Response of the Association of Nordic Engineers
to the European Commission's public consultation
on the White Paper on Artificial Intelligence – A European approach to excellence and trust

The Association of Nordic Engineers, ANE congratulates the European Commission for developing and opening for consultation the *White Paper on Artificial Intelligence – A European approach to excellence and trust*. This is a solid framework for Artificial Intelligence (AI) ecosystem in the European Union, and we are happy to see the focus on governance and trustworthy development of AI, where people and fundamentals rights are at the centre.

Our specific comments on: An ecosystem of excellence

- *Focusing the efforts of the Research and innovation community*

In more general terms, we consider that the funding to R&D in AI should be better prioritised among members states.

We fully support the idea of establishing a lighthouse centre of research, innovation and expertise in the EU to retain the best talents and attract more investments.

Efforts towards AI development must recognize the socio-technical nature of the development process. Expanding the **interdisciplinary orientation of AI research** will ensure deeper attention to social contexts, and more focus on potential hazards when these systems are applied to human populations. Trustworthy AI could be the competitive advantage for EU, and therefore **more prioritisation and investments are needed for ethical AI innovation and research** to strive.

In addition, and in order to position the European research as a frontrunner in the trustworthy development and deployment of AI, introducing **regulatory sandbox environments to test the use of AI** technology in a real-world environment **should be put in place.** European researchers have a lot of experience in developing approaches to design and verify AI systems, and in terms of securing the trustworthy AI, those efforts should be further endorsed.

The EU shall also serve as an example and **incorporate ethics by design in its own research projects**, which use machine-learning tools, to avoid discrimination or stigmatisation and to promote responsible innovation.

- *Skills*

We agree and endorse the European Commission's initiative to reinforce the Skills Agenda, as well as the focus on upskilling the workforce to become AI literate. Complementary to this, we would like to underline the widespread of **interdisciplinary approach in the education systems**.

Education for ethical considerations and guidelines is often insufficient in the technical disciplines and throughout work-life. This needs to be addressed through **changes in educational goals and priorities for technical subjects as well as through provision of relevant opportunities for lifelong learning**. Efforts to augment or even reform technical education is already happening at different levels, but this development

is happening either through grass-roots efforts or with the support of civil society and commercial actors. For these changes to become systematic however, it is clear **that governmental support is crucial.**

We call upon the governments to develop a **Hippocratic Oath for engineers and developers of AI systems** – a strong symbolic meaning of engineers and developers' power that must be used for good, which must become an integral part of the final examination.

Moreover, we would like to stress the need to **prioritise talent development and upskilling for girls and women**. The demand for STEM professionals is expected to be greater than what the market can provide if men alone are considered for the growth in STEM positions. Gender balance and diversity also contributes to diminish gender -biased data feeding the AI systems and by thus reflects better the complexity of our society.

Furthermore, we are pleased to see the reference to **social partners**, when it comes to ensuring a human-centred approach to AI at work. We have been working a lot with the questions related to our members' role, rights (including rights to upskilling) and responsibility around issues of AI and ethics. Supporting such deliberations and dialogue must not fall exclusively on the shoulders of the relevant stakeholders themselves, but **requires political backing, changes in the business operational models and investment to be sustained.**

- *Focus on SMEs*

We are glad to see the particular focus on SMEs to foster their ability to uptake AI and to come up with new innovative AI-solutions. In addition to this, we think that the focus should be **extended to also include a specific focus on ethical considerations**, which often is under prioritised due to primary concern of securing financing in order to remain competitive on the market.

In addition, **EU could introduce a program supporting the competence transfer** and hiring of highly trained employees that can support the uptake of new technologies and business models. The SME´s can receive grants when hiring a highly trained employee, but this may require changes in the EU competition law.

Our specific comments on: An ecosystem of trust: regulatory framework for AI

- On the point A. Problem definition
    - *Risks for fundamental rights, including personal data and privacy protection and non-discrimination*

Referring to the first paragraph p. 12 "…where the outcome could not have been prevented or anticipated at the design phase…." and linked to biases, we consider that the **emphasis should be put on awareness (revealing) and auditing biases**. This could be done by:

- ✓ Establishing training programs to deepen staff members' understanding of ethics and to develop skills for ethical reflection, debate, and recognition of biases.
- ✓ Creating an internal ethical review process that democratizes company decision-making by involving more people.
- ✓ Developing a set of internal standards and checklists about ethical issues in AI development, including the challenge of ensuring meaningful human control.
- ✓ Supporting and facilitating internal reporting of risks and violations, establishing rules for clear actions in response.

Specifically, on **privacy protection**, we would like to stress that special set of rules is urged to **prohibit employees' tracking and monitoring of their productivity via use of biometric technologies and smart wearable devices.** This is an intrusion into an employee's private life and infringement to work-life balance policy objectives.

- *Risks for safety and the effective functioning of the liability regime*

In order to be able to trace back potentially problematic decisions made with the involvement of AI systems, the concept of "**accountability by design**" for the AI systems should be anchored in the forthcoming legislative proposal. Accountable systems must include provisions explaining their conduct and decision-making, namely choices, assumptions and trade-offs made by the people who designed this system. The production of "accountability by design" AI development frameworks depends on strong notions of explainability. Therefore, the **explainability research,** which is currently only nascent, **should be better prioritised**.

We also stress **the need for establishing an independent verification body.** Machine learning systems themselves cannot be formally verified, but they can be encapsulated in other systems that process the output of the machine learning system and for instance only allow certain action to be executed. Testing and verification are not the same, but for safety critical systems, verification is often needed or at least thrived for.

- On the point B. Possible adjustments to existing EU legislative framework

We are pleased to see a reference to several existing legal acts applicable to AI. In support of this, we would like to stress that the **legal precautionary principle** (TFEU, Art.191) must be at the heart of technological development. This is the approach that can be inspired from the Environmental title of the aforementioned treaty to tackle issues of potential harm and contribute to ensuring that technological innovations are safe for society.

The uncertainty as regards the allocation of responsibilities, is a big concern for our organisation. **The responsibility cannot fall on the shoulders of an individual engineer or AI systems developer**, as they often operate in the organisational setting, where a disparate access to power in organisations is not to be neglected. By thus, the responsibility must be distributed across the process and its stakeholders, and organisations **must be imposed to establish a clear chain of responsibility and accountability** throughout the life of any technological system, which is also crucial to maintaining trust. By making the organisational chain of responsibility visible, organisations would display that they are committed to establishing accountability mechanisms in the face of potential harms. In the same time, it will also ensure the transparency towards the users when it comes to technologies for assessing/monitoring/developing processes within the companies. To question the ethical or social impact you must have an understanding on how the system works.

- On the point H. Governance and human oversight

We strongly support the attempt to outline the governance for AI, by outlining the vision of the institutional cooperation framework on EU level.

To further broaden the current proposal, there is a need to **strengthen participatory governance approaches** and create more spaces and forums for discussion to enable:

- ✓ Engineers and their organisations to clearly define the rights and the possible ethical problems in AI implementations. If standards are to be followed, they should be defined collectively.
- ✓ Trade unions and employee representatives be involved in the design, development and deployment of AI systems in the organisations before final decisions are made.
- ✓ Policy makers to sustain an ongoing dialogue with multi-disciplinary stakeholders.
- ✓ Organisations to establish an internal review process that democratizes company decision-making.

Ensuring the human oversight requires involvement of different stakeholders, and their roles must be clearly defined. **The governance should focus on socio-technical institutional structures**, as trustworthiness in part stems from the socio-technical institutional structures within which the AI systems are deployed. Hence, it would be wrong to assume that trustworthiness only equates to particular features of the AI systems themselves.

In order to ensure the human oversight, we also recommend **putting in place an external, neutral entity, such as "a model testing institute" to repeatedly audit AI systems.**

In addition, there should be **developed a clear appeal process and instance** with governmental oversight. Such a process must enable individuals and organisations to address the AI behaviour and decisions that they find potentially harmful. At the moment, it is unclear how people who are negatively affected might need to act and whom should they contact.

At last, we **recommend sustaining the EU AI Alliance** as the online platform to exchange best-practices and **create a yearly European AI event – the EU AI week** to allow knowhow sharing, identifying emerging trends and arbitrating policy and legal impact.

On behalf of the Association of Nordic Engineers,

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