

## **Abstract**

In connection with the development of autonomous systems supporting artificial intelligence technologies, respectively machine learning, there is a growing concern both in the public and in the media, as well as among legislators and developers. Naturally, such concerns have naturally arisen in the case of other, earlier technologies, but it is clear that there is something atypical in the case of modern technologies. The period when robots, artificial intelligence and other autonomous systems were only a sci-fi topic is already to some extent obsolete and autonomous systems in various forms have been reaching a large number of areas for several years and represent an integral element of the world around us. In practice, more and more companies are engaged in the development of autonomous systems equipped with artificial intelligence, especially the development of chatbots, autonomous vehicles or autonomous drones is nowadays a good example that the operation of similar systems is not so far from reality.

In the first and subsequent second chapter, the paper deals in general with an introduction to the topic of autonomous systems with an emphasis on artificial intelligence, respectively machine learning technologies, description of society's ideas of these new technologies, basic defining features of autonomous systems, robots and artificial intelligence.

The third chapter then deals with the rules of conduct of autonomous systems, the development of the regulatory framework and the role of law in the age of intelligent robots so as to ensure a sufficient degree of legal certainty and predictability. This part of the paper also contains an assessment of one of the most controversial issues related to artificial intelligence, namely the question of whether the concept of artificial intelligence as a person in law can work.

The fourth chapter deals with one of the most discussed areas, which is the issue of liability for the actions of artificial intelligence, especially in the context of the current concept of fault-based and strict liability, duty of care and liability for autonomous systems in the context of effective regulation and the possibility of applying different liability regimes, eventually their advantages and disadvantages.

The fifth, last and main chapter of the paper assesses the moral issues inextricably linked to the operation of autonomous systems, which can be generally divided into two categories - the so-called roboethics, and the machine ethics. The chapter also provides answers to some questions concerning the explainability and transparency of autonomous systems,

especially artificial intelligence, through analysis in order to achieve moral and trustworthy new technologies.