

**SUMMARY OF THE DOCTORAL DISSERTATION**  
**entitled "Data protection by design**  
**as legal instruments for personal data protection"**

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The subject of the following dissertation includes the issue of data protection by design as legal instruments for the protection of personal data.

In the 1990s, the concept of *privacy by design* was developed with the fundamental aim of addressing privacy concerns in relation to the design of ICT systems. The Canadian concept of *privacy by design* was also recognised in the European Union. Subsequently, it was adapted and introduced in a modified form into the system of EU legislation in the form of *data protection by design* and *data protection by default* in Article 25 GDPR<sup>1</sup>. This has contributed to the fact that data protection by design regulations has mandatorily been taken into account in the processing of personal data since 25 May 2018.

The institution of data protection by design and the similar regulations contained in the General Data Protection Regulation change the perception of personal data protection. The General Data Protection Regulation has introduced provisions that have led to a change in the model of responsibility for the processing of personal data, i.e. the obliged entity is now responsible for the effect achieved in terms of the effectiveness of the personal data protection,

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<sup>1</sup> Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC (General Data Protection Regulation)

rather than for the mere fulfilment of certain requirements (e.g. documentation). The institution of data protection by design and data protection by default introduces a new approach to the protection of personal data by incorporating a *risk-based approach*, supports the implementation of a *shift-left approach* to ensure compliance and security and thus effectiveness in the implementation of the rights and freedoms of data subjects, as well as emphasises the minimisation of personal data processing.

The aim of the following dissertation is to analyse and evaluate *privacy by design* and *data protection by design* due to the fact that there is a significant degradation of privacy and personal data protection due to the dynamic technological development. The aforementioned solutions remain particularly of great interest from a research perspective due to the interdisciplinary nature of the aforementioned solutions consisting in the application of appropriate technical and organisational measures in order to implement the requirements of Article 25 GDPR, which makes it important to look at the legal requirements from the perspective of existing or future technological solutions. The *privacy by design* model and the institution of *data protection by design* are important solutions that should be carefully analysed and assessed from the perspective of the rights and freedoms of natural persons. The outcome of the conducted research is to assess whether the data protection by design model, cfor the protection of personal data, is an effective and efficient legal tool from the perspective of the protection of the rights and freedoms of individuals.

Various research methods were used in the course of the research, in particular: the historical and legal-historical method (Chapters I and II), the comparative legal method (Chapters II-IV), the dogmatic legal method (Chapters II-IV), the axiological method (Chapter V) and the theoretical legal method (Chapters II-V).

The dissertation consists of an introduction, five chapters and a conclusion. Chapter I presents historical aspects concerning the identification and development of the right to privacy, the development of the system of international, European and national legislation on the right to privacy and the right to data protection, taking into account the relationship between the right to privacy and the right to data protection. Chapter II presents the historical aspects related to the development of *privacy by design* and *data protection by design* as well as the comparative aspects between these issues. It also discusses technical and organisational solutions (*Privacy-Enhancing Technologies* and *Privacy-Invasive Technologies*) that may have a positive or

negative impact on privacy and data protection. Chapter III analyses the institution of data protection by design from the perspective of the *Systems Development Life Cycle* in relation to other regulations contained in the GDPR, with the aim of perceiving Article 25 GDPR from a practical perspective related to the implementation of this institution and from a theoretical perspective in terms of the need for this institution to be included into the legal system. In Chapter IV, data protection by design was analysed from the perspective of certification mechanisms and non-legal solutions in the form of commonly used privacy standards, data security and maturity assessment models. Chapter V provides a detailed assessment of the data protection by design model and proposes legal and non-legal solutions that could improve the effectiveness of such ones.