**Annex No.1 Basic common characteristics of individual jobs**

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| **KNOWLEDGE** |
| **Level 1**  | Basic general knowledge of principles, processes and general concepts in the field. Factual and theoretical knowledge of tools, procedures and basic standards. |
| **Level 2**  | Extended theoretical knowledge in the field.Integration of information from various sources.Assessment of the relevance of basic professional information.Application in practice. |
| **Level 3**  | Top, highly specialized theoretical and practical knowledge in the field and in related fields and at the interface between fields.Integration of information from related fields as a basis for research or project. |

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| **SKILLS** |
| **Level 1**  | Basic skills required to perform tasks and solve problems by selecting and using basic methods, tools and information. Basic choice of work procedures and resources. Recognition of the origin of a problem and determination of its cause and effect. Submission of proposals for elimination of faults and defects. Use of theoretical and practical knowledge in solving problems in the field. |
| **Level 2**  | Mastering methods and tools in a complex and specialized field. Advanced application of work procedures and their possible modification according to needs. Advanced practical skills and abilities to solve tasks for which established procedures are not available. Use of theoretical and practical knowledge and communication skills in solving problems at different levels. Assessing the quality of work products and identifying the causes of deficiencies and creation of proposals to increase productivity. Implementation of new proposals. Presentation of the results of your work, or alternatively of any entrusted section and short-term strategies in the field. Advocating innovation of recommended solutions. |
| **Level 3**  | Highly advanced and specialized skills and techniques, including synthesis and assessment required to solve critical problems and redefining existing knowledge or expertise. Developing new skills in response to emerging knowledge and technical equipment.Use of both existing and new knowledge from various fields. Innovation of used methods and determination of the implementation method. |

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| **OTHER FACTORS** |
| **Level 1**  | Work under supervision. Routine, repetitive activities with slight variations. Quick acquisition of basic work activities. When solving problems, adapt your behavior to the circumstances. Respond to a change in the work process. Assess quality and take responsibility for the results of your work. |
| **Level 2**  | For initial training, professional theoretical knowledge and its connection with practice is necessary; a broader general overview and basic knowledge in related fields is needed. Evaluate the needs of self-education for work performance.Search for information needed to solve larger tasks on one’s own. Take responsibility for performing specialized tasks. Perform and control routine professional activities that undergo unpredictable changes. Ability to work in a team; where appropriate, lead a team of workers performing routine activities. Take responsibility for fulfilling the tasks and results of your work, alternatively the work of your subordinates. |
| **Level 3**  | Initial training requires a broad general overview and theoretical knowledge in the field; extensive knowledge in related fields is required. Solve problems associated with the application of extensive theoretical knowledge. Solve non-standard and complex problems requiring consideration of other factors beyond one's own expertise. Factually discuss problems to find solutions.Lead the discussion, consider the proposed alternatives and take responsibility for the final decision.Develop new methods at the top level in the field of work, including research. Identify the educational needs of yourself and possibly of your subordinates, too. Frequent employment in highly professional, independent or managerial positions. |

IT job groups

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| **Profile**  | **Number of degrees** |
| “IT OPERATOR” profile  | 3 |
| “IT TECHNICIAN" profile  | 3 |
| "IT SYSTEM MANAGER" profile  | 3 |
| "PROGRAMMER" profile  | 4 |
| “IT SPECIALIST” profile  | 3 |
| "IT ANALYST" profile  | 3 |
| “IT ARCHITECT” profile  | 3 |

**“IT OPERATOR” profile**

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| Basic characteristics (Subject of work) | The operator is a qualified employee of the first level of monitoring the backbone elements of the ICT infrastructure and informing about their status and providing basic services and information in connection with the operation of shared ICT resources, especially computer study rooms. |
| Basic work activities  | The basic activities of the OPERATOR profile include in particular:• Operational monitoring of the backbone elements of the infrastructure • Management and control of access to premises with ICT technology • Communication with users and/or technicians and providing information • Searching for and identification of defects of supervised ICT technology • Other operational activities and operation of ICT equipment |
| IT Operator 1  | Worker with basic qualifications |
| Specific work activities  | • None |
| Requirements for professional skills | The required professional skills include in particular: • Operatively solves problems of an operational nature • Monitors the operation in the entrusted area • Provides operational requirements for the operation of assigned equipment and communication with users and/or technicians |
| IT Operator 2  | A worker with higher qualifications |
| Specific work activities  | Specific work activities also include in particular: • Organization of work in connection with the operation of assigned equipment • Cooperation on the preparation, implementation and monitoring of the operation of the entrusted ICT technology Cooperation in the creation and processing of operational innovations aimed at improving the user availability of ICT technology • Keeping relevant documentation |
| Requirements for professional skills | The required professional skills also include in particular: • Independently solves atypical problems of ICT technology operation • Manages the entry of authorized users into the premises, ensures compliance with the relevant operating rules• Provides technical support to users • Supervises the operation of the entrusted equipment • Provides information to the public verbally and in writing directly in the computer room environment or through communication means |

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| IT Operator 3  | Highly qualified worker |
| Specific work activities  | Specific work activities also include in particular: • Organization of work in the premises of shared ICT technology • Management and updating of information on the operation and operating rules of computer study rooms and other equipment • Provides comprehensive information services and advice to users of shared ICT technology |
| Requirements for professional skills | The required professional skills also include: • Analysis and design of procedures in connection with the system and user environment of shared ICT resources • Providing methodology for the operation of shared ICT technology |

**“IT TECHNICIAN" profile**

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| Basic characteristics (Subject of work) | An IT Technician is a qualified worker who independently ensures the functioning of integral parts of hardware and their installation, including recovery to operating conditions and supervision of operation. |
| Basic work activities  | The basic activities of the profile include in particular: • Hardware installation, recovery, configuration and commissioning • Software installation • Ensuring the prevention and routine maintenance of integral parts of hardware • Providing service of the selected hardware• Management of operational and technical documentation |
| IT Technician 1  | Worker with basic qualifications |
| Specific work activities  | • None |
| Requirements for professional skills | The required professional skills include in particular: • Implementation of installation, diagnostics, prophylaxis and repair of individual ICT devices • Installation of basic software and its basic configuration. • Elimination of failures and accidents of individual ICT devices |
| IT Technician 2  | A worker with higher qualifications |
| Specific work activities  | Specific work activities also include in particular: • Performing technical maintenance of computer systems and atypical computer equipment • Coordination of service and maintenance of hardware and other computer technology • Optimization of spare parts stocks and their coordination with suppliers • Keeping relevant documentation |
| Requirements for professional skills | The required professional skills also include in particular: • Independent performance of technical administration and maintenance of activities for large-scale computer systems • Design and elaboration of hardware studies and technical analyzes of problems of complex information technology systems |

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|  | • Concentration and management of technical information to anticipate opportunities to improve ICT processes |

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| IT technician 3  | Highly qualified worker |
| Specific work activities  | Specific work activities also include in particular: • Analysis of technical information to anticipate opportunities for improvement in the field of information technology • Optimization of the use of information technology, including system settings in terms of hardware-software connection • Design and elaboration of hardware studies and technical analyzes of problems of complex information technology systems  |
| Requirements for professional skills | The required professional skills also include:• Analysis and design of complex tasks in relation to the system and user environment of ICT resources• Comprehensive determination of directions of technical development depending on the conditions of software and system equipment regarding the needs of users• Management of the implementation of the proposed ICT tools, including harmonization with the user environment |

**"IT SYSTEM MANAGER" profile**

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| Basic characteristics (Subject of work) | A system administrator is a qualified employee who sets the parameters of operating systems, databases, network systems and other software applications and computer systems and computer networks in order to ensure the functionality and security of their operation. |
| Basic work activities  | The basic activities of the SYSTEM MANAGER profile include in particular: • Acquisition, verification, commissioning and setting of parameters of managed systems • Monitoring, diagnostics and optimization of the operation of entrusted systems and computer networks, detection of defects and errors • Management of systems in terms of their antivirus protection and security • Backup and recovery of systems in the event of an accident• Providing readiness to ensure the functionality of systems • Keeping and maintaining relevant documentation |
| IT system administrator 1  | Worker with basic qualifications |
| Specific work activities  | • None |
| Requirements for professional skills | The required professional skills include in particular: • Carrying out standard installation, basic settings, diagnostics and prophylaxis of entrusted systems • Standard monitoring of the operation and safety of the entrusted systems |

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|  | • Detection of errors in the operation of systems • Basic management of users of entrusted systems • Keeping and maintaining documentation of assigned systems |
| IT system administrator 2  | A worker with higher qualifications |
| Specific work activities  | Specific work activities also include in particular: • Design of development and innovation of system and program resources, ensuring the selection, testing, deployment and operation of suitable systems • Designing the effective use of operating systems • Determining the methods of data protection and backup |
| Requirements for professional skills | The required professional skills also include in particular: • Independent management of complex systems entrusted to the administration • Compilation of a management plan for users of entrusted systems, including designing the level of access security • Proposals and design of expanding the portfolio of managed systems and creating proposals for innovation of existing ones • Management of testing and operability of entrusted operating systems and their components • Managing and training a team of system administrators • Management and maintenance of relevant documentation of the structure of operated systems |

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| IT system administrator 3  | Highly qualified worker |
| Specific work activities  | Specific work activities also include in particular: • Design and implementation of methodology and technological standards for the management and administration of systems, including procedures for disaster recovery • Design and coordination of service and maintenance of entrusted systems • Solution of non-standard operating situations and their consultation with users and suppliers, identification of errors and faults • Providing consulting services and methodological management of system users and system administrators • Training of system administrators • Optimization of the operation of entrusted systems and related infrastructure |
| Requirements for professional skills | The required professional skills also include in particular: • Independent implementation of system conceptual work associated with the expansion and implementation of systems and other means of computer technology • Design and development of software and hardware studies and analyzes of complex problems • Optimization of system performance and coordination of user access to all their components • Concentrating and managing technical information to anticipate opportunities to improve data processing processes • Comprehensive management and coordination of the most complex repairs |

**"PROGRAMMER" profile**

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| Basic characteristics (Subject of work) | A programmer is a skilled worker who creates computer applications or their parts and cooperates in their testing and debugging. |
| Basic work activities  | The basic activities of the PROGRAMMER profile include in particular: • Creating analytical documentation of applications, including data and object structures and their links • Programming in the appropriate programming language based on analytical documentation • Collaboration in order to create application user interfaces based on user requirements • Collaborate on testing applications and tasks • Processing of documents for user documentation |
| Programmer 1  | Worker with basic qualifications |
| Specific work activities  | • None |
| Requirements for professional skills | The required professional skills include in particular: • Creating local applications without further connections and under professional guidance • Updating and maintenance of design and system tools (e.g. dials, parametric modules) • Cooperation in creating user applications based on processed project documentation |
| Programmer 2  | A worker with higher qualifications |
| Specific work activities  | Specific work activities also include in particular:• Creating analytical documentation of applications or partial application units, including data and object structures, and defining their links • Programming in the appropriate programming language based on analytical documentation • Testing applications and tasks • Processing of system documentation of created code and documents for user documentation |
| Requirements for professional skills | The required professional skills also include in particular: • Providing analysis of design tasks, including database designs • Testing and debugging of created applications within programming tools • Maintenance and optimization of created software and design documentation • Creating new modules and new versions • Ensuring the implementation of special programs • Managing the implementation of computer applications, including harmonization with the user environment |

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| Programmer 3  | Highly qualified worker |
| Specific work activities  | Specific work activities also include in particular: |

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|  | • Analysis of processes, legislative and technical conditions and user requirements • Creates logical and structural diagrams based on system analysis of processes and user requirements information systems and computer applications, including links to surrounding systems • Design of testing and debugging of complex program units and complex tasks • Editing system and user documentation |
| Requirements for professional skills | The required professional skills also include: • Analysis and design of complex tasks in relation to the system and user environment. • Management of the process of implementation of all legislative and methodological changes in user applications • Ability to independently analyze and design demanding applications, including database design and integration into existing systems • Independent design and planning of computer application innovation in the context of the technical and system resources development of computer technology • Ensuring system and data integrity of designed solutions • Providing methodology for the design of information systems |

Note: The IT 4 programmer is not occupied within the ICS

**“IT SPECIALIST” profile**

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| Basic characteristics (Subject of work) | A technical specialist is a qualified worker who independently ensures the functioning of complete parts and/or units of large-scale hardware and software systems supporting research groups and is in this respect a "technical non-academic researcher". It assumes the ability to think synthetically at all stages. |
| Basic work activities  | The basic activities of the IT SPECIALIST profile include in particular: • Creation, verification, commissioning and setting of parameters of managed systems or their parts • Monitoring, diagnostics and optimization of the operation of entrusted systems or their parts, detection of defects and errors • Ensuring the prevention, routine maintenance and service of entrusted systems or their parts • Management of systems in terms of their security • Backup and disaster recovery • Creating, maintaining and upkeeping relevant documentation |
| IT specialist 1  | Worker with basic qualifications |
| Specific work activities  | • None |
| Requirements for professional skills | The required professional skills include in particular: • Implementation of installation, diagnostics, prophylaxis and repair of individual ICT devices, programs and systems |

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|  | • Installation of appropriate software and its basic configuration • Elimination of failures and accidents of individual ICT devices, programs and systems • Standard monitoring of the operation and safety of the entrusted systems • Detection of operating errors • Basic management of users of entrusted systems • Creating applications under professional guidance • Keeping and maintaining documentation of assigned systems |
| IT specialist 2  | A worker with higher qualifications |
| Specific work activities  | Specific work activities also include in particular: • Performing technical maintenance of entrusted systems and equipment • Coordinating service and maintenance • Optimization of spare parts stocks and their coordination with suppliers • Design of development and innovation, ensuring the selection, testing, deployment and operation of suitable systems • Designing the effective use of operated systems • Determining the methods of data protection and their backup • Programming in the appropriate programming language based on analytical documentation, testing the results • Keeping the relevant documentation |

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| Requirements for professional skills | The required professional skills also include in particular: • Independent management of complex systems entrusted to the administration • Design and elaboration of hardware studies and technical analyzes of solved problems • Proposals and design of expanding the portfolio of managed systems and creating proposals for innovation of existing ones • Management of testing and operability of entrusted systems and their components • Management and training of team members • Keeping and maintaining relevant documentation • Maintenance and optimization of the created software and relevant design documentation • Ensuring the implementation of special requirements • Managing the implementation of developed solutions, including harmonization with the user environment |
| IT specialist 3  | Highly qualified worker |
| Specific work activities  | Specific work activities also include in particular: • Analysis of processes, legislative and technical conditions, technical information for forecasting possibilities of improvement in the solved area and user requirements • Optimization of the use of information technologies, including system settings in terms of hardware-software binding |

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|  | • Design and elaboration of hardware studies and technical analyzes of problems of complex information technology systems• Coordination of service and maintenance of operated systems • Solution of non-standard operating situations and their consultation with users and suppliers, identification of errors and faults • Planning changes in infrastructure, testing new configurations and technologies • Keeping documentation of operational activities, resources, infrastructure and processes of critical systems |
| Requirements for professional skills | The required professional skills also include: • Analysis and design of complex tasks in relation to the system and user environment • Management of the implementation of the proposed ICT tools, including harmonization with the user environment • Optimization of system performance and coordination of user access to all their components • Carrying out prophylaxis and diagnostics, troubleshooting malfunctions and accidents of components of operated systems • Troubleshooting of critical system components |

**"IT ANALYST" profile**

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| Basic characteristics (Subject of work) | An information technology analyst analyzes, documents and proposes the optimization (or improvement and automation) of processes in the context of information and communication technologies. |
| Basic work activities  | The basic activities of the ANALYST profile include in particular: • Processing of logical and structural diagrams of applications • Creating data and object structures and defining their relationships • Creating a user interface for software applications based on user requirements • Creating analytical documentation • Processing of documents for user documentation |
| IT Analyst 1  | Worker with basic qualifications |
| Specific work activities  | • None |
| Requirements for professional skills | The required professional skills include in particular: • Understanding of analytical documentation and requirements• Ability of quick orientation in business processes from the customer's field • Preparation of a report on the project and its presentation • Collaboration in a training of users of designed applications |
| IT Analyst 2  | A worker with higher qualifications |
| Specific work activities  | Specific work activities also include in particular: • Preparation of the documentation structure |

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|  | • Analysis, design, documentation, standardization and process optimization, including identification of critical points • Analysis of user requirements • Monitoring trends, standards and legal requirements • Information system quality management in the context of used standards |
| Requirements for professional skills | The required professional skills also include in particular: • Methodical goal setting • Implementation of consulting services and methodical management of application users • Creating a formal specification of software system models • Creating an analytical and logical/physical model of the system • Using methodology and modeling tools information flows, interfaces, users (UML, CASE tools) |

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| IT Analyst 3  | Highly qualified worker |
| Specific work activities  | Specific work activities also include in particular: • Cooperation in the design and implementation of architecture (business model, supply chain, business processes, organizational structure, responsibilities/competencies) • Cooperation in the specification of the requirements of integration tasks • Cooperation in the analysis of IS/ICT risks, providing documents for management of the continuity of the organization's activities in the event of an IS/ICT failure • Testing of proposed solutions |
| Requirements for professional skills | The required professional skills also include in particular: • Cooperation in assessing the innovation and development processes of the organization within its overall management • Elaborating the impact of strategic plans and visionsinformation technology in managing operationsof the organization's information systems• Orientation in IT legislation |

**“IT ARCHITECT” profile**

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| Basic characteristics (Subject of work) | The architect of information technologies comprehensively determines the directions of technical development according to the conditions of software and system equipment and with regard to the needs of the organization. |
| Basic work activities  | The basic activities of the ARCHITECT profile include in particular: • Design and elaboration of studies and analyzes of problems of complex information technology systems • Analysis of processes, legislative and technical conditions and user requirements • Determining the work schedule in the field of management and development of information systems in the organization |

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|  | • Leading professional teams in the field of management and development of information systems in the organization • Ensuring optimal system settings in terms of hardware-software binding |
| IT Architect 1  | Worker with basic qualifications |
| Specific work activities  | Manages basic work activities under supervision  |
| Requirements for professional skills | The required professional skills include in particular: • Elaboration of parts of the concept of cooperation with other departments within the management and development of information systems in accordance with the needs of the organization to the specified extent • Cooperation on analyzes of the effectiveness of information systems, their reliability and performance, and cooperation on the subsequent elimination of deficiencies • Collaboration in the design and testing of procedures for increasing the efficiency of computer technology |
| IT Architect 2  | Highly qualified worker |
| Specific work activities  | Manages basic work activities independently  |
| Requirements for professional skills | The required professional skills include in particular: • Elaboration of the concept of cooperation with other departments within the management and development of information systems in accordance with needs of the organization • Analysis of the effectiveness of the information system, its reliability and performance and subsequent deficiencies removal• Coordinating complex processes, including selection and optimization of procedures and solutions • Designing and testing procedures for increasing the efficiency of computer resources |
| IT Architect 3  | Worker with the highest qualifications |
| Specific work activities  | Specific work activities also include in particular: • Analysis and monitoring of development trends in the field of information technology• Elaboration of new system requirements and concepts of the company in the field of management and development of information systems • Analysis of the efficiency of information systems, their reliability and performance, determining the development of systems and setting the parameters of their optimal operation • Developing strategic plans and visions for information technology in the management and operation of the information organization's system |
| Requirements for professional skills | The required professional skills also include in particular: • Manages all, even exceptional, performance requirements listed for the Architect independently |