

CONCEPTS OF ELECTRONIC SIGNATURE AND ONLINE TRAINING IN THE OCCUPATIONAL SAFETY AND HEALTH

COTICI Olimpia Raluca, BUCURESCU Catalina Mihaela

Faculty: Faculty of Industrial Engineering and Robotics, Specialty: Safety and Health in Work Engineering, Year: Master I, e-mail: raluca.cotici@yahoo.com, catalinaabucurescu@gmail.com
Scientific leader: Prof. dr.ing Oana Roxana CHIVU, Sl. dr.ing. Marilena GHEORGHE

SUMMARY: The current health crisis has amplified the digitalization process. In this context of remote work, many companies have or wish to use the electronic signature and they also implemented online training through the e-learning platform. Digitization can rapidly change the world of work and the digital work platforms create opportunities for workers and employers and also challenge, new and updated solutions for occupational safety and health (OSH). In order to create a modern image that respects the environment, the electronic signature saves ink and paper and increases profitability. As well, this concept gives us better security regarding the following aspects : the identification of the interlocutors is confirmed, reduces the risk of falsification, missing documents, loss of information. So, it saves us paper, time and make our job much easier.

The electronic signature of a document has the same legal value as a handwritten signature. Digitization is the key to optimizing work processes, managing work-related risk, protecting health and improving productivity.

KEY WORDS: Digitalisation, strategy, digital platform, electronic signature, online training

1. Introduction

This study addresses an important issue, namely the implementation of digitization in certain areas of activity, and employees need to be sufficiently and adequately trained in terms of Occupational Safety and Health.

In order to move towards this technology of the future, many projects are underway at both European and national level, based on a well-defined legislative framework that allows for the sound management and ease of implementation of two concepts of a major interest: electronic signature and online employee training.

Thus, in Romania, in 2020, the (governmental) Authority for the Digitization of Romania (ADR) was established.



The e-signature development initiative can be found in the European eIDAS Regulation: "Electronic IDentification, Authentication and Trust Services (eIDAS) is a European regulation on electronic identification and trust services for electronic transactions in the European single market. It was established by EU Regulation 910/2014 of 23 July 2014 on electronic identification and repeals Directive 1999/93 / EC of 13 December 1999. "

(*) Regulation n° 910/2014 of July 23, 2014

By Government Emergency Ordinance no. 36/2021 (GEO no. 36/2021) introduced the possibility of using the advanced electronic signature or the qualified electronic signature, accompanied by the electronic time stamp or qualified electronic time stamp and the qualified electronic seal of the employer in the field of labor relations, and for amending and supplementing some normative acts.

It is also specified the possibility to prove the training in the field of occupational safety and health, in electronic format or on paper, depending on the method chosen by the employer and established by the internal regulations.

The EU's strategic framework governing OSH activities in the field of digitalisation has been under way since 2014 and the achievement of the objectives is set to run until 2027.

Challenges for the future of occupational safety and health (OSH):

- Communication from the Commission to the European Council "A strong and social Europe for just transitions" of 14 January 2020 entitled 'A strong and social Europe for just transitions'
- Communication from the Commission to the European Council (Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee) "Artificial Intelligence for Europe" COM (2018) 237 - Communication from the Commission to the European Parliament, the European Council, The Council, The European economic and social Committee and the Committee of the regions 'Artificial Intelligence for Europe'.
- EU-OSHA's Safe and Healthy Jobs Campaign entitled 'Safe and Healthy Jobs in the Digital Age', 2023-2025, raises awareness of digitalisation and occupational safety and health and raises awareness available more practical resources.

The healthy jobs campaign in the context of digitalization and all these projects include the premises of an advanced robotics (robot-worker interaction), new forms of worker management based on AI systems - algorithms, occupational analysis, remote work (policies and regulations in field), new monitoring systems for worker safety and health, etc.



2. Statistics resulting from the provision of a respectful working environment adapted to teleworkers

An employee spends about 25% of his life at work (the period in which he is active on the labor market), so there is, statistically, a one in four chance that the ailments he suffers from will be related to his professional activity.

Taking into account the situation generated by the Covid-19 pandemic context, many organizations have implemented sustainability strategies to adapt to the remote / online interaction format or the hybrid model - a mix of telework and office, training methods using digital platforms .

The main concern of some banking organizations, among which we discuss two of them, namely BRD Romania and the Société Générale Group, was to ensure the safety and health of all its employees and to ensure the continuity of activities.

In order to ensure a healthy life for employees, programs have been created, at the level of internal organization within the companies, namely: "Responsible Employer" Program, "Life at Work", which promotes quality of life, health and prevention, adequate work environment , identification of psycho-social risks, telework and new methods of organization.

Below are presented the real situations of work accidents, respectively occupational diseases registered in the period 2018-2021, within the banking companies mentioned above.

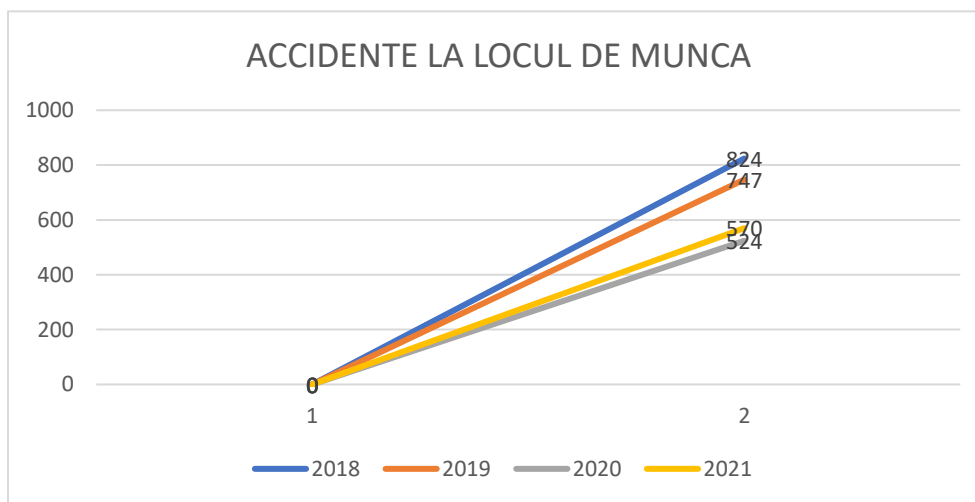


Fig. 1 [HEALTH AND SECURITY AT THE WORKPLACE - 2021 Report Grup Société Générale]

From the analysis of the data in Fig. 1 we can observe that:

- There is a considerable decrease in accidents at work from 2018 to 2020.
- In 2021, the number of accidents at work increased compared to 2020, which means that not all workers have acquired knowledge about the protection and prevention of health at work.

Tabel 1 - Work-related accidents – BRD Romania

Employee	U.M	2019	2020	2021
Deaths caused by work-related accidents	Number	0	0	0
Work related accidents with significant consequences (excluding deaths)	Number	14	8	2
Registered work accidents	Number	14	8	2
The main types of accidents at work	Text	bone fractures	bone fractures	bone fractures

Tabel 2 - Occupational diseases– BRD Romania

Employee	U.M	2019	2020	2021
Deaths due to occupational diseases	Number	0	0	0
Occupational diseases registered	Number	0	0	0
Main types of occupational diseases	Text	N/A	N/A	N/A

Analyzing the results in Table 1, it appears that the number of accidents at work has decreased from year to year.

There were also no deaths from these accidents, but the main type of accident each year was a fracture.

And in the case of occupational diseases, the statistics found in Table 2 show that there were no occupational diseases or deaths due to occupational diseases.

From these statistics, it can be deduced that:

- The implementation of the activities strictly respects the provisions of the Romanian Law no. 319/2006 and assesses the risk on the components of the work system.
- The assessments are performed by the specialists of the Internal Health and Safety Service, who are certified for the assessment of occupational risks through a specific postgraduate program authorized by the Romanian Ministry of Education, and the occupational health doctor.
- All employees have been and continue to be trained on health and safety risks related to jobs and what is the communication flow in case of accidents at work and occupational diseases. These training activities take place annually and may also include e-learning and face-to-face training. All employees are trained in occupational health and safety and on a regular basis - every six months for executive positions and every year for managers.
- A dedicated e-learning course related to health and safety at work is provided to all employees. Employees must take this e-learning course during working hours. After taking this e-learning course, the employee must go through an assessment that requires at least 70% correct answers.
- In addition, after training accidents, additional training courses are provided.



3. What is and how the digital platform work?

The digital platform is a complex process, a working tool that allows the generation and uploading of the necessary documentation to compile the personal file of the employee, to perform all the training provided by law.

To validate and give legal value to documents, we need an electronic signature. The platform is connected to various service providers qualified in this way. Electronic documents are only valid in the electronic environment.





Fig. 2 Interconnections on digital platform

The interface of the platform is intuitive and simple which gives us flexibility and time saved.

The steps for using it are as it follows:

- Connection
- Completing the profile
- Generating / Uploading documents
- Online training and testing of employees' knowledge
- Electronic signature

Thus, the information is organized, the documents are secured and everything is done with a single click.

Each employee easily logs into the system, always knows what courses he has taken and what percentage he has until he completes them.

The application sends notifications and informs you what to do (eg work medicine is not loaded), the revisal can be uploaded to the platform, the company organization chart can be made and to facilitate the work of HR, the employees' file can be structured - function groups , departments, specific documents for each employee.

Video conferencing can be created for training or because each employee has a registered email address, the employer generates and submits a training. The topics are selected and the instructions must be signed electronically by the employer before sending the form to the employees. By using this application, employees will be better trained.

The replacement of the classic environment with the digital one mainly aims, in addition to efficiency, to optimize costs and time, aspects analyzed in the table below:

Tabel 3 – [Training cost comparison]

	Classic training		Online training		
	Price (lei)	Unit	Price (lei)	Unit	Price (lei)
Time allocated for completing the training papers	24 lei / hour	6 min	2.4	1	0.4
Time spent on actual training	24 lei / hour	2 h	48	1	0.4
Materials used in training	2	1	2	0	0
Transport	2 lei / km	10 km	20	0	0
Cost of using the online platform	1 / employee	0	0	1	1
Electronic signature	0.4				1.2
Total Cost			72.4	3	

This table shows that the digitization of the OSH system, including online training of workers, is characterized by words such as flexibility, mobility, care and protection of the environment, economy of resources (material, financial and human), plus time savings, which results in cost and time efficiency for all parties involved.

4. Conclusions

As we move into the world of digitalization, the field of OSH cannot remain in the era of the pencil. This digital industrial revolution will focus on the benefits to companies and people. The main issues are improving connectivity, data security and developing a European cloud.

Workers must be aware of the risks to which they are exposed as a result of accidents at work and occupational diseases and make an effort to maintain their physical and mental integrity in this context and in the face of challenges, which can only be achieved through a continuous information and education process. However, the exchange of information and the dissemination of good practices, as well as guidance and control from ITM, should be encouraged.

The concept of telecommuting has become the focus of global attention because it has become a long-term solution, amplified by the Covid health crisis 19.

The European Strategic Framework on OSH also anticipates the possible negative effects of new technologies and changes in the organization of work on workers' safety and health.