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Information security, cybersecurity and privacy protection – Privacy enhancing data de-identification framework

Sécurité de l'information, cybersécurité et protection de la vie privée — Cadre pour la dé-identification de données pour la protection de la vie privée

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Foreword

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This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology,* Subcommittee SC 27, *Information security, cybersecurity and privacy protection.*

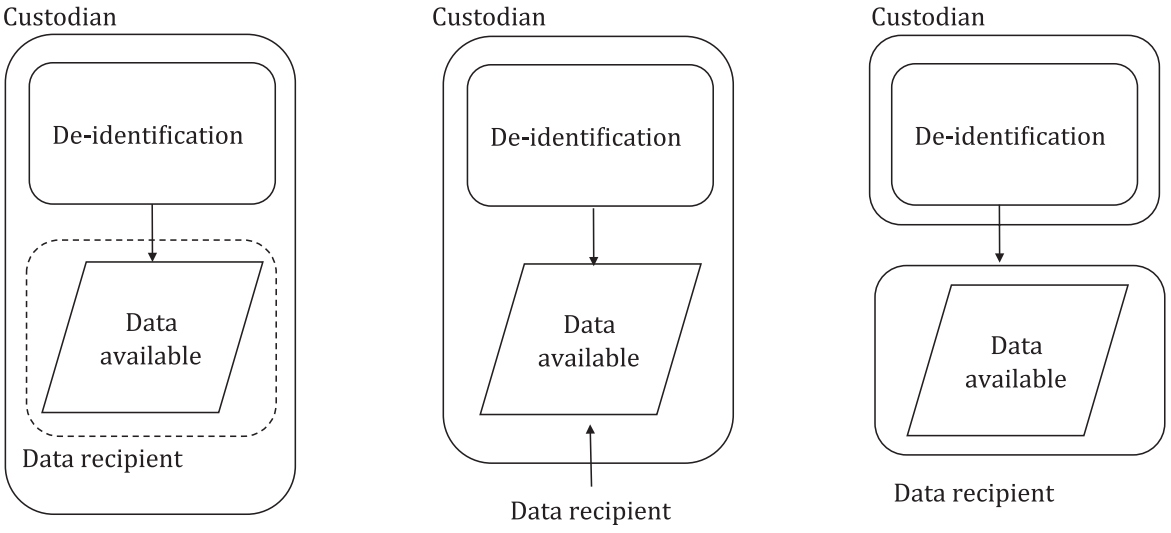
Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

Introduction

De-identification is one potential means for facilitating the use of personally identifiable information (PII) in a way that does not identify or otherwise compromise the privacy of an individual or a group of individuals. The appropriate use of de-identification techniques can support compliance with regulatory requirements and relevant privacy principles. However, the term "data principal" used in this document is broader than "PII principal" and, for example, includes organizations and computers.

In almost all cases de-identification requires, at the very least, an evaluation of the additional information available to an individual or group that can inappropriately reveal or uncover PII (which is referred to as an adversary, whether a data principal is identified intentionally or not), and how they can combine it to reveal or uncover PII. In short, de-identification requires an assessment of the environment and the circumstances in which the data are made available to data recipients. This considers what additional information is available to an adversary and the possibility of attacks and motivation to re-identify. De-identification also requires an assessment of the data. This determines how the additional information available to an adversary can be used to reveal or uncover PII and the possibility of re-identification, or identity disclosure, by itself or attacks of inference.

This document provides organizations with an implementation framework to govern the appropriate use of data de-identification techniques described in ISO/IEC 20889. This de-identification framework can be applied at any point in the data lifecycle: from designing the means of data collection, the internal reuse of that data, making data available to external partners, or archival. The data recipients can therefore be internal or external to the data custodian that is implementing procedures and practices in accordance with this de-identification framework. As shown in Figure 1 a), use and reuse implies the custodian maintains oversight over the de-identified data while making it available to an internal department or functional group. Figure 1 b) shows external sharing, which implies the custodian maintains oversight over the de-identified data while making it available to an external data recipient (e.g. through a virtual access portal, or a physical data centre). Figure 1 c) shows external release, which implies the custodian transfers oversight over the de-identified data to an external data recipient. In each of these cases, the process of de-identification itself can be transferred to a third party, separate from the custodian or recipient. Written agreements with the recipient determine how data made available after de-identification can be used, in accordance with applicable laws.



a) Use and reuse **b) External sharing** **c) External release**

Figure 1 — Data availability

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1 Scope

This document provides a framework for identifying and mitigating re-identification risks and risks associated with the lifecycle of de-identified data.

This document is applicable to all types and sizes of organizations, including public and private companies, government entities, and not-for-profit organizations, that are PII controllers or PII processors acting on a controller's behalf, implementing data de-identification processes for privacy enhancing purposes.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 27000, *Information technology — Security techniques — Information security management systems — Overview and vocabulary*

ISO/IEC 29100, *Information technology — Security techniques — Privacy framework*

ISO/IEC 20889, *Privacy enhancing data de-identification terminology and classification of techniques*

ISO 31000, *Risk Management — Guidelines*