

Artificial Intelligence in the MET industries

IndustriAll Europe & Ceemet joint conclusions

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Artificial Intelligence in the European MET industries¹

Artificial Intelligence (AI) is one of the most disruptive technological developments of today. AI changes the way we work, the way we produce and the way we communicate, among other issues, companies' economic success. AI has an enormous potential to transform the jobs of today. AI is likely to create plenty of new employment opportunities and might have the effect of certain tasks or even certain occupations disappearing. If implemented wisely, AI has the potential to contribute to good working conditions and quality jobs for European workers as well as companies' competitiveness. It could, however, also have negative effects like weaken workers' autonomy and deskilling. A good functioning social dialogue should therefore help to reap the benefits of technological change and contribute to quality employment.

The social partners in the MET industry acknowledge the creative potential of AI. AI does not only replace repetitive or dangerous tasks, it also creates new jobs and will enable work on more creative tasks.

Changes in employment will go hand in hand with a revaluation or upvaluation of the remaining jobs through, for example, further qualification and adaption to the

new technologies. The challenge is to make sure that those who today perform jobs that will be impacted by AI will have the necessary qualifications to perform the new and transformed jobs of tomorrow created by the digital transformation. The digital transformation, and with it AI, need to follow a human-centric approach, especially in relation to the fundamental rights of all those concerned which need to be guaranteed in line with national and European legislation on the matter².

AI has the potential to contribute to a company's economic success, as well as good working conditions, health and safety at the workplace and quality jobs. One of the key challenges for social partners will be to work together to anticipate and strive to develop fair solutions for the world of work of tomorrow. In that respect, a timely anticipation of the skills needs of tomorrow, and a

As social partner, it is relevant to discuss the impact of digitalisation and AI on jobs, especially regarding occupational health and safety, human resource management, data protection and skills needs. We have the knowledge and experience to discuss the type of AI we want at the workplace.

¹ DISCLAIMER: The English version is the official version

² The Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence is currently under discussion.

forward-looking up- and reskilling of the existing workforce, are fundamental to the success of an AI that works for all.

In light of this shared analysis, the social partners in the MET industries have agreed on a set of joint conclusions that will be relevant for the debate and that deserve our attention. This joint statement aims at providing guidance³ for the social partners in the European MET industries on how to approach AI at the workplace. These conclusions are in the same spirit as the European Social Partners framework agreement between ETUC, BusinessEurope, CEEP, SME united, June 2020.

1. Occupational Safety and Health

The potential benefits of AI in the field of occupational safety and health (OSH), particularly in combination with robotics, are enormous. Dangerous tasks and tasks in dangerous environments can potentially be substituted and allocated to a machine, thereby contributing to a healthier work environment for the human. The use of AI in combination with sensors and predetermined commands can further help to improve OSH, for example by reducing the exposure to various risks, such as unhealthy environments.

Increasingly mobile and collaborative AI-enabled robots can create new working opportunities, i.e. for workers with disabilities. In that sense, the social partners

AI can help to replace repetitive and monotonous tasks with more challenging or interesting tasks for the human. If managed wisely, this contributes to a positive working environment, specifically with regard to psycho-social risks.

in the European MET industries support an AI that augments and assists human labour. Digital solutions in the workplace must aim to improve productivity and quality. Furthermore, it is essential to guarantee that humans stay in control and that technological development is for the betterment of human beings. Digital solutions must augment and enrich human involvement.

Human-machine collaboration in a shared work environment in particular, however, can lead to new types of risk, that need to be addressed. The fundamental principle for the conception or the use of machines, for the manufacturers on the one side and the employers on the other, requires that the risk is eliminated or reduced, regardless of the technology used. In relation to the workplace and the implementation of AI, this is something which is set out in the EU Framework Directive which covers OSH risks. No matter what technology is used, it has to be ensured that all new types of risks are identified and addressed. The risk must be avoided and, when it is not possible, limited either by intrinsic safety or by the addition of control devices or other technical measures. These principles must be applied to machine learning and self-developing algorithms. Any system must have its purpose and its limits clearly defined upstream, in particular through the industrial specifications given by the end-users⁴. At the workplace, in any cases, the implementation of AI systems must be subject to consultation of workers or workers representatives according to national rules. Employers have the responsibility to take the necessary measures for the protection of workers.

³ Guidance or interpretation has to consider activities at EU level, especially the EU AI Act

⁴ The employer and workers are typically the end users of the AI system

More specifically, the risk analysis prior to the preparation of the creation of a robotic system, for example, must ensure that the workspace must be clearly defined and geared towards the human needs (ergonomic aspects, proximity, coherence between the angulation of the movements of the cobot and the human movement etc.), not the technological capabilities of the robot. Undue physical and cognitive workload related to AI deployment should be addressed. This is a condition for the success of the robotic application and its acceptability.

Machine learning and self-development algorithms that have not integrated these aspects upstream could also lead to cognitive underload and the deskilling of the worker, and reduce contact with other workers or managers. It could also make work more repetitive and lead to intensification of work. This has the possibility to increase psychosocial risks, such as isolation and fatigue, and lead to a perceived loss of autonomy at work. However, reducing employees' work to a monotonous monitoring of highly automated systems can and should be prevented. While relieved from the burden of routine tasks, employees can concentrate on more challenging tasks. In addition, it is also important to ensure that the industrial know-how that constitutes the experience of the company does not disappear. A software system, however autonomous and sophisticated it may be, will never be able to match the intelligence and the industrial culture. For example, in the design by digital twin, the consideration of human mechanical know-how remains indispensable. Automatic data management, however powerful, cannot do everything.

To make sure that the AI contributes to a meaningful and safe work environment, the worker and the employer must be adequately trained and should always have the possibility to maintain control over the machine. The scope for action for both the human and the machine, as well as the adaptivity and error tolerance, should when possible be evaluated in a clear and transparent way. The worker must always be aware of the possibility, and modality to intervene in the digitalised process.

Ceemet and industriAll Europe agree that social dialogue, in line with national practices, is an important tool to contribute to a safe and healthy work environment. This is a prerequisite to have sustainable Artificial Intelligence processes in industry, to improve the competitiveness of industry and to maintain jobs in the European Union.

Ceemet and industriAll Europe support an early stage consultation of workers and, where applicable, their representatives, when deciding on the introduction of new AI systems including the design, preparation of specifications for all relevant actors, development and deployment of the system. This will undoubtedly enhance trust in the technology and help the workers to make full use of the capabilities of the technology.

2. Human resource management

AI in human resource management (HRM) can be a helpful tool, as it substitutes repetitive and time-consuming tasks, such as managing leave or payroll. In recruitment, it can help identify suitable candidates for a given position based on criteria. Furthermore, AI can also support workers in their application process, i.e. by identifying skills that they would otherwise not have thought of. Customised skills development can also help workers in their individual career development.

However, AI in HRM is a particularly sensitive issue as it may neglect some interests of the employees. The quality of the output provided by AI depends on the quality of the data that is fed into the algorithm. If the data at input level is flawed, the recommendations provided by the AI will be distorted.

Data sets should be screened for biases on a regular basis. To prevent an algorithm from taking biased decisions, the final decision should when necessary be taken by a human. And the human should take an informed decision: they should check the recommendations on possible biases, and they should be properly trained to do so under consideration of intellectual property and ethical principles.

AI systems, when used at work must be in line with GDPR. The processing of personal data used by these systems must comply with all relevant legal regulations in the national and international context. To enhance trust in the systems, workers should always be aware of how their data is collected and used, particularly when AI is used to monitor or profile them, or when it recommends decisions on them. Monitoring should be targeted and always serve a clear and agreed purpose unlimited surveillance or monitoring must be prevented when this concerns human dignity. Furthermore, appropriate and transparent mechanisms to ask for an AI-based decision to be reversed must be in place, as required by law, to make sure that unwanted outcomes of algorithmic decision-making are reversible and can be trusted.

On HR matters, social dialogue plays an important role in addressing issues related to data, consent and protection of privacy. Social dialogue is an added value tool to discuss general aspects of the digital transition of a company in the context of employment relations.

Social partners, at company level, should work together to discuss on the implementation of AI at the workplace. Social dialogue is a helpful tool to discuss about the technology that is introduced at the workplace, and on the skills that are required to operate them, but also on the ethical dimension of AI including with regard to data collection.

3. Data and data protection

As AI is data-intensive, questions on how this data is being treated and how it can be protected are naturally important. As a principle, the data usage should happen lawfully, fairly and transparently.

Explainability is key: to enhance trust in the systems, people need to understand what kind of data is being collected from them and what the aim of the collection is, how their data is being processed and how the technology works, for how long it will be stored and how it is being kept secure.

As GDPR fully applies also in the employment relationship, discussions on the nature of the personal data being collected, on data minimisation but also on accountability are core to this debate. The collection of data must be linked to a concrete and transparent

purpose. In particular, data should never be justified with a possible, undefined purpose, in accordance with GDPR. Data protection impact assessments need to be up-to-date and easily

accessible to everyone concerned. In any case, data protection should be a major topic already in the early stage of acquiring a new data processing system.

In line with Article 88 of the GDPR, social partners can lay down, by means of collective agreements, specific rules to ensure the protection of the rights and freedom of employees with regard to personal data processing in the context of employment relations.

4. Skills

Having the right set of skills at hand will be decisive for a successful implementation of AI⁵ at the workplace.

Companies, workers, social partners, educational institutions and governments will need to undertake enormous efforts to bridge the skills gap that we are currently facing. Up- and reskilling of the existing workforce and early-stage anticipation of future skills needs are key for the digital transition. An integrated approach to skills development should be developed, from early childhood education to lifelong learning, to make sure that the students of today are ready to master the technology of tomorrow. This integrated approach should further aim at overcoming the gender imbalance in education and contribute to a fairer and more inclusive labour market.

AI literacy will become more and more important, not only at the workplace, but also in everyday life. Continuous and lifelong learning will be key to enable workers to stay up-to-speed with the technological developments. Workers need to be able to understand the purpose of the AI system.

Policy makers should invest massively, among others, on STEM related disciplines, VET and studies that are critical for the MET industries. Furthermore, communication campaigns should be put in place in order to encourage women and the young to access and follow STEM related VET, studies and disciplines. To assist workers and companies alike, social partners, should in line with national industrial relation systems jointly work on specific skills plans to accommodate ongoing and future changes. Training in AI skills should focus on the learning outcomes and lead to a full qualification, recognised through the certification of acquired skills, using a transparent and clear recognition system which allows comparability.

Collective agreements are an added value tool to identify and deal with the MET industries' skills needs and to channel investments into the qualifications of the existing workforce. Such agreements do already exist in some Member States. VET and re-skilling and training systems in general rely on social

⁵ According to the Digital Economy and Society Index 2022, businesses' adoption of key digital technologies, such as AI and big data, remains low. While the use of cloud computing reached 34% of EU enterprises in 2021, the uptake of big data analytics and AI technologies remains substantially more limited: only 8% of EU enterprises used AI (in 2021) and 14% big data (in 2020).

In addition, although 500,000 ICT specialists entered the labour market between 2020 and 2021, the EU's 9 million ICT specialists fall far short of the EU target of 20 million specialists by 2030 and are not enough to bridge the skills shortages businesses currently face. According to this same index, during 2020, more than half of the EU enterprises (55%) reported difficulties in filling ICT specialist vacancies.

dialogue and the close involvement of social partners.⁶ Social partners at company level should also assess which skills and competencies will be required in the near future, and how to make sure that these skills and competencies are imparted. It will be crucial to ensure that sufficient resources are allocated to training. Any initiatives, at national or EU level, must not interfere with the autonomy of social partners.

Only if the existing workforce has the chance to timely acquire the skills that are needed to operate newly introduced technology will a seamless transition be guaranteed. As a matter of fact, today⁷,

AI can help in these efforts, as it can be used to anticipate the skills needs of the future. If used wisely, it can help to match the skills supply and demand – and identify the right workers for the right job. This requires a well-trained and, to the maximum extent, bias-free algorithm, as well as well-trained operators who continuously check the data at both input- and output level for possible biases.

only 54% of people have basic digital skills. IndustriAll Europe and Ceemet therefore support the EU Commission's target of 80% of the European population to have acquired basic digital skills by 2030.⁸ Social partners will play an important role in meeting this target by helping

identify the required sets of skills and qualifications and making sure that the actions to be taken are targeted.

The job descriptions of the future will change – and so will skills requirements. Social partners should therefore work together to describe the world of work of tomorrow, to discuss the job profiles that will be relevant in the future, and what the transition into an AI-enabled industry will look like. A timely anticipation of the skills needs of tomorrow, and a forward-looking up- and reskilling of the existing workforce, are fundamental to the success of an AI that works for all. Forward planning of employment and skills, will be key to match the skills needs of the future and lifelong learning and access to continuous training for all workers, regardless of their age, gender, employment status or nationality

Conclusions

Ceemet and industriAll Europe agree that social dialogue is best placed to deal with all employment-related aspects of technology, including inequality, skills, the nature of work, work organisation and the prevention of discrimination. Continuous re- and up-skilling is a prerequisite of a successful introduction of AI at the workplace. Workers must be enabled to operate the system, to collaborate with it where this is required, and to accept new tasks when their initial tasks have been changed by AI. This already takes place in some member states based on existing collective agreements That also

⁶ https://agenda.industrial-europe.eu/uploads/documents/2020/12/637424087945515553_2020%2010%20Digitalisation%20statement%20EN.docx

⁷ European Commission digital and economy index 2022 (July 2022)

⁸ https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en

means that workers need to be able to understand critically the impact that AI has on their work, and how it will transform their own roles. It will help reap the benefits of AI, while at the same time protect workers and quality employment. Meaningful social dialogue will lead to enhanced trust in the technology, greater efficiency and a maximum level of occupational safety and health.

For the social partners in the European MET industries, it is clear that AI applications should not merely substitute human labour and industrial know-how or increase work intensity. They ideally should augment human labour, knowledge and industrial expertise, contribute to a maximum level of occupational safety and health, and protect humans from fatigue, undue physical and cognitive workload, a loss of autonomy at work, as well as any loss of the sense of purpose at work. It should be noted that in a globalised world, AI is necessary to ensure the competitiveness of MET companies. It also has the potential to decrease human error and improve the OSH of workers, however at the same time, it has the possibility to take biased decision.

The workers and their employers, adequately trained, should have the possibility to maintain control over the machine. Human intelligence should have the final say in decisions proposed by an algorithm.

In line with the constituent elements of Industry 5.0, which aim at building forward, better AI should always be sustainable, from a technological, social and environmental perspective.

Since AI at the workplace is not usually a stand-alone technology, but an integrated part of a work system, it is important to note that the repercussions of AI also always depend on the concrete configuration of the work system in which they are integrated. It is important to note that, when shaping the AI system in the employment context, we always have to proactively shape work organisation and the deployment of staff. That is to say: the social dimension must always be designed along the technical dimension of an AI system to make sure that the system is not designed to the detriment of quality employment. In other words, the human work organisation needs to keep pace with the technical work organisation. This means that the technical and social design will need to continuously evolve to make sure that emerging challenges are adequately and timely addressed. To guarantee a successful implementation of technological change, social partners at company level should work together on the introduction and shaping of new systems at the workplace, at an early stage.

ABOUT

[Ceemet](#)

The **Council of European Employers of the Metal, Engineering and Technology-based industries** is the European employers' organisation representing the interests of the metal, engineering and technology-based industries. Through its national member organisations it represents 200 000 companies across Europe. The vast majority of them are SMEs, providing over 35 million jobs of direct and indirect employment.

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IndustriAll European Trade Union is the voice of 7 million working men and women across supply chains in manufacturing, mining and energy sectors across Europe. We aim to protect and advance the rights of the workers.

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