

ARTIFICIAL INTELLIGENCE FOR WORKER MANAGEMENT: EXISTING AND FUTURE REGULATIONS

Around a decade ago, Artificial Intelligence (AI) started to be used to manage workers. **AI-based worker management (AIWM) is a worker management system that gathers data, often in real time, from the workspace, workers and the work they do, which is then fed into an AI-based system that makes automated or semi-automated decisions or provides information for decision-makers (such as HR managers, employers, workers), on worker management-related questions** (European Commission, 2021; European Parliamentary Research Service, 2020; High-Level Expert Group on Artificial Intelligence, 2019; Moore, 2019). AIWM is an umbrella term that includes also **algorithmic management**, which is equally characterised by the use of algorithms to allocate, monitor and evaluate work tasks and/or to monitor and evaluate workers' behaviour and performance through digital technologies and the (semi) automatic implementation of decisions (EU-OSHA, 2017; Bérastégui, 2021, Mateescu and Nguyen, 2019; Kellogg et al., 2020).

The implementation of AIWM systems is frequently aimed at achieving specific business objectives, such as increasing efficiency and productivity. These systems can be used **to improve workers' health, safety and/or well-being**, often driven by a need to comply with regulations (Zwetsloot, 2014), but also to improve workers' productivity and efficiency, as a healthy and happy worker often performs better (Browne, 2017) and has an improved level of productivity (Oracle and Workplace Intelligence, 2020). The majority of AIWM systems that may contribute to ensuring a healthy workforce can collect data about workers and the work environment to **identify risks to workers' health, safety and well-being** and to help mitigate them (Belton, 2019; Till, 2016).

However, AIWM systems often negatively affect workers' health, safety and/or well-being. For example, **fully automating the decision-making process through AI-based systems may result in unsafe, unfair and discriminatory decisions as well as in workers not being able to contest the decision, leading to a loss of autonomy and job control** (EU-OSHA, 2019; Deobald et al., 2019; World Economic Forum, 2018). This, in turn, might lead to the dehumanisation of workers where they are treated not as humans but as collections of data points that need to be 'fixed' to ensure productivity and efficiency. This might be further exacerbated by **intrusive worker-monitoring systems that blur work-life balance** (Eurofound, 2020) and force some to act unnaturally, such as always smiling and suppressing their true feelings, personality or preferences. Similarly, **AIWM systems might be used to infer an individual's mood** from his/her facial expressions, body language and speech patterns, which might make some workers feel eerie and uncomfortable (Ajunwa et al., 2017; De Stefano, 2020; Manokha, 2017). In addition, granting autonomy, even partially, to AIWM systems to make decisions might lead to **issues with accountability** as it is unclear who is to blame if such a system makes a mistake that leads to a negative impact on occupational safety and health (OSH).

These are only some examples of issues that AIWM systems might exhibit. Nevertheless, they show that many factors need to be considered to ensure that AIWM is not abused and does not lead to negative effects on workers. One way of doing so is through regulations. Hence, this policy brief discusses how the existing and newly proposed legislations, recommendations, at the EU and national levels could help to prevent these negative effects. At the end of the policy brief, we also provide recommendations on how existing and newly proposed regulations could be improved.

EU-level regulatory context

Key EU-level regulations and initiatives on AI

AI is a key strategic priority for the European Commission, which aims to transform the EU to be 'the champion of an approach to AI that benefits people and society as a whole' (European Commission, 2018, p. 2). Although there are no regulations at the EU-level targeted specifically at AIWM, there are regulations related to AI and data management that are relevant to AIWM.

The EU became especially active in addressing AI in 2018, although regulations connected to AI also existed before 2018¹. In 2018, the first two significant developments at the EU-level were the **Declaration of the Cooperation on Artificial Intelligence**², signed by 24 EU Member States³ and Norway and the **European Commission's Communication on AI for Europe**⁴. These two complementary documents aimed to create a common EU-level approach to AI. They had the goal of boosting the EU's AI capacity, for the EU to become a global frontrunner in technological advancements and to address subsequent socio-economic transformations, as well as to ensure an adequate legal and ethical framework for the deployment of AI. Relevant to OSH are provisions in the Communication addressing algorithmic decision-making (pp. 13-16 of the Communication). The Communication also proposed a **Coordinated Plan on the Development of Artificial Intelligence** in Europe, which was accordingly drawn up later in 2018 (reviewed in 2021)⁵. The key goals of the plan are to maximise the impact of investments, encourage synergies and cooperation across the EU, foster the exchange of best practices and collectively define the way forward (European Commission, 2018). The plan also provides the strategic framework for national AI strategies.

The Communication also set the foundation for the creation of two formal advisory bodies on AI. First, the **High-Level Expert Group on AI** (AI HLEG) was set up to support the Commission in implementing the European Strategy on Artificial Intelligence, including the elaboration of recommendations on future-related policy development and on ethical, legal and societal issues related to AI⁶. During its existence the expert group managed to create several influential reports on AI that shaped the discussion on it in the EU.⁷ The second advisory body, the **European AI Alliance**, a multi-stakeholder forum (including trade unions, businesses, consumer organisations and other civil society bodies), was created to provide feedback to AI HLEG⁸.

Subsequently, in 2019, the **AI HLEG Ethics Guidelines for Trustworthy AI**⁹ were published. On the same day (8 April), the EC released a **Communication on Building Trust in Human-Centric AI**¹⁰. The two documents highlighted the importance of building trust in AI by putting humans at the centre of it, as well as highlighted seven requirements that would ensure that an AI is trustworthy: a human agency and oversight, technical robustness and safety, privacy and data governance, transparency, diversity, non-discrimination and fairness, societal and environmental well-being and accountability.

Building on this, in 2020, the European Commission released a **White Paper on Artificial Intelligence – A European approach to excellence and trust**¹¹. The White Paper sets out possible legal changes, proposing the creation of a legal definition of AI and new laws regulating 'high-risk' AI systems – systems that create an adverse impact on people's safety or violate their fundamental rights. Meanwhile, all other AI systems not posing a high risk should be subject to already existing laws. Relevant to AIWM, the White Paper listed AI systems for worker recruitment, biometric identification and surveillance as being high-risk. The White Paper was accompanied by the **European data strategy**¹² discussing how to deal with growing data.

Building on the White Paper, on 21 April 2021, the European Commission drafted and published its first attempt to create a comprehensive legal framework for AI – **Proposal for a Regulation on a European approach for Artificial Intelligence (also known as the Artificial Intelligence Act)**¹³. The proposal published alongside the **Communication on Fostering a European approach to Artificial**

¹ However, regarding these older regulations, often concerns were raised that they are not suitable for AI-based systems, such as was the case with the Machinery Directive (European Commission, 2018).

² See: <https://ec.europa.eu/jrc/communities/sites/default/files/2018aideclarationatdigitaldaydocxpdf.pdf>

³ Austria, Belgium, Bulgaria, Czechia, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and United Kingdom.

⁴ See: <https://digital-strategy.ec.europa.eu/en/library/communication-artificial-intelligence-europe>

⁵ See: <https://ec.europa.eu/newsroom/dae/items/709091>

⁶ See: <https://digital-strategy.ec.europa.eu/en/policies/expert-group-ai>

⁷ This includes: (i) Ethics Guidelines for Trustworthy AI, (ii) Policy and Investment Recommendations for Trustworthy AI, (iii) The final Assessment List for Trustworthy AI (ALTAI) and (iv) Sectoral Considerations on the Policy and Investment Recommendations. All of these reports are available at: <https://digital-strategy.ec.europa.eu/en/policies/expert-group-ai>

⁸ See: <https://digital-strategy.ec.europa.eu/en/policies/european-ai-alliance>

⁹ See: <https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai>

¹⁰ See: <https://digital-strategy.ec.europa.eu/en/library/communication-building-trust-human-centric-artificial-intelligence>

¹¹ See: https://ec.europa.eu/info/publications/white-paper-artificial-intelligence-european-approach-excellence-and-trust_en

¹² See: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0066>

¹³ See: <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1623335154975&uri=CELEX%3A52021PC0206>

Intelligence¹⁴ draws attention to the aspect of trust in AI technologies and the need for a proportionate and risk-based European regulatory approach. The regulation proposal aims to ensure the safe deployment of AI-systems, prohibiting some of them while casting others as being high-risk and requiring more safeguards for the design, development and use of such systems. More specifically, Annex III of the document describes **high-risk AI systems**, which are relevant to AIWM such as: (i) AI systems used for employee recruitment or selection (such as advertising vacancies, screening or filtering applications, evaluating candidates in the course of interviews or tests); and (ii) AI systems used for making decisions on promotions and terminations of work-related contractual relationships, for task allocation and for monitoring and evaluating the performance and behaviour of persons in such relationships.

The proposal also includes provisions related to AIWM and OSH directly:

- Title II Article 5.1 recommends prohibiting the following practice relevant for AIWM (European Commission, 2021, p. 43): ‘the placing on the market, putting into service or use of an AI system that deploys subliminal techniques beyond a person’s consciousness to materially distort a person’s behaviour in a manner that causes or is likely to cause that person or another person physical or psychological harm’.
- Title III Article 7 stipulates that if an AI tool has an impact on health and safety it cannot be considered to have a ‘reversible effect’ (European Commission, 2021, p. 46), ‘the extent to which the outcome produced with an AI system is easily reversible, whereby outcomes having an impact on the health or safety of persons shall not be considered as easily reversible’.
- Title III Article 9.5 aims at diminishing the likelihood that high-risk AI systems lead to negative effects (European Commission, 2021, p. 47): ‘high-risk AI systems shall be tested for the purposes of identifying the most appropriate risk management measures. Testing shall ensure that high-risk AI systems perform consistently for their intended purpose and that they are in compliance with the requirements set out in this Chapter’.

The Proposal provoked various reactions in the EU and beyond, being criticised by some as ‘strict’ (Satariano, 2021) or ‘too broad and ambiguous’ by others (Wolk, 2021). In the context of the use of AIWM systems, claims have been made that the proposed regulation would fail to ensure the adequate protection of workers subject to AI-based systems. In addition, it was also criticized by not being subject to social dialogue and generally lacking the voice of workers and their representatives (De Stefano, 2021; Ponce del Castillo, 2021). This regulation also fails to ensure the protection of workers’ rights and fundamental rights (Ponce del Castillo, 2021, p. 4) and relies on technical experts in defining the regulatory framework (Ibid, p. 6). It has also been stated that the absence of clear provisions attributing liability (provider vs user) and subsequent redress against the liable party is another shortcoming of the proposal (Ponce del Castillo, 2021). There are also limitations regarding low-risk systems as the different levels of risk they entail are not defined, allowing a free market access for multiple ‘low-risk’ systems without any safeguards (Ponce del Castillo, 2021). Finally, according to one interviewed expert, legal experts believe that the Act will set the ceiling on AI regulation, but not the floor, meaning that national AI policies that go beyond it and are more human-centric – such as the Spanish regulation¹⁵ – will have to become less strict.

In addition to the EC, different EU organisations have also taken proactive steps to ensure the appropriate use of AI in the EU. For example, European cross-sectoral social partners – Business Europe, SMEunited, CEEP and the ETUC – signed the **European social partners’ framework agreement on digitalisation**¹⁶ in 2020. Regarding AIWM, the agreement stipulates that the deployment of AI systems should:

- Follow the human-in-control principle;
- Be safe (for example, risk assessments should be conducted and opportunities should be undertaken to improve safety, prevent any harm including physical integrity, psychological safety, confirmation bias or cognitive fatigue);

¹⁴ See: <https://digital-strategy.ec.europa.eu/en/library/communication-fostering-european-approach-artificial-intelligence>

¹⁵ See: <https://www.boe.es/eli/es/rdl/2021/05/11/9>

¹⁶ See: <https://www.busineurope.eu/publications/european-social-partners-framework-agreement-digitalisation>

- Follow the principles of fairness (for example, be free of bias and discrimination); and
- Be transparent and explicable with effective oversight.

The agreement also highlights that when AI is used in human resource management (such as recruitment, performance analysis and evaluation, promotion or dismissal) its use needs to be transparent and subjects should be able to request human intervention or contest the decision. Finally, the agreement notes that AI systems should comply with existing laws, including General Data Protection Regulation (GDPR), guaranteeing a worker's right to privacy and dignity.

Key EU-level regulations and guidelines on data governance

With the increasing deployment of AI-based tools in workplaces, questions of ethics and privacy have become especially relevant also from an OSH perspective as they are associated with potential impacts on workers' safety and health. In the EU, the most significant provisions on data protection are found in **the GDPR¹⁷** and **Council of Europe's Data Protection Convention 108+ (COE)¹⁸**.

On the one hand, the **GDPR** adopted in 2016 and in force since 2018, which addresses the key issue of personal data protection and automated decision-making, is a directly applicable law in all EU Member States. The processing of personal data is at the core of AIWM, which encompasses practices of gathering worker-related data and using it to inform or automate managerial decision-making. The data protection law does not mention OSH per se, but since the invasion of privacy (by accessing personal data) and misuse of personal data can have severe consequences on workers' mental health, provisions on data protection are essential for the discussion on AIWM and OSH. For example, Article 22 of the GDPR grants data subjects (in this context employees or job applicants) the **right to not be subject to decisions based 'solely' on the automated processing of personal data if the decision has significant legal consequences or a 'similarly significant' effect on the data subject**, which might imply OSH-related issues. This provision is expected to empower employees by giving them the right to demand human intervention on behalf of the data controller who could revoke or reconsider the decision made automatically by an AI system.

On the other hand, the **Council of Europe's Data Protection Convention 108+** is a legally binding instrument on the protection of private life and personal data, which was revised in 2018 (COE, 2018). The revision amended the *Convention for the Protection of Individuals* with regard to the automatic processing of personal data. Given that AI often automatically collects and processes data, this Convention also expands on privacy-related issues that such tools might create. For example, Article 5 of Convention 108+ foresees that **personal data undergoing automatic processing** (for example, storing the data, carrying out logical and/or arithmetical operations on those data, their alteration, erasure, retrieval or dissemination) must be accurate, obtained and processed fairly and lawfully, collected only in relevant and adequate amounts and used only for specified and legitimate purposes.

Other significant provisions in these regulations relate to the transparency of organisations that are obliged to **provide the data subject with information about all stages of algorithmic decision-making that involve personal data** (article 5(1)(a); article 13; article 14 GDPR; article 5(4)(a); article 8 and article 9 of the revised COE). According to these provisions, workers have the right to know if they are subject to automated decision-making and organisations are obliged to provide information on the logic, significance and consequences of such decision-making. This creates the so-called 'right to explanation' (Malgieri and Comandé, 2017). Moreover organisations are required to conduct systematic and extensive data protection impact assessment when the processing of personal data might pose high risks for a person's rights and freedoms (Article 25(1) GDPR, article 10(2) of the CEO Convention).

However, it bears mentioning that EU data governance regulations have several significant limitations in terms of AIWM. First, the regulations adopt an outdated understanding of the three-phase process of data processing: acquisition, analysis and application (Oostveen, 2016). This leads to an issue where the regulations often fail to acknowledge that personal and non-sensitive data can be used to infer, derive or predict highly intimate sensitive information, such as emotional well-being (Privacy

¹⁷ See: <https://eur-lex.europa.eu/eli/reg/2016/679/oj>

¹⁸ See: https://www.europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEES/LIBE/DV/2018/09-10/Convention_108_EN.pdf

International, 2017). Second, even though Article 22(1) of the GDPR grants individuals the right not to be subject to 'a decision based solely on automated processing' when this decision produces legal or 'similarly significant' effects (Aloisi and Gramano, 2019), it leaves room for interpretation as to what 'significant effects' mean (Privacy International, 2017). Finally, even though GDPR provides a means for workers to opt out from unjust data collection, in reality, workers can rarely use this clause. The problem here lies in the hierarchical nature of the employment relationship – 'employees are seldom in a position to freely give, refuse or revoke consent' considering they could face adverse consequences of their noncompliant conduct (WP29 Opinion 2/2017). In addition, sometimes a consent clause is also included by default in the work contract, forcing workers to give it if they wish to get the job. Therefore, consent is rarely a legal ground for data processing at the workplace.

EU OSH directives relevant to AIWM

The main regulations related to OSH in the EU are the **EU Occupational health and safety acquis**¹⁹ consisting of a variety of different directives, ranging from the 'Framework' Directive²⁰, which is a wide-reaching directive introducing measures to encourage improvements in the safety and health of workers at work, to a variety of individual more narrowly defined directives²¹. Though the acquis are quite generic in nature and do not explicitly address AI-based systems, including ones related to AIWM, it implicitly applies to the OSH risks posed by AIWM. As such, the provisions of the Framework Directive obliging employers to conduct risk assessments, to put in place and use preventative and protective measures, to inform workers about health and safety risks, to train workers on health and safety, to engage in consultation with workers and to exercise health monitoring also implicitly apply to AIWM.

*Directive 90/270/EEC – display screen equipment*²² covers a workstation, comprised of display screen equipment, input devices, such as a keyboard and how it should be used to ensure OSH. Article 6 of the Directive also states that 'workers shall receive information on all aspects of safety and health relating to their workstation' (p. 3). Hence, an argument can be made that if the workstation is used to collect data on workers that is then used by an AI-based system to make worker management related decisions, which might have negative effects on safety and health, the workers should be informed about such tools. Similarly, *Directive 2002/14/EC - informing and consulting employees*²³ - stipulates that in larger organisations²⁴ workers should be consulted or informed about decisions that might lead to large changes in the company. Hence, as the introduction of AI-based tools might lead to such large changes, it is necessary that employers communicate these changes to workers or, ideally, discuss them.

Regulation on equality and non-discrimination relevant to AIWM and OSH

In addition, it is crucial that the dignity, humanity and fundamental rights of individuals are not in any way violated by AIWM tools. EU legislation that ensures this includes the **EU Charter of Fundamental Rights, the European Non-discrimination Law, the European Convention on Human Rights** and the **General Framework for Equal Treatment in Employment and Occupation**, based on Directives 2000/43/EC, 2000/78/EC and 2002/54/EC. These directives ensure that human rights are kept to the highest standards in the EU and prohibit any direct or indirect discrimination based on religion, disability, age, sexual orientation and other grounds. The General Framework for Equal treatment in employment and occupation also prohibits discrimination that might hinder access to employment and self-employment, through discrimination in recruitment, access to vocational training and similar, as well as any discrimination in terms of pay and similar. In addition, according to interviewed experts, discrimination based on trade union affiliation is also often legally protected in the European Union. Hence, it can be inferred that, at least on paper, these legislations protect workers in case of discriminatory semi- or fully-automated decision-making in workplaces.

¹⁹ See: <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A31989L0391>

²⁰ See: <https://osha.europa.eu/en/legislation/directives/the-osh-framework-directive/1>

²¹ See: <https://osha.europa.eu/en/safety-and-health-legislation/european-directives>

²² See: <https://osha.europa.eu/en/legislation/directives/5>

²³ See: <https://osha.europa.eu/en/legislation/directives/directive-2002-14-ec-establishing-a-general-framework-for-informing-and-consulting-employees-in-the-european-community>

²⁴ The Directive applies to organisations with 50 employees across several EU countries or 20 employees in one Member State.

National regulations in the EU Member States

Following the EU's Coordinated Plan on Artificial Intelligence, some EU Member States also started to adopt AI-related strategies. According to JRC-OECD (2021), by June 2021, 20 EU Member States²⁵ as well as Norway and Switzerland have adopted at least some AI-related strategies, while the remaining Member States are in the final drafting phases. In broad strokes, these strategies define national policy frameworks on AI in five areas: (i) human capital, (ii) R&D and innovation, (iii) networking and collaboration, (iv) infrastructure and (v) regulation. These key building blocks set the course of action for the public and private sectors in testing and experimenting with AI for business growth, building relevant digital and telecommunication infrastructures, boosting AI potential at the national level through international as well as public-private sector cooperation, as well as skill enhancement, up-skilling and reskilling of the current and future labour force (JRC-OECD, 2021):

- The **German national AI strategy**²⁶ foresees drawing up of guidelines and frameworks for the use of AI in the world of work, highlights the need to audit organisations on their use of AI and points to ensuring co-determination and the right for work councils to be involved in the processes of introducing and using AI at the workplace. Amendments of relevant legislation are also foreseen to ensure that the already existing right to co-determine the selection criteria used for recruiting, re-assigning, promoting/demoting and laying off workers would also apply when AI is used.
- The **French national AI strategy**²⁷ encourages including workers as the *subjects* of digital transformation into ex-ante discussions regarding AI usage in workplaces (Villani, 2018). The existing compulsory collective bargaining is proposed to factor in the introduction of new technology and the digital transformation of companies and serve as a forum for such discussions. It also urges the launch of legislative reform to adjust the overall framework for governing working conditions in the digital age with a specific focus on increasing human-machine complementarity.
- **The Czech national AI strategy**²⁸, in addition to other provisions, lays down the measures to address the impacts of AI on the labour market and the social system (Ministry of Industry and Trade of the Czech Republic, 2019).
- In **Spain**, the so-called '**Rider's law**' aims to establish the employment status of riders and algorithm transparency (Aranguiz, 2021), which might be also relevant for other occupations. The law makes it mandatory for digital platform companies to be transparent about how the algorithms and AI they use affect working conditions as well as profiling, hiring and lay-off decisions (Pérez, 2021).

In addition, all EU countries have general **OSH regulating acts** implementing the EU OSH Framework Directive, which, while not explicitly addressing the adoption of advanced digital technologies in workplaces, require employers to ensure workers' safety and health. In a similar regard, the **labour laws** in all countries grant workers various rights and define their working conditions (such as working time, provisions on workplace surveillance and monitoring), which are relevant when discussing AIWM and OSH. One example of such a regulation is the **EI Khomri Law in France**, granting workers the 'right to disconnect', which allows workers to completely disconnect from work after working hours (Kessler, 2016). A right to disconnect is also part of the Spanish law on data protection, yet, contrary to France, the law does not impose sanctions on employers (Brin, 2019). In other countries – Belgium, the Netherlands and Luxembourg, these questions were also put on the policy agenda, but to this date remain only at a debate level (Govaert et al., 2021).

Some countries have also developed guidelines relevant for AIWM:

- In **Germany**, a **concept paper on how to deploy and use AI in business** was developed by the German Confederation of Trade Unions. It outlines a six-step process in the deployment of trustworthy AI in workplaces, each containing a set of crucial questions to be asked before the

²⁵ Bulgaria, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Hungary, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain and Sweden.

²⁶ See: https://ai-watch.ec.europa.eu/countries/germany/germany-ai-strategy-report_en

²⁷ See: https://ai-watch.ec.europa.eu/countries/france/france-ai-strategy-report_en

²⁸ See: https://www.mpo.cz/assets/en/guidepostfor-the-media/press-releases/2019/5/NAIS_eng_web.pdf

process (The German Confederation of Trade Unions, 2020). The paper also addresses the importance of worker involvement when adopting AI in workplaces. It stresses the need to institutionalise co-determination for the entire process chain. It specifically highlights that co-determination should be extended to usage forms of data and techniques to minimise the risks associated with the processing of personal data.

- In **Italy**²⁹, the **operational indications on the installation and use of support tools, including AI-based ones in call centres** drafted by the Italian National Labour Inspectorate, covers various tools and software applications that can be used to manage workers. For example, the Client Relationship Management (CRM) software collects and couples information between a customer's and an operator's data and therefore goes beyond the contractual relationship between employer and operator.
- In **Cyprus**, the Commissioner for Personal Data Protection has published **guidelines relating to the use of software for monitoring employees' computer activities**. According to the guidelines, under specific circumstances and in compliance with a specific regulation, employers can monitor some computer activities, but monitoring of all activities or private email correspondence is prohibited (Eurofound, 2020).

The results of a consultation with EU-OSHA Focal Points (FOPs) carried out between February and April 2021 show **ongoing debates on the AIWM effects on OSH** across most EU Member States:

- The **Visegrád Group countries** (Czechia, Poland, Slovakia and Hungary), issued a joint statement in which the signatories discuss the benefits and possible risks associated with the development of AI-based technologies, including at work. They also point out the potential for the development of European businesses based on AI, but at the same time indicate the need for an in-depth analysis of legal, economic and social implications. In the statement, some ways in which this can be achieved are also proposed, such as creating a virtual data warehouse or establishing an AI observatory at the EU level.
- In **Poland**, in particular, trade unions advocate for the introduction of anti-discrimination and control mechanisms for the use of algorithms in worker management and to provide the national labour inspectorate with the necessary instruments to control automated decision-making processes in labour relations. One of the trade unions also proposed the question of algorithms in managing workers to be included in collective agreements or work regulations³⁰.
- In **Italy**, AIWM and its accompanying risks are starting to be debated among different stakeholders and at various levels, including technical, cultural, governmental and work levels among trade unions. Some of these debates also lead to several actions, for example, the introduction of operational indications on the installation and use of support tools, including AI-based ones, in call centres (Circolare N.4/2017).
- In **Finland**, on the contrary, the general opinion is that AIWM is already covered in other, more general laws. However, there still were and are, several debates focussing on the general capabilities of AI, for example, whether AI should only be used to collect and summarise data or may it also learn to make good and reliable decisions autonomously.
- In **Croatia**, several events on broader topics of digitalisation and AI took place in recent years and were attended by various stakeholders, including employer and worker representatives. Similarly, in other countries, discussions are mainly centred on more general issues of data privacy and protection (such as in Austria, France, Germany and Italy) and human-machine interface as well as human- and user-centred use of AI in the workplaces (such as in Germany and France) and the right to disconnect (in France).

On the employers' side, 17 **business organisations and internet platforms** from nine EU countries³¹ recently issued a joint position on AI, stating that an awareness of the negative aspects of AI should not lead to banning its use, for example, in face-recognition technology. Businesses called for a dialogue

²⁹ See: <https://www.ispettorato.gov.it/it-it/orientamentiispettivi/Documents/Circolari/INL-circolare-4-2017-call-center-e-videosorveglianza.pdf>

³⁰ See the All-Poland Alliance of Trade Unions (OPZZ) statement: <https://www.opzz.org.pl/aktualnosci/kraj/kto-ma-algorytm-ten-rzadzi-swiatem>

³¹ Bulgaria, Croatia, Czechia, Hungary, Lithuania, Poland, Romania, Slovakia and Slovenia.

among politicians, professionals, businesses and civil society institutions on the responsible development and application of AI³². They stressed that, while respecting personal data and protecting privacy, AI has a positive impact on different areas of life and thus there is no need for excessive and unnecessary legal regulation.

Conclusions and recommendations

To mitigate the possible negative effects of AI on OSH, it is crucial to have a clear regulatory base, which, to some extent, is already present. **At the EU level, some regulations already exist that contribute towards addressing the possible negative effects of AIWM**, including: (i) the EU OSH acquis that includes provisions, albeit generic, that are applicable to AIWM; (ii) the GDPR that covers personal data that might be used in AIWM; and (iii) the EU anti-discrimination law. In addition, in April 2021 the EC drafted a Proposal for a Regulation on a European Approach for AI that, if accepted, would be the first EU-wide regulation specifically targeting AI, which also covers certain AIWM applications and risks. However, according to the academic literature, interviews and discussions with experts, some gaps exist at the EU level. These include, but are not limited to, many regulations lacking the ‘voice of workers’, a weak enforcement of these laws and lack of accountability provisions for the mistakes of AI systems.

Similarly, **at the Member State level, some AI-related provisions exist, but they are, in many cases, broad in scope and do not focus specifically on AIWM and its effect on OSH**. For example, at least 20 out of 27 EU Member States, as well as Norway and Switzerland, have adopted AI strategies, but the majority of them are rather general and rarely include provisions explicitly related to AI systems that interact with or might directly affect, workers, but some exceptions exist. For example, **German and French national AI strategies** explicitly address the use of AI in the workplace. In some Member States, there are also several codes of practice and guidelines on the use of AI that are also related to AIWM systems.

However, gaps remain and hence, a number of recommendations that can be used to mitigate risks to workers’ safety, health and well-being that are associated with the design and use of AIWM systems were identified:

- **Making the design, development and use of AIWM systems human-centred**, so that they are used **to support** workers and leave **humans in control**. This would also guarantee that the compassion, empathy and care for workers possessed by humans is not replaced by computer decision-making that solely tries to increase profits for a business.
- **Ensuring workers’ participation, consultation and social dialogue** in the design, development and testing phases, ex-ante and ex-post assessments, as well as usage of AI-based systems to make such systems trustworthy, human-centred and remaining under human control.
- Enforcing the co-governance of AIWM systems, **giving a say to workers on how AIWM is developed, acquired, introduced and used**. This is key to preventing the possible risks of AIWM to OSH.
- **Fostering a holistic approach in evaluating AIWM systems** encompasses including different stakeholders in the evaluation process, as well as ensuring that such systems are not evaluated in a vacuum; it also covers the effects AIWM might have on workers and society as a whole.
- The **evaluation process should also be a dynamic process rather than a one-off exercise** as AI-based systems are able to evolve through self-learning, which might lead to some systems that were safe in the past becoming dangerous for workers.
- **Improving the design, development and use of AI-based systems by making the functioning and purpose of AIWM transparent, explainable and understandable**. This might be ensured by introducing more binding requirements for AIWM providers and developers to ensure that **workers’ health, safety and well-being are already considered from the design stage**. This should also go hand-in-hand with a strong enforcement policy ensuring that organisations comply with regulations.

³² See: http://konfederacjalewiatan.pl/aktualnosci/2020/1/wspolne_stanowisko_biznesu_w_sprawie_sztucznej_inteligencji

- **Establishing a clear line of responsibility indicating who is responsible that an AIWM system does not cause harm to workers, break the law or malfunction.** This includes establishing oversight mechanisms, remedies on how the negative effects of AIWM can be mitigated and a course of action on what to do if managers fail to govern the AIWM system properly. Ensuring the line of responsibility could also go beyond simply stating that an employer in general is responsible for AIWM systems by instead requiring organisations to specifically name responsible managers.
- **Improving workers' privacy and data protection** by increasing transparency about data collection and usage and introducing better reporting mechanisms on misuses of AIWM tools. More specifically, workers should have the right to edit or block algorithmic inferences and to contest automated decisions and they should also be ensured full freedom to refuse to give consent to collect their data by additional provisions prohibiting layoffs or any other negative actions against workers in these cases. This can be expanded upon by **ensuring workers the right to an explanation** for decisions made by algorithms. This includes what private data the algorithm used, how this data was collected and how it made its decision.
- **Ensuring the right to disconnect for workers**³³. In addition to its primary goal of guaranteeing workers the right to disconnect from work during non-working hours, it could also serve as a means to ensure workers' privacy and personal data protection, in particular when it relates to a disproportionate amount of monitoring and surveillance not strictly necessary for a legitimate purpose.
- **There is a need for knowledge exchange, dissemination and awareness building on AIWM and how it might affect OSH.** This might include creating a dialogue involving relevant stakeholders, such as representatives of workers, employers, OSH authorities, experts and AIWM tool developers. The dialogue should be open, allow all sides to express their opinions and focus not only on what should be controlled, banned and mitigated, but also on how to ethically use AI-based tools.
- Worker privacy and data protection can also be improved by **enhancing labour inspectorates' capacities and cooperation with National Data Protection Authorities.** This includes improving their knowledge about AIWM and how it might affect OSH, ensuring access to data for enforcement purposes, as well as providing tools to labour inspectors for closer cooperation with data protection officers on questions relating to how AIWM and similar AI-based systems affect OSH. This, in turn, will improve collective bargaining of these organisations (such as labour inspectorates and national data protection authorities) and it will ensure that the usage of such systems is scrutinised by individuals who understand them and hence are able to identify potential issues they might create.
- **More education efforts that enhance workers' and employers' AI literacy** by promoting qualification and skills development for AIWM applications. This would empower them to better understand AIWM systems and thereby be able to exert their right of consultation and participation in the design and implementation of such systems. Education and awareness-raising efforts should focus on ensuring that current and future AIWM systems put humans and their health, safety and well-being at the centre.
- **Ensuring transparency between developers of AIWM systems and deploying organisations.** This includes, but is not limited to, sharing with organisations how such a tool operates, how it makes decisions, what kind of risks and negative effects it can create, its benefits and drawbacks, and so on. However, if full transparency is not possible, any agreement should include the caveat that if a system causes harm and the deploying company has no right to demand that the system be changed, the system would be shut down at once by such system developers.

³³ At the time of writing, social partners are negotiating a EC directive on the Right to disconnect.

References

- Ajunwa, I., Crawford, K. and Schultz, J. (2017). Limitless worker surveillance. *California Law Review*, 105(3): 735-776.
- Aloisi, A. and Gramano, E. (2019). Artificial intelligence is watching you at work: Digital surveillance, employee monitoring and regulatory issues in the EU Context. *Comparative Labor Law & Policy Journal*, 41(1): 95-121.
- Aranguiz, A. (2021). *Spain's platform workers win algorithm transparency*. SocialEurope. Available at: <https://socialeurope.eu/spains-platform-workers-win-algorithm-transparency>
- Belton, P. (2019). *How does it feel to be watched at work all the time?* BBC News. Available at: <https://www.bbc.com/news/business-47879798>
- Brin, D. (2019). France and Spain: Right to disconnect spreads. SHRM. Available at: <https://www.shrm.org/resourcesandtools/legal-and-compliance/employment-law/pages/global-france-spain-right-to-disconnect.aspx>
- Browne, S. (2017). *HR on purpose: Developing deliberate people passion*. Society For Human Resource Management.
- Circolare (N. 4/2017). *INL CIRCOLARI REGISTRAZIONE N. 4 DEL 26/07/2017*. Available at: <https://www.ispettorato.gov.it/it-it/orientamentiispettivi/Documents/Circolari/INL-circolare-4-2017-call-center-e-videosorveglianza.pdf>
- COE (Council of Europe) (2018). Modernised convention for the protection of individuals with regard to the processing of personal data. Available at: https://search.coe.int/cm/Pages/result_details.aspx?ObjectId=09000016807c65bf
- De Stefano, V. (2020). *Algorithmic Bosses and What to Do About Them: Automation, Artificial Intelligence and Labour Protection*. In Economic and Policy Implications of Artificial Intelligence, 65-86. Cham: Springer.
- De Stefano, V. (2021). *The EU proposed regulation on AI: A threat to labour protection? Regulating for Globalization*. Available at: <http://regulatingforglobalization.com/2021/04/16/the-eu-proposed-regulation-on-ai-a-threat-to-labour-protection/>
- Deobald, U.L., Busch, T., Schank, C., Weibel, A., Schafheitle, S., Wildhaber, I. and Kasper, G. (2019). The challenges of algorithm-based HR decision-making for personal integrity. *Journal of Business Ethics*, 160(2): 377-392.
- DGB (The German Confederation of Trade Unions) (2020). *Artificial Intelligence (AI) for Good Work*. International Telecommunication Union (ITU). Available at: <https://www.dgb.de/downloadcenter/++co++b794879a-9f2e-11ea-a8e8-52540088cada>
- EU-OSHA (2019). *OSH and the future of work: Benefits and risks of artificial intelligence tools in workplaces*. Discussion paper. Available at: <https://osha.europa.eu/en/publications/osh-and-future-work-benefits-and-risks-artificial-intelligence-tools-workplaces>
- Eurofound (2020). Working conditions: Employee monitoring and surveillance: The challenges of digitalisation. Available at: <https://www.eurofound.europa.eu/publications/report/2020/employee-monitoring-and-surveillance-the-challenges-of-digitalisation>
- European Commission (2018). *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*. Artificial Intelligence for Europe. COM(2018) 237 final. Brussels.
- European Commission (2021). *Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain union legislative acts*. COM(2021) 206 final. Brussels. Available at: https://eur-lex.europa.eu/resource.html?uri=cellar:e0649735-a372-11eb-9585-01aa75ed71a1.0001.02/DOC_1&format=PDF

- European Parliamentary Research Service (2020). *Data subjects, digital surveillance, AI and the future of work*. Brussels. Available at: [https://www.europarl.europa.eu/RegData/etudes/STUD/2020/656305/EPRS_STU\(2020\)656305_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/656305/EPRS_STU(2020)656305_EN.pdf)
- Govaert, M., van Beers, A. and Daniels, C. (2021). *The right to disconnect*. Global Workplace Insider. Available at: <https://www.globalworkplaceinsider.com/2021/03/the-right-to-disconnect/>
- High-Level Expert Group on Artificial Intelligence (2019). *Ethics Guidelines for Trustworthy AI*. Brussels. Available at: <https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai>
- JRC-OECD (2021). *National strategies on artificial intelligence: A European perspective*. Luxembourg: Publications Office of the European Union. Available at: <https://publications.jrc.ec.europa.eu/repository/handle/JRC122684>
- Kellogg, K.C., Valentine, M.A. and Christin, A. (2020). Algorithms At Work: The New Contested Terrain of Control. *Academy of Management Annals*, 14(1): 366-410.
- Kessler, F. (2016). *Labor Reforms 2015-2016 In France: “Macron” And “Rebsamen” Laws, The “El Khomri” Draft Legislation*. Available at: <https://www.raco.cat/index.php/IUSLabor/article/download/318006/408057/>
- Malgieri, G. and Comandé, G. (2017). Why a right to legibility of automated decision-making exists in the general data protection regulation. *International Data Privacy Law*, 7(4): 243–265.
- Manokha, I. (2017). *Why the Rise of Wearable Tech to Monitor Employees is Worrying*. The Conversation. Available at: <https://theconversation.com/why-the-rise-of-wearable-tech-to-monitor-employees-is-worrying-70719>
- Mateescu, A. and Nguyen, A. (2019). *Explainer: algorithmic management in the workplace*. Data & Society Blog.
- Ministry of Industry and Trade of the Czech Republic (2019). The National Artificial Intelligence Strategy of the Czech Republic. Available at: https://www.mpo.cz/assets/en/guidepost/for-the-media/press-releases/2019/5/NAIS_eng_web.pdf
- Moore P.V. (2019). OSH and the Future of Work: Benefits and Risks of Artificial Intelligence Tools in Workplaces. In: Duffy V. (ed) *Digital Human Modeling and Applications in Health, Safety, Ergonomics and Risk Management. Human Body and Motion*. HCII 2019. Lecture Notes in Computer Science: 11581.
- Oracle and Workplace Intelligence (2020). *As uncertainty remains, anxiety and stress reach a tipping point at work: Artificial intelligence fills the gaps in workplace mental health support*. Oracle. Available at: <https://www.oracle.com/a/ocom/docs/oracle-hcm-ai-at-work.pdf>
- Oostveen, M., (2016). Identifiability and the applicability of data protection to big data. *International Data Privacy Law*, 6(4): 299-309.
- Pérez, G. R. (2021). *Spain approves landmark law recognizing food-delivery riders as employees*. El Pais. Available at: https://english.elpais.com/economy_and_business/2021-05-12/spain-approves-landmark-law-recognizing-food-delivery-riders-as-employees.html
- Ponce del Castillo, A. (2021). The AI regulation: Entering an AI regulatory winter? Why an ad hoc directive on AI in employment is required. *ETUI Research Paper - Policy Brief 2021.07*, Available at: <https://ssrn.com/abstract=3873786>
- Privacy International (2017). *Data is power: Profiling and automated decision-making in GDPR*. Privacy International. Available at: <https://privacyinternational.org/sites/default/files/2018-04/Data%20Is%20Power-Profiling%20and%20Automated%20Decision-Making%20in%20GDPR.pdf>
- Satariano, A. (2021). *Europe Proposes Strict Rules for Artificial Intelligence*. New York Times. Available at: <https://www.nytimes.com/2021/04/16/business/artificial-intelligence-regulation.html>

- Till, C. (2016). *Why do companies want us to be healthy? Corporate wellness, self-tracking and philanthrocapitalism*. This is not a Sociology Blog. Available at: <https://christopherharpertill.wordpress.com/2016/04/06/why-do-companies-want-us-to-be-healthy-corporate-wellness-self-tracking-and-philanthrocapitalism/>
- Villani, C. (2018). *For a meaningful artificial intelligence. Towards a French and European strategy*. Available at: https://www.aiforhumanity.fr/pdfs/MissionVillani_Report_ENG-VF.pdf
- Wolk, A. (2021). *How to prepare for a new era of AI regulation*. TechMonitor. Available at: <https://techmonitor.ai/technology/ai-and-automation/how-to-prepare-for-a-new-era-of-ai-regulation-eu>
- World Economic Forum (WEF) (2018). *How to prevent discriminatory outcomes in machine learning*. Global Future Council on Human Rights 2016-2018, Cologny, Switzerland. Available at: http://www3.weforum.org/docs/WEF_40065_White_Paper_How_to_Prevent_Discriminatory_Outcomes_in_Machine_Learning.pdf
- WP29 (Article 29 Working Party) (2017). *Opinion 2/2017 on data processing at work*, 8 June.
- Zwetsloot, G.I.J.M. (2014). What are occupational safety and health management systems and why do companies implement them? Available at: https://oshwiki.eu/wiki/What_are_occupational_safety_and_health_management_systems_and_why_do_companies_implement_them%3F

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