

ANALYSIS OF LOGISTIC PROVISION OF REVISIONS FOR CENTRAL STATE ADMINISTRATION BODIES

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Abstract: The implementation of information system modules in the conditions of state administration requires extensive project solutions. It differs from the implementation in the enterprise environment mainly by the nature of meeting the legislative conditions. Each implementation project is individual, and when designing its creation, it is necessary to take into account the content of an individual organizational components of the Ministry of the Interior of the Slovak Republic. This contribution aims to define the basic communication requirements that are placed on the information system for the operation of reserved technical equipment in the conditions of the Ministry of the Interior of the Slovak Republic. Knowledge of these requirements will allow setting the functionality of the information system for the operation of reserved technical equipment. The findings of the article and their application will save 20 - 40% of the total time, which will be appropriate to use to save on human resources or improve the activities of individual employees in the field of BOZP (occupational safety and health), operation of buildings, labour inspection. With proper predictive maintenance, the goal of reducing costs by 20% for individual more complex repairs, which are caused by neglect or omission of regular service, can be achieved. The application of research findings will have an impact on the reduction of accidents, accidents with long-term consequences or deaths caused by improper operation of technical equipment. The findings are appropriate to apply to employers with a number of facilities greater than 20.

1 Introduction

After the reform of the ESO, which was implemented by the Ministry of the Interior of the Slovak Republic, the provision of services in the area of professional inspections, professional tests and official tests was centralized. The centralization of procurement and subsequent implementation of services has brought a unified approach, which requires increased demands on central management. This requires tremendous dynamism in solving everyday tasks. As the largest employer in Slovakia with more than 50,000 employees located in buildings throughout Slovakia, the Ministry of the Interior of the Slovak Republic needs to ensure the reliable operation of individual reserved technical equipment. For facility operators who operate a larger number of facilities, it is important to know individual technical and reserved technical equipment and their individual parts. It is important to have their life cycle and all the activities performed within them documented and to evaluate the individual data gradually. In the economic operation of reserved technical equipment, it is important to know the investment costs of purchasing new equipment and the profitability of the operation of existing equipment. Not only energy costs but also service costs can be included in profitability. Service costs can be eliminated by properly knowing the data of the relevant technical equipment and preventing fictitious repairs carried out by unethical service suppliers. Many facility operators are in the pre-preparation phase of the implementation of the informatization of the system of operation of reserved technical equipment. This article will give the reader a

concrete idea, which can be adapted to the operation of a smaller number of facilities, with a lower number of reserved and other technical equipment. The fulfilment of legislative obligations in the area of operation of reserved technical equipment must not be understood only as a formal fulfilment but as a way of ensuring the perfect technical condition of the relevant equipment. The main condition is to ensure occupational safety and health. The whole process of providing the services of professional inspections, professional tests and official tests requires perfect synchronization of individual steps. Manual monitoring of deadlines by individual security technicians located within the regions of Slovakia contributes to their burden. The most appropriate way seems to be to use the information system. The information system for the provision of professional inspections, professional tests and official tests is required to ensure comprehensive management of the operation of reserved technical equipment throughout Slovakia. In this article, we will deal only with the management of the information system for the operation of reserved technical equipment, which we consider to be a subsystem of the comprehensive information system of the Ministry of the Interior of the Slovak Republic.

2 Possibilities of software solutions for operation by operation of technical equipment

Today, there are a number of software solutions and applications that streamline various processes in

ANALYSIS OF LOGISTIC PROVISION OF REVISIONS FOR CENTRAL STATE ADMINISTRATION BODIES
Marián Dřeš

companies. Each company is individual in its activity. In the field of occupational safety and health, uniform legislation contributes to the unification of activities, which exhaustively defines the obligations of facility operators. There are currently a number of software applications that include common requirements for enterprise information systems. SAP offers an integrated set of applications that support your end-to-end enterprise processes and help manage every part of your organization - employees, customers, products, expenses, finance and IT [1].

The implementation of a wide range of ERP systems in enterprises will cause significant changes in their operation and planning, organization and management of supplier processes. Adherence to the correct course of the implementation process will guarantee the integration of the information system from enterprises.

The SAP information system is mainly adapted to their specific conditions in various enterprises and state organizations, but the implementation process itself takes place uniformly according to the ASAP methodology in five phases:

- a) Phase no. 1. Project preparations,
- b) Phase no. 2 Target concept,
- c) Phase no. 3 Realizations,
- d) Phase no. 4. Preparation of a productive barrier,
- e) Phase no. 5. Start of productive operation and support [2].

In this article, we will deal with the analysis of information system requirements. Requirements should be identified in the project preparation. Without their correct identification, process problems may occur in the next phases according to the ASAP methodology. Based on the requirements, we will re-evaluate which modules the information system should have at its disposal and what specifics the individual modules should take into account. The implementation of any ERP system represents a fundamental change in its functioning and organization of business processes. Only the correct course of the whole implementation process will guarantee the integration of IS with the enterprise [3].

The Ministry of the Interior of the Slovak Republic currently uses the services of the SAP system. Due to the number of buildings and the equipment of the buildings with a large number of reserved technical equipment, there is a need to adapt the individual SAP modules to individual requirements. The software should also take into account the individual differences of the individual organizations. The BTS software - Safety and Technical System, offered by the Besoft company, which has 20 years of experience in the field of occupational safety and health, is also known in the conditions of the Slovak Republic.

BTS software was created to simplify the work of its users. It was created on the basis of long-term experience and client requirements. Its structure consists of 14 modules. In its environment, it gathers valid legislative

regulations, sample documentation, instructions, procedures and methods. It provides various tools for keeping records of employees, technical equipment, tracking deadlines, notifications and the like. The advantages are solutions for the elaboration of risk analyses, a system for verifying employees' knowledge and record keeping [4].

We currently live in the time of Industry 4.0. To apply the visions and ideas of this German platform, it is necessary to transform society's current thinking into thinking 4.0. The use of innovative elements of the 4.0 platform creates preconditions for the application of perfect informatization of the provision of a complex process of operation of reserved technical equipment, including the provision of their professional inspections and professional tests.

Industrie 4.0 describes a fundamental process of innovation and transformation in industrial production. This transformation is driven by new forms of economic activity and work in global, digital ecosystems: today's rigid and strictly defined value chains are replaced by flexible, highly dynamic and globally connected value networks with new forms of cooperation[5].

Industry 4.0 creates new requirements, which are placed not only on the production of new equipment but also on the operation of technical equipment. The impact of Industry 4.0 is gradual, and its pace depends on the economic and technical maturity of individual countries. In the operation of technical and reserved technical equipment in the conditions of the Slovak Republic, the question of their effective management with the help of information technologies, which can be directly or with the help of IoT Internet networks, arises. The aim is to effectively manage the life cycle of individual technical and reserved technical equipment. In addition to the issue of providing professional inspections, professional tests, official tests in the life cycle, we include issues of regular maintenance, as well as issues of profitability of operation of existing equipment. When implementing management processes, it is appropriate to use ISO standards, which also include the area of occupational safety and health - ISO 45001: 2016.

Industry 4.0 envisages the creation of new links between technology, man and control systems in the application of the most powerful IT systems in order to ensure the flexibility of the production process so that its output is a product that takes into account customer requirements in a broader sense [6]. Changes that occur in the industry also affect occupational safety and health. The environment created by Industry 4.0 should be gradually transformed into a non-industrial environment during the operation of technical equipment in the field of maintenance and revisions.

The changes that have taken place in the industry are reflected in the high automation of processes. This trend is currently referred to as the new Industrial Revolution Industry 4.0 [7].

These changes also need to be transformed into the automation of processes related to the provision of services of professional inspections, professional tests or official tests as well as maintenance services. An important condition is to take into account the activities and the different environment in which we provide.

Organizations operate in different environments, have different "patterns of behaviour", different conditions within the operation (globalization), which is reflected in the form of so-called "Dynamic decision-making". It is important that this decision is based on data that allow the analysis of all threats affecting the achievement of the desired result (objectives) but also the chances - opportunities for new solutions [8].

The National Labor Inspectorate on Industry 4.0 states that we live in a rapidly changing time, which we consider to be the beginning of a technological revolution. It sees this revolution as a consequence of the natural development of mankind. We recognize that the impact of Industry 4.0 is fundamentally changing the way of life in all areas. It points out that the response of state bodies must also be comprehensive, rapid and intelligent. It points to the importance of speed, flexibility and the ability to adapt to changing conditions and working environments [9].

Obtaining real-time information generated systematically through traceability technologies has been one of the key factors in the digital transformation of the industry, fostering global competition and EU supply chain innovation. [10,11]

In the manufacturing sector, it is where technology-based applications mainly allow companies to stay and position themselves in increasingly competitive markets, providing innovative solutions to the different challenges they face throughout the supply chain. [12]

Although the operation of reserved technical equipment does not directly affect the industry, it is important to make active use of elements of the logistic provision in the industry. The knowledge can be used to increase the efficiency of supply provision of services within the competence of the Ministry of the Interior of the Slovak Republic.

The issue of providing professional inspections, professional tests, official tests should be implemented with the idea of Industry 4.0. At present, there are a number of software solutions for the comprehensive provision of occupational safety and health (BOZP), but there is a need to adapt them to the conditions of the Ministry of the Interior of the Slovak Republic. When designing software solutions, the predictions of the development of Industry 4.0 in relation to the life cycle of technical and reserved technical equipment should be taken into account.

3 Basic legislative conditions for the operation of reserved technical equipment

The use of individual buildings is conditioned by the fulfilment of individual legislative conditions. These legislative conditions also include conditions arising from Act no. 124/2006 Coll. on occupational safety and health and on the amendment of certain laws as amended [13]. This law exhaustively determines the conditions for the safety of persons. The purpose is to ensure the protection of life and health of persons. Based on the implemented decree of the Ministry of Labor, Social Affairs and Family of the Slovak Republic no. 508/2009 Coll., which lays down details for ensuring occupational safety and health with technical pressure, lifting, electrical and gas equipment, and which lays down technical equipment, which is considered to be reserved technical equipment (VTZ), we know the employer's obligations in the operation of technical equipment [14].

In this article, we will deal with fulfilling the legislative conditions of safety of reserved technical equipment from the employer's point of view and his working environment. The conditions also apply to ordinary natural persons and households.

The individual reserved technical equipment is divided into [14]:

- a) Pressure equipment of groups A, B, C. The exact qualification can be found in Annex no. 1 [14].
- b) Lifting equipment of groups A, B, C. The exact qualification can be found in Annex no. 1 [14].
- c) Electrical equipment A, B, C. The exact qualification can be found in Annex no. 1 [14].
- d) Gas equipment A, B, C. The exact qualification can be found in Annex no. 1 [14].

At the Ministry of the Interior of the Slovak Republic, the operators of facilities [15] are:

- a) Section of the economy,
- b) Support Center Bratislava,
- c) Support Center Trnava,
- d) Support Center Nitra,
- e) Support Center Trenčín,
- f) Support Center Banská Bystrica,
- g) Support Center Žilina,
- h) Support Center Košice,
- i) Support Center Prešov.

The security technician and the operator of individual reserved technical equipment is obliged to know which reserved technical equipment is operated, who is authorized to perform a professional inspection, professional test and official test. Also, who is authorized to operate and repair individual reserved technical equipment? The operator is obliged to record this obligatory knowledge. He is also obliged to provide individual types of training and refresher training. Employers with a low number of employees, facilities, and buildings are a relatively simple matter. The problem occurs with a higher number of facilities and employees. As we have already mentioned, the Ministry of the Interior

ANALYSIS OF LOGISTIC PROVISION OF REVISIONS FOR CENTRAL STATE ADMINISTRATION BODIES
Marián Dřeš

of the Slovak Republic is the largest employer in Slovakia, it also has the largest number of facilities and buildings in the Slovak Republic. It is important to draw attention to the fact that the provision of services from external suppliers is part of the public procurement process, which is regulated by the Public Procurement Act no. 343/2015 Coll. on Public Procurement and on Amendments to Certain Acts [16]. Individual central state administration bodies are obliged to carry out public procurement before ordering individual services in the manner prescribed by legislation. Otherwise, they would break the law, or such action could have criminal consequences. Based on the above, it is important that individual state administration bodies have comprehensive records of reserved technical equipment when performing public procurement. The use of personal protective equipment is an essential part of protecting the life and health of employees. Obligations of the employer follow the legislation. According to the Regulation of the Government of the Slovak Republic no. 395/2006 Coll. on the minimum requirements for the provision and use of personal protective equipment, personal protective equipment is any equipment worn, held or otherwise used by an employee at work, including its accessories, if it is intended to protect the safety and health of the employee. [17]. For this reason, a thorough record is needed, which is necessary for the entire life cycle of personal protective equipment. For the application of the above regulation to the conditions of the Ministry of the Interior of the Slovak Republic, the regulation of the Ministry of the Interior of the Slovak Republic no. 53 on the provision and use of personal protective equipment is developed [18]. This regulation regulates the procedure of specific managers and the commodity centre in connection with the provision of personal protective equipment for employees of the Ministry of the Interior of the Slovak Republic. A basic internal organizational regulation solves the division of responsibilities and tasks of individual departments of the Ministry of the Interior of the Slovak Republic, and thus is the Regulation of the Ministry of the Interior of the Slovak Republic no. 39 on the organizational rules of the Ministry of the Interior of the Slovak Republic [19].

4 Methodology

Our goal will be to perform an analysis of the current state of logistic provision - Analysis of the services of

professional inspections, professional tests and official tests in the conditions of the Ministry of the Interior of the Slovak Republic. Based on the performed analysis, we will propose the basic requirements that will be placed on the information system of logistic provision and control of professional inspections, professional tests and official tests.

The individual support centers and their organizational participation - real estate departments - are responsible for the operation of the reserved technical equipment. Through occupational health and safety (BOZP) and fire protection (PO) technicians, they send to the commodity center, which has the competence to issue orders for professional inspections (OP), professional tests (OS), repeated official tests (OUS). Based on the issued order, the service provider shall ensure the execution of the OP, OS, OUS and inform the operator and the safety technician about the results of the OP, OS, OUS. The facility operator confirms to the supplier the execution of the action of OP, OS, OUS. The following are the processes for performing an invoicing operation.

Table no. 1 shows the format of keeping the prescribed records of reserved technical gas equipment, which is registered by individual operators as well as BOZP and PO technicians. Its colour code is yellow. The individual prescribed data comply with legislative requirements [14]. They contain identification data such as the city, the street as well as the designation of the organizational unit of the location of the reserved technical gas equipment (VTZ-PL). The next part is specific data on reserved technical gas equipment, based on its classification according to legislative requirements [14]. Mandatory data are the name and type of reserved technical gas equipment, serial number, year of manufacture, power. Power Nm³ / h, power in kW, maximum operating pressure in [MPa], Group. In the next part, the interval of OUS, OP, OS is determined. Based on the determination of the date of the last OUS, OP, OS and the interval of OUS, OP, OS, the table uses the function to recalculate the subsequent OUS, OP, OS, and validity date of OUS, OP and OS in days. If the OUS, OP, OS is after the term of the validity end, the data in days is given in a negative statement. Based on the execution of OUS, OP, OS, the state of VTZ after OUS, OP, OS is recorded.

ANALYSIS OF LOGISTIC PROVISION OF REVISIONS FOR CENTRAL STATE ADMINISTRATION BODIES
 Marián Dřeš

Table 1 Records of reserved technical equipment - gas

Location data of VTZ - PL	Data on VTZ - PL							Interval of OP, OS and US in months			Date of the last OUS, OP and OS			Date of subsequent OUS, OP and OS			Validity of OUS, OP and OS in days			State of VTZ - PL after revision	Notes
								OUS	OP	OS	OUS	OP	OS	OUS	OP	OS	OUS	OP	OS	OZP - decommissioned	
City	Street	Name of VTZ - PL	Type of VTZ - PL	Serial number	Year of manufacture	Power Nm3/h	Power in kW	max. oper. pressure in [MPa]	Group	OUS	OP	OS	OUS	OP	OS	OUS	OP	OS	SBP - capable of safe oper. NBP - incapable of safe oper. OZP - decommissioned		

Source: The Ministry of the Interior of the Slovak Republic

Table no. 2 shows the format of keeping the prescribed records of reserved technical pressure equipment, which is registered by individual operators as well as BOZP and PO technicians. Its colour code is blue. The individual prescribed data comply with legislative requirements [14]. They contain identification data such as the city, the street, and the designation of the organizational unit of the location of the reserved technical pressure equipment (VTZ-TL). The next part is specific data on reserved technical pressure equipment, based on its classification according to legislation [14]. Mandatory data are name and type of reserved technical pressure equipment, serial

number, year of manufacture, Volume in l, maximum operating pressure in [MPa], Safety factor (Vxp), Group. In the next part, the interval of OUS, repeated external inspection (OVP), external inspection (VP), pressure test (TS) is determined. Based on the determination of the date of the last OUS, OVP, VP, TS and the interval of OUS, OVP, VP, TS, the table uses the function to recalculate the date of the next OUS, OVP, VP, TS and the validity of OUS, OVP, VP, TS in days. If the OUS, OVP, VP, TS is after the term of the validity end, the data in days is given in a negative statement. Based on the execution of OUS, OVP, VP, TS, the state of VTZ after OUS, OVP, VP, TS is recorded.

Table 2 Records of reserved technical equipment - pressure

Location data of VTZ - TL	Data on VTZ - TL							Interval of TS,VP,OVP and OUS in months			Date of the last TS,VP,OVP and OUS			Date of subsequent TS,VP,OVP and OUS			Validity of TS,VP,OVP and OUS in days			State of VTZ - TL after revision	Notes		
								OUS	OVP	VP	TS	OUS	OVP	VP	TS	OUS	OVP	VP	TS	OZP - odstavené z prev.			
City	Street	Name of VTZ - TL	Type of VTZ - TL	Serial number	Year of manufacture	Volume in [l]	max. oper. pressure in [MPa]	Safety factor (Vxp)	Group	OUS	OVP	VP	TS	OUS	OVP	VP	TS	OUS	OVP	VP	TS	SBP - capable of safe oper. NBP - incapable of safe oper. OZP - odstavené z prev.	

Source: The Ministry of the Interior of the Slovak Republic

Table 3 shows the format of keeping the prescribed records of reserved technical electrical equipment, which is registered by individual operators as well as BOZP and PO technicians. Its colour code is green. The individual prescribed data comply with legislative requirements [14].

They contain identification data such as the city, the street, and the designation of the organizational unit of the location of the reserved technical electrical equipment (VTZ-EL). The next part is specific data on the reserved technical electrical equipment, based on its classification

ANALYSIS OF LOGISTIC PROVISION OF REVISIONS FOR CENTRAL STATE ADMINISTRATION BODIES
 Marián Dřeš

according to the prescribed legislation [14]. Mandatory data are name and type of reserved technical electrical equipment, number of electrical circuits, number of lightning conductor leads, power (kW), external influence, Group. In the next part, the interval of OUS, OP, OS is determined. Based on the determination of the date of the last OUS, OP, OS and the interval of OUS, OP, OS, the

table uses the function to recalculate the date of the next OUS, OP, OS and the validity of OUS, OP and OS in days. If the OUS, OP, OS is after the term of the validity end, the data in days is given in a negative statement. Based on the execution of OUS, OP, OS, the state of VTZ after OUS, OP, OS is recorded.

Table 3 Records of reserved technical equipment – electrical

Location data of VTZ - EL		Data on VTZ - EL						Interval of OUS, OP and OS		Date of the last OUS, OP and OS			Date of subsequent OUS, OP and OS			Validity of OUS, OP and OS		State of VTZ - EL after revision	Notes
City	Street	Name of VTZ - EL	Type of VTZ - EL	Number of el. circuits	Number of lightning conductor leads	Power (kW)	External influence	Group	OUS	OP and OS	OUS	OP and OS	OUS	OP and OS	OUS	OP	OS	OZP - decommissioned	SBP - capable of safe oper. NBP - incapable of safe oper.

Source: The Ministry of the Interior of the Slovak Republic

Table 4 shows the format of keeping the prescribed records of reserved technical lifting equipment, which is registered by individual operators as well as BOZP and PO technicians. Its colour code is grey. The individual prescribed data comply with legislative requirements [14]. They contain identification data such as the city, the street as well as the designation of the organizational unit of the location of the reserved technical lifting equipment (VTZ-ZD). The next part is specific data on the reserved technical lifting equipment, based on its classification according to the prescribed legislation [14]. Mandatory data are name

and type of reserved technical lifting equipment, serial number, year of manufacture, Group. In the next part, the interval of OUS, OP, OS is determined. Based on the determination of the date of the last OUS, OP, OS and the interval of OUS, OP, OS, the table uses the function to recalculate the next OUS, OP, OS, and validity date of OUS, OP and OS in days. If the OUS, OP, OS is after the term of the validity end, the data in days is given in a negative statement. Based on the execution of OUS, OP, OS, the state of VTZ after OUS, OP, OS is recorded.

Table 4 Records of reserved technical equipment – lifting

Location data of VTZ - ZD		Data on VTZ - ZD				Interval of OUS, OP and OS in months			Date of the last OP and OS			Date of subsequent OP and OS			Validity of OP and OS in days			State of VTZ - ZD after revision	Notes	
City	Street	Name of VTZ - ZD	Type of VTZ - ZD	Serial number	Year of manufacture	Group	OUS	OP	OS	OUS	OP	OS	OUS	OP	OS	OUS	OP	OS	OZP - decommissioned	SBP - capable of safe oper. NBP - incapable of safe oper.

Source: The Ministry of the Interior of the Slovak Republic

5 Result and discussion

Based on the performed analysis and comparison with the Decree [14], we found that the records of reserved technical equipment are prepared to contain all the necessary data for the security and technical service and the facility operator. It is also suitable to use this data for labour inspection. Records of reserved technical equipment are kept specifically for individual groups of reserved technical equipment. The tables are prepared using Microsoft Excel spreadsheet software. The shortcoming is the difficult communication between the supplier company, ensuring the performance of the OP, OS, OUS and the operator and individual BOZP technicians.

The use of the information system for the operation of the entire life cycle of individual reserved technical equipment appears to be an ideal model of the solution. The architecture and functional settings of the system should allow the implementation to enter the necessary data already directly to the facility operators and the supplier company. After the purchase and installation, the operator will ensure the registration of technical and reserved technical equipment in the information system. Subsequently, the system will recognize individual deadlines according to groups of reserved technical equipment. At the end of the life cycle, the inclusion and decommissioning of the equipment will ensure the registration of the equipment, while the decommissioning protocol will be entered into the information system for the purposes of registering to the archive.

The current supplier security system does not allow this. The data is entered into the tables by the operator or BOZP technician on the basis of a report from the OP, OS and OUS.

The advantage of entering data directly by the supplier company as well as from the scanned report on OP, OS, OUS is that it will provide the operators with automatic feedback. Direct feedback is important for urgent action in the event that deficiencies or serious deficiencies are identified. In the event of serious deficiencies, the system would automatically shut down the reserved technical equipment. In the event of serious technical deficiencies, this measure is necessary to protect the life and health of persons as well as the protection of property. The above information and instructions for the implementation of necessary and urgent measures are important, especially for the facility operator. They are also important for BOZP technicians and labour inspection bodies. Based on the list of exact deficiencies, the operator has the opportunity to urgently ensure the issuance of an order to eliminate deficiencies. It is also suitable if the system allows the storage of data on individual deficiencies of the reserved technical equipment as well as the financial costs of their elimination. The above data are needed to evaluate the

profitability of the operation of the equipment and the decision to invest in new technical equipment.

Another requirement for the information system is to allow the labour inspection body to make changes to the system, especially in connection with the ordered measure for the protection of life, health and property.

Information flows (Figure 1) of individual actors of the information system:

Operators inputs: registration of reserved technical equipment, orders for the performance of OP, OS, OUS, orders for the performance of service and maintenance, shutdown of equipment, exclusion of equipment from the information system.

Operators outputs: information on performed OP, OS, OUS, instructions and regulations of the labour inspection body, performance of BTS from the BOZP technician, information on performed service, maintenance and condition of the equipment after service and maintenance. Report from the OP, OS OUS, instructions in case of finding deficiencies and serious deficiencies. Information on the inspection of professional competencies of revision technicians, authorized legal entities, and persons ensuring the operation of the reserved technical equipment.

Labour inspection body inputs: instructions and regulations to ensure the safe operation of the equipment. Information on the inspection of professional competencies of revision technicians, authorized legal entities and persons ensuring the operation of the reserved technical equipment.

Labour inspection body outputs comprehensive information on reserved technical equipment.

BOZP technicians inputs: performance of the activity of BOZP technician

BOZP technicians outputs: comprehensive information on reserved technical equipment. Information on the inspection of professional competencies of revision technicians, authorized legal entities and persons ensuring the operation of the reserved technical equipment.

Supplier companies providing service and maintenance inputs: information on the performed service, maintenance and condition of the equipment after service and maintenance.

Supplier companies providing service and maintenance outputs: report from the OP, OS OUS, instructions in case of finding deficiencies and serious deficiencies, order for the performance of service and maintenance.

Supplier companies providing OP, OS, OUS inputs: report on OP, OS OUS, instructions in case of finding deficiencies and serious deficiencies.

Supplier companies providing OP, OS, OUS outputs: order for the performance of OP, OS, OUS.

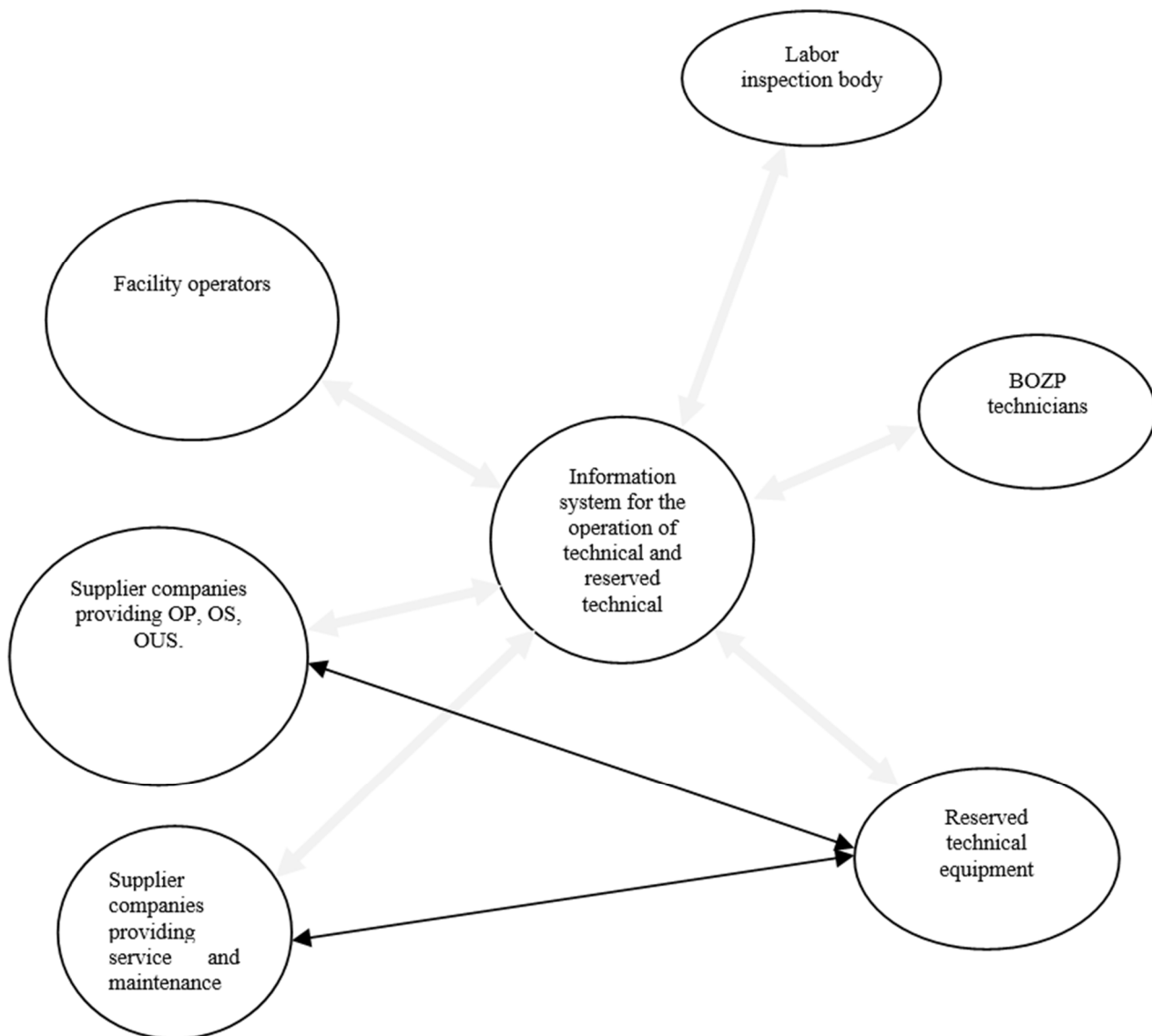


Figure 1 Logistics flow

The current state of individual reserved equipment does not allow their mutual communication. Their exchange for modern ones is gradual. The information system design that will manage the life cycle of individual reserved technical equipment should predict in advance the basic functional requirements of individual reserved technical equipment.

A new problem that will need to be solved in the future is the setting up of education and practice of the revision technicians themselves or authorized legal entities performing OP, OS and OUS. Modern types of reserved technical equipment controlled by artificial intelligence will require specific knowledge and experience of specialists.

6 Conclusions

The information system of logistic provision of the supplier method of OP, OS, OUS has its justification and brings time savings and the seamless transfer of information between individual actors in the field of occupational safety and health and labour inspection. The new innovative conditions brought by the time of Industry 4.0 need to be seen in the context of industry and other areas of life. We necessarily include the area of operation of individual technical equipment among these areas. The new reserved technical equipment will include 4.0 technologies. Therefore, the performance of individual processes, which facility operators will provide, must be coordinated based on current legislative requirements. The current provision method, which we analyzed in this article, meets the legislative requirements, but it is difficult to communicate between individual responsible

ANALYSIS OF LOGISTIC PROVISION OF REVISIONS FOR CENTRAL STATE ADMINISTRATION BODIES
Marián Dřeš

employees. Coordination of activities using the information system will simplify and clarify individual logistic communication flows. It will enable individual responsible employees to perform activities in the field environment. Also the performance of urgent and non-repeatable actions in case of unsatisfactory technical condition or emergency condition of operated technical equipment. These solutions can also be used in enterprises that have larger numbers of buildings and employees. The application of ideas and theories arising from the Industry 4.0 concept requires a high level of knowledge, experience, skills and willingness to promote them. Therefore, the application of informatization in the process of operation of reserved and other technical equipment will require a gradual process of introducing the ideas and theories of Industry 4.0. The article points out the elimination of imperfections and negligence that can be caused by the human factor itself. This has a direct impact on the protection of people's lives and health. The article also points to the effective saving of human resources, as manual human activities will be replaced by the functions of the information system. The advantage is relieving employees from activities and their possibility of targeted work in field conditions during direct operation of technical equipment. When applying the knowledge, there will also be savings in postal and transport costs. Gradual application of knowledge in the operation of technical equipment using information systems will lead to changes in the current paradigms of operation and, last but not least, will have an impact on reducing operating costs.

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Review process

Single-blind peer review process.