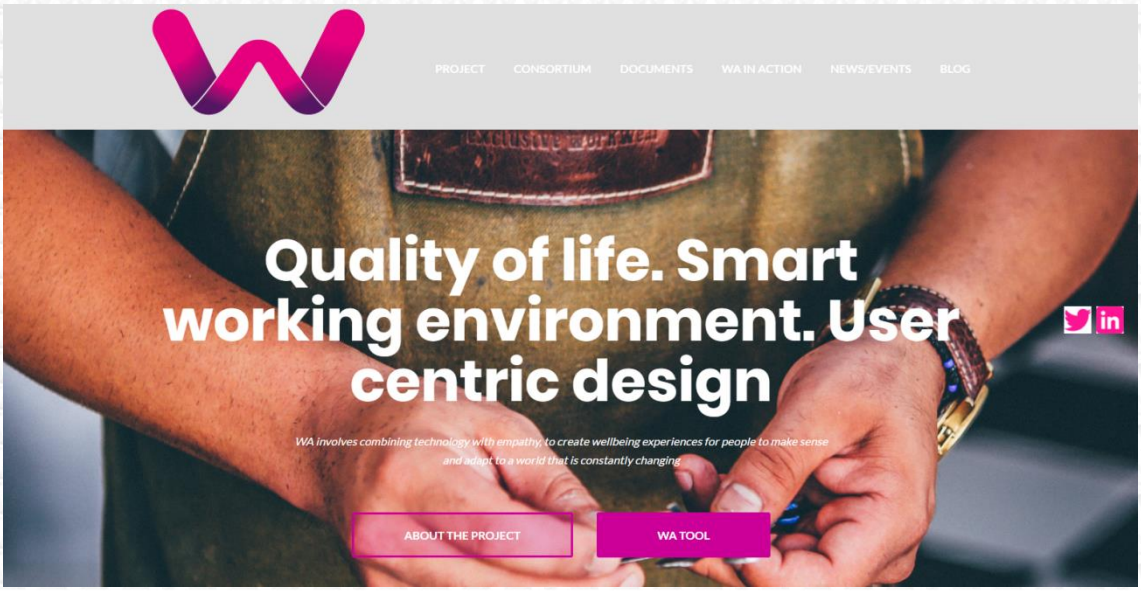


Welcome to the May 2021 WorkingAge Newsletter!

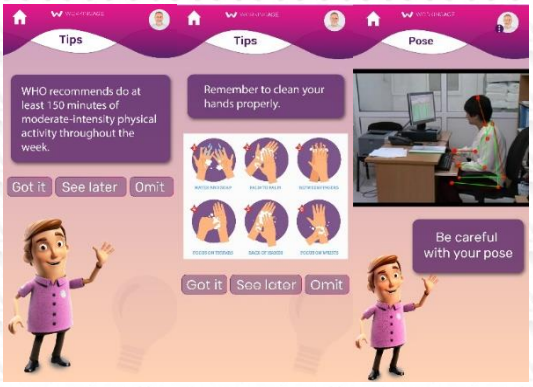
We hope you have enjoyed our two previous editions of the **WorkingAge** Newsletter. We are back with the third edition of the **WorkingAge** Newsletter, a project funded by the European Commission under Horizon 2020 programme. We would like to share the latest project news. We will also take a look at some of the exciting things we have coming up in the next few months.

Do you want to know more? Keep up to date on all project news ***@Workingage_EU*** and subscribe to the Newsletter so you never miss out.

Questions? Contact **info@workingage.eu**

Latest project news

WorkingAge of Well-being (WAOW) tool



The **WorkingAge** team has been working hard in recent months to complete the development of the **WorkingAge Of Well-being (WAOW) tool**. The **WAOW tool** aims at improving the health and well-being of people at work by supervising their working conditions and providing different types of advice through personalised technologies and friendly & intelligent human interfaces.

If you want to know more about the progresses of the **WAOW tool**, follow our social networks and our blog (https://www.workingage.eu/category/blog/), where **WorkingAge** periodically uploads information about the project.

New progress on the WAOW tool and main conclusions of the In-Lab tests

During the second half of 2020, the **In-Lab experimental phase** of the **WorkingAge** project has been completed. The In-lab studies aim to assess and evaluate the **WAOW system** through a proof-of-concept pilot test, centred on the users' expectations and usability features. The objective is to test the hardware and software to assess its **acceptability**, **feasibility**, **usability** and **validity**.

The laboratory tests, therefore, consist of different parts:

1. Survey of user acceptance of the hardware
2. Survey of the usability of the software
3. Survey on the implementation and structure of the interventions and suggestions given to a user
4. Validation of the sensors
   4.1. Posture recognition
   4.2. Gesture recognition
   4.3. Eye-Tracking
   4.4. Facial Affect Analysis
   4.5. Neurometrics
   4.6. Voice Analysis
   4.7. Location service
   4.8. E112 service
   4.9. Environmental Sensor

The aim of the **In-Lab tests** is to adapt the whole **WAOW tool** to the user and the context of use in the best possible way with regard to usability and acceptance in accordance with user-centred development. Furthermore, the studies aim to verify that the various modules are able to recognise and correctly assess the individual status of the users with regard to physical and psychological load, in order to be able to propose suitable recommendations based on this. For this purpose, various representative tasks were used to test the subsystems of software and hardware in the laboratory environment with the involvement of real users.

Such experiments were conducted in several European countries, corresponding to the partner's premises, challenging the difficulty of running experimental protocols during the COVID-19 pandemic.

In order to enlarge the experimental sample and reach a greater robustness of the experimental outcomes some in-lab studies related to the testing of the validity of the sensors were conducted using a joint test protocols.

The shared experimental protocol included three different tasks representative for the three different use cases within the **WorkingAge** project. Such tasks were selected to modulate the mental workload, stress, and emotional state of the participants, and to simulate the daily working activities whose will be carried out by the workers during the next experimental phases (**In-Company tests**) in realistic working environments.

The results of the **acceptance test** were positive. Overall users stated that they enjoyed the idea of the WAOW tool being implemented into their future work life and understand the importance of the tool. However, users articulated concerns about data protection and express concern about the possible disclosure of data to unauthorised persons. Data security is of course already an important aspect of the WAOW tool whereby data is only processed after consent based on the General

Data Protection Regulation. However, the results show that this has not been understood by the users, which is why an important component is now also the adequate and precise communication of the data protection regulations complied with in order to dispel concerns regarding data security.

The results of the **usability tests** regarding the App delivers mostly acceptable values, which underline that the basic concept of the app is accepted by the users and rated as usable. Since the concept was changed to an online survey, both younger and older people could be interviewed in different countries whereby good results were achieved for both age groups as well as for the different countries.

The **validity tests** could only be carried out to a limited extent due to the corona pandemic. However, we were able to carry out the validity tests and achieve important results for the further development of the tool through joint test protocols, as described above, and through additional literature researches to address missing aspects. Despite the difficult conditions, all **In-Lab tests** could be carried out and the results used for further development of the WAOW tool.

The **conclusions of the WorkingAge In-Lab tests** carried out helps to adapt the **WAOW tool** in the best possible way to user requirements within the framework of user-centred development.

Learn more

Innovation Radar

The **Body Pose Evaluation System** developed by ITCL in **WorkingAge** project has been included in **Innovation Radar Platform** of European Commission with the highest qualification "*High level of Market Creation Potential*".

The innovation, Virtual Reality tools to create a database with labelled synthetic images for training Convolutional Neural Networks, has been validated.

Learn more

EPR Online Conference 2020 – Embracing Digital Transformation: Inspiration and Innovation for Quality Services | September, 2020

The **EPR 2020 Conference** promoted by the European Platform for Rehabilitation (EPR) focused on addressing challenges and good practices in adopting digital transformation: inspiration and innovation for quality services.

Rosa Almeida from INTRAS presented the progress of the **WorkingAge** project and in the development of the WAOW tool, aimed at improving the quality of life of workers over 45 years of age in their work and personal environment, while ensuring privacy, security and ethics in its application.

Beyondwork2020: How can Artificial Emotional Intelligence Contribute to the Future of Work? | October, 2020

Beyondwork2020, a European conference hosted by the German federal ministry of education and research, orchestrate the research and development projects that are funded by the Federal Ministry of Education and Research (BMBF) within the framework of the program "Innovations for tomorrow's production, services and work" and European Social Fund (ESF) within the program "Future of Work."

Dr. Hatice Gunes from Cambridge University UK introduced the **WorkingAge** project and its goals, and how it has the potential to transform the future of work by providing personalized support to the employees.

Learn more

CARE 2020: Artificial Emotional Intelligence for Wellbeing | January, 2021

CARE 2020, an international Workshop on Pattern Recognition for positive teChnology And eldeRly wEllbeing (CARE 2020) was organized in conjunction with ICPR2020 – the 25th International Conference on Pattern Recognition, Milan, Italy, January 2021.

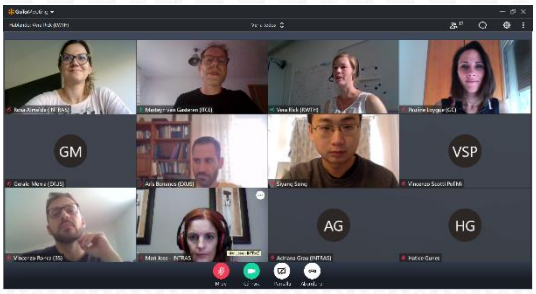
Dr. Hatice Gunes from Cambridge University UK presented the keynote talks highlighting the importance of Artificial Emotional Intelligence (AEI) for wellbeing and the role of Positive Technology in designing digital experience for positive change. Dr. Hatice Gunes concluded the talk by presenting the **WorkingAge** project and the aspects in the project that relates to AEI.

Learn more

Third consortium meeting of WorkingAge project in Aachen (Germany) | October, 2020

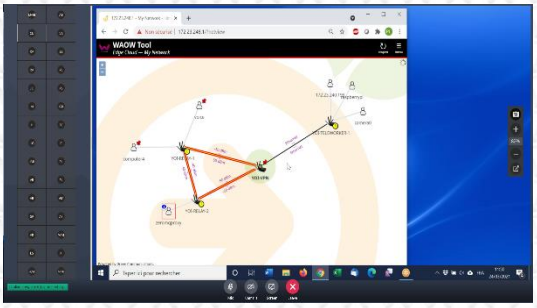
The **third consortium meeting** of **WorkingAge** project took place on line hosted by RWTH in Aachen (Germany), from October 7th to 8th, 2020.

During these two days of intense meetings, the project partners have focused on the **In-Lab experimental phase** of the **WorkingAge** project and how to adapt the **WAOW tool** in the best possible way to user requirements within the framework of user-centred development.



Fourth consortium meeting of WorkingAge project in Milan (Italy) | March, 2021

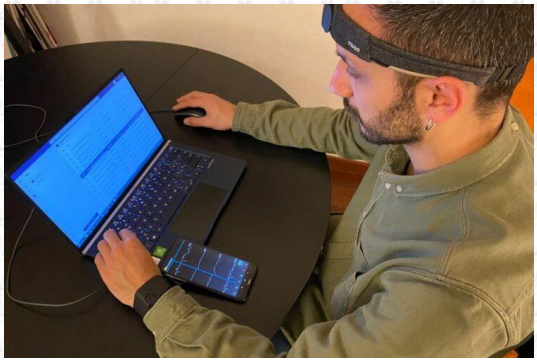
The **fourth consortium meeting** of **WorkingAge** project took place on line hosted by POLIMI in Milan (Italy), on March 24th, 2021.



During this meeting, the project partners have focused on the preparation of the pilot test (**In-Company tests**) and all partners have enjoyed a demonstration of the operation of the **WAOW tool**, which promotes the well-being and health of >45 years old workers.

Blogs from WorkingAge partners

Sensors integration for the In-Company phase: completed



The **WorkingAge** project is going to start the **In-Company tests**, the final experimental phase in which the **WAOW tool** will be daily used by workers along their standard working days.

The objective of this crucial step is to test the effectiveness and the reliability of different modules constituting the **WAOW tool**.

Learn more

Complete WAOW tool integration

In a recent blog post, the first steps of the integration of all components into the functional **WorkingAge** system were discussed. **WorkingAge** consortium efforts are now nearing completion, with the full range of sensors deployed in the home-office of a teleworker participant. The integration efforts are almost complete, with the first promising results on the overall system performance already obtained.

Learn more

How the WorkingAge project answers some of the COVID-19 pandemic highlighted challenges

Last year we face new challenges by the COVID-19 pandemic that required important adaptation in the **WorkingAge** project, and highlighted the need to invest in prevention, in promoting accessibility and person-centred digital solutions. In short, consensus on the need to move forward and invest in wellbeing and quality of life was widespread.

The COVID-19 pandemic has reinforced the importance of having resilient health and social services systems, and equipped with technological capability and knowledge to readily face similar situations.

Learn more

Next Generation 112

When an emergency alert is triggered, the **WAOW tool** initiates an emergency call and in parallel, the E112 service sends a message with the user location and other data from the **WorkingAge** sensors.

In this context, the emergency communication from the user to the emergency response call centre takes place in two communication channels, the voice channel for the emergency call and the data channel for the emergency message containing the data from the **WAOW tool**.

What if the existing internet-based communication protocols could be used to send the voice call and the associated data in one communication stream? This is described by the Next Generation 112 (NG112) architecture.

Learn more

Secondary and Tertiary Users of the WAOW tool

The **WorkingAge** project aims to support users to stay healthy at work and in everyday life. The focus is on employees using the tool to learn healthy habits with the help of tips and interventions, which can be applied in the work context and in leisure time. Ideally, these primary users are the ones profiting the most from the **WAOW tool**; however, they are not the only ones.

WorkingAge consortium will not only involve primary users, but in particular also human resource personnel, occupational safety and health professionals of the companies (secondary users) as well as health professionals and researchers (tertiary users), whose perceptions, wishes and ideas will provide valuable input for the further development of the **WAOW tool**. As a result, the tool will provide the best possible support and benefit to all stakeholders.

Learn more

The Edge environment of the WAOW tool is being tested

The IoT platform that provides the Edge environment of the **WAOW tool** is being tested for monitoring industrial hazards. The low power platforms deployed in resource limited settings provides Edge network and Edge cloud to embedded sensors for fire detection and canyon monitoring in rough environments.

Learn more

Telespazio France contribution to Location and Emergency innovative solutions

During the **WorkingAge** project, Location and E112 service of the **WAOW tool** have been developed. The Location service provides both indoor and outdoor position of the user. The outdoor position is made of GNSS latitude and longitude coordinates.

The indoor position contains additional information such as the floor inside the building, and up to the office number. In case the **WAOW tool** user faces a distress situation, the E112 service will be manually or automatically triggered and this precise location information will be conveyed to Emergency Services. This accurate location is key to ease and fasten the rescue team intervention.

Learn more

The Well-being of Teleworking

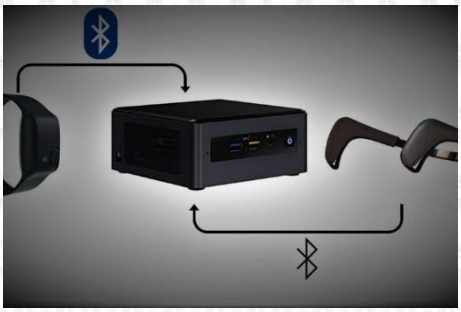
How does teleworking affect our well-being at work? As many of us have experienced since last year, at our homes we work in a social micro-environment with less physical interaction compared to the office.

The **WorkingAge** project has introduced teleworking as one of three use cases in which workers are supported in improving their well-being at work through a tool. This **WAOW tool** monitors different conditions of the workers and their environment and helps the user to be aware of the negative ones and learn how to improve these. In this blog many examples of such conditions have been given, either related to the user's physical state, psychosocial state or his or her environment.

Learn more

Sensors integration for the In-Company phase: final testing

After the conclusion of the first session of experiments, the **WorkingAge** project is going to face the **In-Company tests**, the phase in which the **WAOW tool** will be daily employed by real European workers along their standard working days. The objective of this experimental phase is to test the effectiveness of different entities included in the **WAOW tool**.



Learn more

Preparing for evaluation

WorkingAge consortium is finishing setting up the stage for the tests of the **WOAW tool**. One side PoliMI is guiding partners to complete the description of the evaluation protocols, in this way they will know how to be sure that each piece of the **WAOW tool** works fine and that all tools work together at the best. On the other PoliMI is working closely with our partners to finish preparing the IT stuff to be shipped around on the sites of the tests.

Learn more

First steps of the pilot activities

The **WorkingAge** project is feverishly preparing for its pilot activities. In this spirit, EXUS is leading under WP8 activities the integration effort of the sensors and mobile app, developed by the consortium, into the functioning **WorkingAge** prototype. It is exciting to see all the individual solutions and technologies come together in a cutting edge IoT platform. This is the culmination of two years of hard work, and it is extremely rewarding to see the complete prototype form of a product that can really have a positive impact on quality of life by promoting healthy habits both inside and outside the work environment.

Learn more

Are you aware? Your happiness at work makes the company grow!

We spend an average of a third part of our lives working. Yes! A third part of our lives working! Should be workers' happiness an important focus of the company's work plans? Oh, yes! It definitively should. According to the Happy-Productive Worker Model, "happy" workers perform better than "less happy" ones. Is it possibly true? Let us dive into the evidences.

WAOW tool will help you not just in being aware of your health, lifestyle patterns and Wellbeing, conditions and Performance at Work, but also supports you in your daily life, learning from you, helping you to engage in better habits and recommending some tips, and activities you might be interested in. You will be able to follow how the small changes you do can have a great impact on your wellness.

Learn more

The architecture for supporting the operation of E112 service across different countries

In this post we provide a short answer to the question: how can these apps work when you are travelling in another country and how was this implemented in **WAOW tool**?

The Pan-European Mobile Emergency Application (PEMEA) architecture was introduced to overcome the limitation of emergency apps, specifically about apps working in restricted geographic regions and the lack of a common framework for easy interconnection when the user is traveling away from the region covered by the application. PEMEA is the reference architecture selected to be implemented in **WAOW tool**.

Learn more

Towards an ethical, legal and social WAOW tool

The **WAOW tool** enables employees to not only work productively but also stay healthy in the long term. However, the collection of individual data can create feelings of insecurity, of being observed or the possibility of comparison with other employees. Therefore, it is important to tackle these problem areas early in order to address potential problems directly and thus be able to consider and solve them already in the development phase.

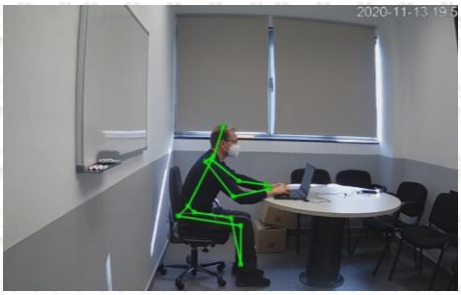
Learn more

Internet of Edges (IoE) – White Paper

Green Communications publishes a white paper on the Internet of Edges (IoE) – an alternative to the cloud for fast, secure, and resilient IoT applications with data sovereignty. The Internet of Edges concept, created by Green Communications, is been used in the **WAOW tool** developed by the **WorkingAge** consortium.

Learn more

In-Lab Tests of Body Pose Estimation



ITCL has completed the **In-Lab tests** of the body pose estimation module of the **WAOW tool**. Image capturing processes have been carried out on 10 workers from the company who are over 45 years of age, performing different tasks in two separate simulated workplace environments, office and manufacturing.

Learn more

Telespazio's Location & Emergency service is finalised: let's prepare the deployment of the Office use case!

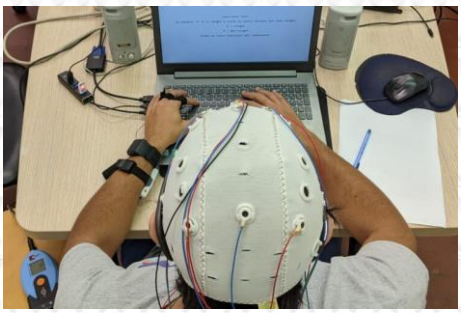
Telespazio has finalised the development of the Location and Emergency service of the **WAOW tool**. The **In-Lab tests** have proven the capacity of the service to provide the user's location in both indoor and outdoor environments.

In addition, the Emergency service, called E112 and based on the implementation of the PEMEA standard, has been tested successfully. The development of two additional servers for the testing of the PEMEA architecture (PSAP side of the PEMEA protocol) has proven very useful. The integration phase is now ongoing and will allow a complete testing of the E112 service during the Short-term tests.

Learn more

The In-Lab tests conclusion: a summary

The **In-Lab experimental phase** of the **WorkingAge** project is completed. The tests aimed at identifying and validating the set of sensors and methodologies for developing the **WAOW tool**. Such experiments were conducted in several European countries, corresponding to the partner's premises, challenging the difficulty of running experimental protocols during the COVID-19 pandemic, in compliance with all the social distancing practices and hygiene standards stated by the World Health Organization (WHO).



Learn more

In-Lab testing of the Facial Recognition and Gesture Interaction Component

EXUS recently completed the in-lab testing of its Facial Recognition and Authentication and Gesture Based Interaction platform, as developed for the **WorkingAge** project. Despite complications arising from the COVID-19 pandemic involving limitations on the number of personnel allowed to be present simultaneously in our offices and restrictions on movement within the city, we "recruited" 10 people to run the system through its paces and discover how easy (or hard!) they found it to learn and interact with it.

Learn more

Know WorkingAge target audience, and if you feel identified stay tuned

All the partners, both industrial partners and academic partners, are defining the individual exploitation plans for the **WAOW tool** to ensure the sustainability of the project's results beyond the project end and to demonstrate how **WorkingAge** has influenced the EU landscape.

One of the first steps in the definition of the dissemination and exploitation results strategies is the identification of the target audience, not only for the **WAOW tool** but also for all the results and achievements of the **WorkingAge** project.

Learn more

Is medical data useful to emergency call-takers?

The emergency message generated by the **WAOW tool** and sent to a PSAP, will also include medical data of the **WAOW** user, after explicit consent has been provided. This feature enables the study of the impact of medical data provision on the emergency call handling, the situational awareness of first responders and the resulting planned emergency response.

Learn more

Bias and Fairness in Facial Expression Recognition and its Relationship to WorkingAge

WorkingAge project undertook a systematic investigation of bias and fairness in facial expression. This is an important undertaking in the context of **WorkingAge** project because the average age of target user group is 45+, i.e. older than the average age of the datasets that are typically used for training predictive models for facial affect analysis.

Therefore **WorkingAge** project need to understand whether and how the scarceness of expression data from older populations will impact the facial affect analysis module and the predictions it generates for the **WAOW tool**.

Learn more

WAOW tool's virtual avatars

The **WOAW tool** includes virtual avatars – not only do they give the app a more friendly and fun aspect, they will also guide the user in the use of the app, indicating notifications and interventions with animations and speaking directly to the user.

Learn more

How can PSAPs benefit best from enriched data sending about an emergency event?

Telespazio is developing in collaboration with EENA an emergency service integrated into the **WAOW tool** and based on the PEMEA standard architecture. This architecture allows the communication between a mobile application and the Emergency services, through a complex client/server architecture.

The vision of PEMEA is twofold: the application side encompassing the mobile application itself communicating with a dedicated Application Provider server responsible for implementing PEMEA and the PSAP side made of dedicated servers responsible for gathering the data from various Application Provider servers and transmitting it to the PSAPs.

Learn more

The In-Lab tests officially started: an overview

The **WorkingAge** research project finally faced its very first session of experiments. After a delay due to the COVID-19 pandemic, the **In-Lab tests** started for the partners who are developing the sensors and algorithms of the **WAOW tool**. The objective of this experimental phase is to identify and validate the set of sensors and methodologies that will compose the **WAOW tool** during the In-Company phase, that is in realistic working environments.

Learn more

From raw measures to advices: the WorkingAge Architecture

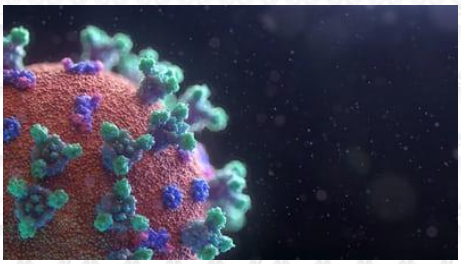
The **WorkingAge** system is composed of sensors, computers and smartphones. The goal is to provide the worker with personalised advices, on the basis of the measurements collected from body and environmental sensors.

The **WAOW tool** converts raw measurements into advices.

Learn more

Gesture Monitoring to reduce the Covid-19 spread in working places

In **WorkingAge** project several software components have been developed such as, face recognition, hand enumeration, hand tracking-monitoring and all the ethical issues have been taken under consideration to have the appropriate platform which will improve the working conditions of employees. This platform can create a potential affect in preventing the spread of COVID-19 in workplaces.



Learn more

WAOW tool and the prolonged, mass teleworking during the pandemic

Driven by the escalation in the coronavirus outbreak organisations may have to jump from occasional, or regular but small-scale teleworking, into the prolonged remote working of the entire workforce. In some cases, it even happened without any formalised structure or policy for it.

WorkingAge aim to provide companies with a new tool to help to implement telework more efficiently, with possible improvement in productivity, in risk prevention (mainly ergonomic and psychosocial that cause physical, cognitive and emotional stress) and promotion of worker well-being.

Although organizations should have or prepare sensible emergency teleworking policy, provide opportunities for empowering team-members in such uncertain and challenging times, as well as maintaining a good communication flow and workstyle, there are other aspects related to ergonomic and psychosocial tele-working risks for which **WAOW** may be a supportive tool.

Learn more

WorkingAge partners

WorkingAge consortium is formed by the balanced collaboration of international level entities represented by Universities, small and medium enterprises, research and innovation centres, big enterprises and industries and Associations, twelve expert organisations from across 6 countries.

LEARN MORE

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