125um-OM4, FRNC-LS0H. The cable is installation one and serves for connecting the equipment in Room 317(4 offices) as interconnection towards the Telecommunication room. | Delivery and laying of optical cable 8 x 50/125um-OM4, FRNC-LS0H. The cable is installation one and serves for connecting the equipment in Room 317(4 offices) as interconnection towards the Telecommunication room. | m | 400 |
| 18.11 | Making FO connections on patch panelsFinishing of FO pre-installed cable in FO patch panel, with shunting of the FO cable reserve. - Set: installation, connection, labelling of connections….. pcs. 4-Final measurements on optical cable, making a measurement protocol……pcs. 32- Final installation and start-up…..lump  | Making FO connections on patch panelsFinishing of FO pre-installed cable in FO patch panel, with shunting of the FO cable reserve. - Set: installation, connection, labelling of connections….. pcs. 4-Final measurements on optical cable, making a measurement protocol……pcs. 32- Final installation and start-up…..lump  | set | 1 |
| 18.12 | Construction works during the installation mounting include making openings and slots, and closing openings and slots in walls. | Construction works during the installation mounting include making openings and slots, and closing openings and slots in walls. | lump | 1 |
| 18.13 | Installation of fire resistant barriers in places where cables pass from one fire protection sector to another, together with spraying the cables with attested fire resistant mixture (to the opening), all according to design detail.  | Installation of fire resistant barriers in places where cables pass from one fire protection sector to another, together with spraying the cables with attested fire resistant mixture (to the opening), all according to design detail.  | lump | 1 |
|  | **THERMO-TECHNICAL INSTALLATIONS**Note: Warranty period for executed works and supplied equipment: 12 months, with possibility of extension of the warranty, upon the expiry of standard period |  |  |  |
|  | **Room 317, 3rd floor** |  |  |  |
| 18.14 | External air conditioning unit. Delivery and installation of external air conditioning unit Multi Split, dimensions max: W. 950x H. 1170 x D.330 mm; Weight: 84.0 kg Cooling capacity: 0.9/ 11.2/ 13.5 kW Heating capacity: 1.0/ 12.5/ 15.0 kW Nominal power in cooling regime: 0.80-2.70-4.20 kW Nominal power in heating regime: 0.80-2.80- 4.50 kW Maximal length of pipe: 85 m, with one section not longer than 25 m Supply: 1 ph/220~240/50Hz; Operating range (external) cooling/heating: -10~48/ -18~18 °C Sound: max. 67 dBA Pipe joints (liquid/gas) :ø 6.35(1/4")mm/ ø 9.52 (3/8")mm | External air conditioning unit. Delivery and installation of external air conditioning unit Multi Split, dimensions max: W. 950x H. 1170 x D.330 mm; Weight: 84.0 kg Cooling capacity: 0.9/ 11.2/ 13.5 kW Heating capacity: 1.0/ 12.5/ 15.0 kW Nominal power in cooling regime: 0.80-2.70-4.20 kW Nominal power in heating regime: 0.80-2.80- 4.50 kW Maximal length of pipe: 85 m, with one section not longer than 25 m Supply: 1 ph/220~240/50Hz; Operating range (external) cooling/heating: -10~48/ -18~18 °C Sound: max. 67 dBA Pipe joints (liquid/gas) :ø 6.35(1/4")mm/ ø 9.52 (3/8")mm | pcs. | 1 |
| 18.15 | Interior air conditioning unit. Delivery and installation of interior parapet air conditioning unit of the Multi Split systemQhl= 2.6 kW Qgr= 2.9 kW, R410A Connecting power: 20W-220-240 V/1ph/50Hz Dimensions of the interior unit: WxHxD= 700x600x210 mm Weight: 14kgAir flow 510/402/300 m3/h Connectors to the copper pipeline: Cuø6.35/Cuø9.52mm Sound 53,dBA, sound pressure 38/32/27 dba | Interior air conditioning unit. Delivery and installation of interior parapet air conditioning unit of the Multi Split systemQhl= 2.6 kW Qgr= 2.9 kW, R410A Connecting power: 20W-220-240 V/1ph/50Hz Dimensions of the interior unit: WxHxD= 700x600x210 mm Weight: 14kgAir flow 510/402/300 m3/h Connectors to the copper pipeline: Cuø6.35/Cuø9.52mm Sound 53,dBA, sound pressure 38/32/27 dba | pcs. | 5 |
| 18.16 | Copper pipeline for connecting the external and internal units, together with thermal insulation with water vapour barrier of 6mm, electrical cable for interconnection, of the following dimensions and quantities. Calculation and charging as per meter of installed section: Cu ø6.35 / Cu ø9.52mm | Copper pipeline for connecting the external and internal units, together with thermal insulation with water vapour barrier of 6mm, electrical cable for interconnection, of the following dimensions and quantities. Calculation and charging as per meter of installed section: Cu ø6.35 / Cu ø9.52mm | m | 85 |

**Warranty:** 2 years from the takeover of executed works and final application for payment for the executed works and delivered equipment. The Contractor shall, at their own expense, repair all lacks in the executed works which appear during the warranty period, as instructed by the Contracting Authority. If the Contractor does not react to the request of the Contracting Authority, the Contracting Authority shall be entitled to repair all lacks at the expense of the Contractor, by hiring another contractor to do so.

**Quality assurance:** All installed material and equipment must correspond to the description, important characteristics and scope defined in the Tender Dossier and Offer, and when implementing the contract, the Contractor shall supply the Contracting Authority with attests on conducted tests of materials and equipment, thus proving the descriptions and important properties of the material and equipment described in the Tender Dossier and Offer. All costs for material and equipment testing shall be borne by the Contractor.

**The manner of quality control**: Professional supervision over the contract implementation shall be conducted by the Contracting Authority through a company registered for supervision over the construction works, which will be duly notified to the Contractor in written form. The Contracting Authority shall, on the day of introducing the Contractor into the job, notify the Contractor in written about persons who will conduct professional supervision and supervision over other contracted works (hereinafter referred to as: Supervisory Body). If there is a change in Supervisory Body during the execution of works, the Contracting Authority shall inform the Contractor about that. The Supervisory Body shall be authorised to take care and control implementation of this Contract pursuant to the Law on Spatial Planning and Construction. The Supervisory Body shall not be entitled to relieve the Contractor of any duty or obligation from the Contract if not previously authorised to do so by the Contracting Authority in written form. The existence of the Supervisory Body and their omissions in exercising the professional supervision cannot exempt the Contractor of their obligation and responsibility for quality and proper execution of works. The Supervisory Body shall be entitled to order the Contractor to repair the executed works that were not in compliance with the description, important characteristics and scope defined in the Tender Dossier. If the Contractor, despite the warning and request made by the Supervisory Body, does not repair noticed lacks and continues to execute works not in compliance with the description, important characteristics and scope defined in the Tender Dossier, the Supervisory Body shall suspend the works and inform about that the Contracting Authority and competent inspectorate, and shall enter such circumstances into the construction log. Execution of works can continue again once the Contractor takes and implements all appropriate actions and measures which, according to the finding of the competent inspectorate and Supervisory Body, ensure execution of works in compliance with descriptions, important characteristics and scope defined in the Tender Dossier and Offer. If certain disagreements arise between the Supervisory Body and the Contractor in terms of materials being used, the material shall be sent for testing so as to determine whether if corresponds to the description, important characteristics and scope defined in the Tender Dossier and Offer. Costs for such testing shall be borne by the Contractor, who is entitled to require reimbursement of the costs from the Contracting Authority, if the latter was wrong. The material for which it is established that does not corresponds to the description, important characteristics and scope defined in the Tender Dossier and Offer, shall be removed from the construction site by the Contractor at their own expense, within the deadline set by the Supervisory Body.

If certain lacks in delivered goods are noticed, the Contracting Authority shall offer the Tenderer a reasonable time period, but not more than 10 work days, to eliminate noticed lacks

If the Tenderer fails to eliminate the subject lacks within the given deadline, the Contracting Authority can initiate termination of the Contract, at the expense of the Tenderer.

The subject of the procurement shall be implemented as per the Main Design, which was drafted by the contracted designer, and revised by contracted supervisor, and which can be observed in the period between 1 October 2018 and 19 October 2018 at the contact person’s, subject to prior appointment approved by the Committee.

Draft and calculation of costs, tests, trials, professional supervision, condition for takeover, technique and/or methods for construction shall be conducted in accordance and compliance with: the Contract documentation (construction books and construction log); Law on Spatial Planning and Construction, Rulebook on the manner and procedure for professional supervision, Rulebook on the manner of maintenance and contents of the construction log, construction books and inspection records, Rulebook on the amendments of the Rulebook on the manner of technical check and other relevant regulations pertaining to this area.

Other:

Within the 5 days from the Contract signing with the Contracting Authority, the Contractor shall supply the schedule of works with full technical data and in accordance with the contracted deadline for the Contract implementation.

Organisation and connection of the construction site to the electrical, water supply, sewerage and PTT installations, shall be ensured by the Contractor on their own and at their own cost.

Upon the completion of works, the Contractor shall withdraw from the construction site their workers, remove the remaining material, equipment, working tools and temporary facilities used during the execution of contracted works, shall clean the construction site of litter and arrange and clean the surroundings of the building and building itself (the building that was subject to contracted works).

Check and takeover of the executed works shall be conducted according to regulations applicable at the seat of the Contracting Authority. The notification about the completion of works shall be submitted by the Contractor to the Contracting Authority through the Supervisory Body.

The Contractual Parties shall make available all documents relevant for implementation of this Contract to the Commission for check and takeover of works, established by the Contracting Authority, before the Commission starts its work.

The Contractor shall act according to notes made by the Commission for check and takeover of executed works, within deadlines as set by the Commission.

If the Contractor does not act according to the notes referred to in paragraph 1 of this Article within the set deadline, the Contracting Authority shall repair the found lacks on their own or through other contractor, at the Contractor’s expense.

Upon the conducted check and takeover of the executed works and repair of identified lacks, the Contracting Parties shall, through their authorised representatives, conduct final calculation for executed works and delivered equipment within 45 days period.

The Contractors must have concluded a contract on insurance of professional accountability for damages that can be incurred to the investor or third parties in relation to the implementation of tasks. The insured activity shall pertain to the activities of building construction, i.e. execution of certain works on the construction of building, as well as to sale activities. The limit (insured amount) cannot be lower than Euro 100,000. This insurance must cover the risk of responsibility for damages caused to persons, damages of structures and for financial loss.

Other conditions related to application of regulations:

* The subject of the procurement shall be implemented as per *technical documents – design documents* drafted by contracted designer and revised by contracted supervisor.
* During the project implementation, the Contracting Authority shall contract the professional supervision.
* The Tenderer shall bear costs for use of patents and shall be responsible for violation of intellectual property rights of third parties.

Other proofs:

The Tenderer shall supply the following proofs:

* Proof issued by the manufacturer of offered equipment for data centres: rack cabinets, system for the control of physical parameters in IT environment, equipment for air conditioning of data centres (interior cooling devices and chillers), to prove that the Tenderer is authorised for delivery, installation, start-up, service and maintenance of offered equipment for data centres according to current standards.

* Proof issued by the manufacturer of the offered equipment to prove that the Tenderer is trained and authorised for installation of mechanical cooling installation infrastructure.
* Proof of the existence of authorised service partner in the territory of Montenegro for maintenance of equipment for data centres air conditioning.
* Statement of the manufacturer of offered equipment for data centres: rack cabinets, system for the control of physical parameters in IT environment, equipment for air conditioning of data centres (interior cooling devices and chillers), to guarantee that all needed spare parts for all elements of the equipment shall be provided for data centres within at least 5 years upon the delivery and installation of the equipment.

* Statement of the authorised service partner in the territory of Montenegro for air conditioning of data centres, ensuring the response in urgent situations within not more than 4 (four) hours from the first call from the user.

Notes:

The Tender should specify and envisage delivery of own material and equipment listed in the BoQ table, as well as of all small, not specified material needed for fabrication and complete execution and installation, as stated in specific items. All necessary works and testing for starting-up the equipment into proper operation should be offered, as well as restoration into proper (original) state of all damaged spots in already executed works and structures of the facility in which adaptation of space is planned.

The Tender should also calculate all prices of the listed and needed material in items provided in this BoQ, as well as prices of needed non-specified material needed for fabrication, prices of labour, all taxes and contributions to the material and work. The price should also include drafting of all possible needed workshop documentation, testing and start-up of all installation elements listed in items herein.

Type of materials and possible models, as well as names of equipment manufacturers stated somewhere are merely examples and shall be used as minimal technical standards and specifications that the offered equipment should have. The contractors should offer equipment and materials of the equivalent or better technical properties of other manufacturers equivalent to those listed in technical specification, which shall be subject to the approval of Committee that will conduct technical evaluation and valuation of received tenders and offered solutions.