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**DATA PROTECTION and ARTIFICIAL INTELLIGENCE - IS THE GENERAL DATA PROTECTION REGULATION (GDPR) “ARTIFICIAL INTELLIGENCE-PROOF” ?**

Seven decades after Alan Turing’s “intelligent machines”, what we conceive as Artificial Intelligence is anything but science fiction. What is making Artificial Intelligence the major trigger for the “Fourth Industrial Revolution” is not only, though primarily, the ever more sophisticated technological potential and the availability and processability of vast amount of data but also the fact that AI is no more “the domain of a few specialists” but also the fact that it has reached the every day life. AI systems are designed to anticipate outcomes about the behaviour, the preferences, the conduct of a person. Proﬁling and classiﬁcation algorithms determine how individuals and groups are assessed and managed while recommendation systems give users directions about when and how to exercise, what to buy, which route to take or even who to contact.

AI - in its interplay with Big Data, ambient intelligence, ubiquitous computing and cloud computing augments the existing major, qualitative and quantitative, shift with regard to the processing of personal information. Personal data and Artificial Intelligence are “a two -way street”: personal data feeds AI and AI produces more inferred data. AI may affect privacy in various aspects: informational privacy, including surveillance privacy, but also the autonomy of a person.

The questions that arise are of crucial importance both for the development of AI and the efficiency of data protection arsenal: Is the current legal framework AI-proof ? Are the data protection and privacy rules and principles adequate to deal with the challenges of AI or do we need to elaborate new principles to work alongside the advances of AI technology? Our research focuses on the assessment of GDPR that , however, does not specifically address AI, as the regulatory choice consisted more in what we perceive as “technology – independent legislation.

The paper will give a critical overview and assessment of the provisions of GDPR that are relevant for the AI-environment, i.e. the scope of application, the legal grounds with emphasis on consent, the reach and applicability of data protection principles and the new (accountability) tools to enhance and ensure compliance.

*In this respect, we discuss the requirements of fair processing in the context of AI applications.* Fairness concerns are raised with reference to biased algorithms that may lead to inaccurate or – mostly – discriminating outcomes. *We suggest that fairness is linked* to processing of personal data in an ethical manner, involves the requirement of values-sensible design/ responsible (research and) innovation and goes beyond the transparency obligations.  *Addressed are also the issues raised by the purpose limitation principle and the data minimization principle, which seem to be at odds with AI processing capabilities. We highlight the transparency element that is* articulated as a need to face the “opacity of the algorithm”. Complying with transparency obligations is related to major difficulties with regard to the accessibility and comprehensibility of information. Emphasis is given to the new principle tool of accountability, which refers also to the ability to explain the AI processing and the outcome thereof. Further, we discuss the introduction of Data Protection Impact Assessment as an innovative element of the Regulation that may serve to respond also proactively to unforeseen technological challenges and anticipate and/or mitigate the respective risks. Finally, we deal with the relation between GDPR legal requirements and AI Ethics: even if balancing as core part of decision making with regard to processing, does not consist in ethical assessments, we should include the examination of an ethical perspective.