# Identification for Accountability vs Privacy

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#### **Abstract**

This document considers the counteracting requirements of privacy and accountability applied to identity management. Based on the requirements of GDPR<sup>1</sup> applied to identity attributes, two forms of identity, with differing balances between privacy and accountability, are suggested, termed "publicly-recognised identity" and "domain-specific identity". These forms of identity can be further refined using "pseudonymisation" and as described in GDPR. This leads to the following forms of identity on the spectrum of accountability vs privacy:

- <u>Publicly-recognised identity</u>, which is a set of attributes that uniquely identify the person in the public domain. This provides high accountability but potentially exposes the person to privacy-related risks.
- <u>Unlinked domain-specific identity</u>, which is a set of attributes that only identify a person within the context of a specific domain and is not linked to a publicly-recognised identity. This maintains privacy but may have little or no accountability outside the domain.
- <u>Pseudonymised identity</u>, which is a domain-specific identity linked to a publicly-recognised identity within the domain. The set of attributes that publicly identify the person are managed within the domain separate from the domain-specific identity attributes associated with the pseudonym. This provides data protection and accountability outside the domain, contingent upon trust in the security (including business operations, and legal requirements) of data controllers and that they protect and do not misuse the identity attributes they manage.

It is recommended that the privacy and accountability requirements, and hence the appropriate form of identity, are considered in designing an identification scheme and in the adoption of a scheme by data processing systems. Also, users should be aware of the implications of the form of identity requested by a system, so that they can decide whether this is acceptable.

# Privacy vs Accountability

One of the main aims of digital identities for natural persons, such as proposed under eIDAS<sup>2</sup>, is to provide accountability of identified subjects for any actions on relying party systems. With digital identities, relying party systems can protect themselves against misuse, and in case of misuse occurring the natural person responsible can be traced and publicly held to account for their actions.

Privacy is also an important factor in the design of an identity management system. Under the GDPR (Regulation (EU) 2016/679) principle of data minimalization (Article 5 item 1c) states that "Personal data shall be ..... adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed". Thus, identification related data (i.e. attributes) should only include any personal data which is necessary for the purpose to which the identity is used.

<sup>&</sup>lt;sup>1</sup> Regulation (EU) 2016/679

Regulation (EO) 2016/6/9

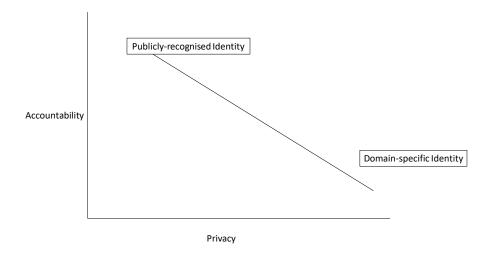
<sup>&</sup>lt;sup>2</sup> Regulation (EU) 910/2014 and proposed revision in COM(2021) 281 final

The requirements for accountability and privacy of identities should be carefully evaluated so that only minimal data required for the necessary accountability is released to a relying party. Depending on the form of identifier there is greater privacy or greater accountability as illustrated in the following diagram.

Two forms of identifier can be considered to represent the trade-off of accountability vs privacy:<sup>3</sup>

- a) <u>publicly-recognised identity</u> which is a set of attributes that uniquely identify the person in the public domain. This could be for example a national identity, such as taxpayer identification number, driving licence number, travel document number, and so on, that is unique to the identified individual (e.g. is attributed to the individual's name as registered at birth, current registered address, date of birth, and so on). In cases where contact information, such as an email address, are publicly known to belong to an individual, this may also be used as a publicly-recognised identity. Such real-world identities provide direct accountability but include personal data.
- b) <a href="mailto:domain-specific identity">domain-specific identity</a> which is a set of attributes that only identify a person within the context of a specific domain. This could be for example a customer number or cookie used by a web site that allows anonymous connections and does not require its users to provide further identifying information. Provided that these attributes are not associated with information that could identify a particular user outside the domain, such domain-specific identities provide minimal accountability outside the specific domain but maximise the privacy of the data subject.

This trade-off between accountability and privacy is illustrated in the following graph:



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<sup>&</sup>lt;sup>3</sup> Based on definition of identity given in ISO/IEC 24760-1.

## Pseudonymisation

According to GDPR (Article 4(5)): 'pseudonymisation' means the processing of personal data in such a manner that the personal data can no longer be attributed to a specific data subject without the use of additional information, provided that such additional information is kept separately and is subject to technical and organisational measures to ensure that the personal data are not attributed to an identified or identifiable natural person.

Applying pseudonymisation to an identity, (i.e. using a pseudonym in place of a publicly-recognised identity), this can be taken to mean: using an <u>identifier [personal data]</u> that can no longer be attributed to a specific subject without the use of additional information, provided that such additional information is kept separately and is subject to technical and organisational measures to ensure that the identifier [personal data] is not attributed to the [an] identified or identifiable natural person.

A "pseudonymised identity" could be used by a data processing system for day-to-day transactions without being linked directly to personal attributes. Any personal attributes, as required by the for accountability, could be established when registering with the system and held separate from data relating to data-to-day transactions. Such personal attributes may be derived:

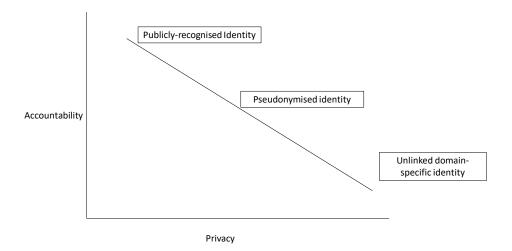
- a) Through separate transactions, subject to appropriate measures for data protection, using a publicly-recognised identity to register with the system;
- b) Through other means of identity-proofing such as physical or remote checking of identity documents.

### Recommended Forms of Identity

From the above discussion three basic forms of identity are recommended in this paper:

- <u>Publicly-recognised identity</u>, which is a set of attributes that uniquely identify the person in the public domain. This provides high accountability but potentially exposes the person to privacy-related risks.
- <u>Unlinked domain-specific identity</u>, which is a set of attributes that only identify a person within the context of a specific domain and is not linked to a publicly-recognised identity. This maintains privacy but may have little or no accountability outside the domain.
- <u>Pseudonymised identity</u>, which is a domain-specific identity linked to a publicly-recognised identity within the domain. The set of attributes that publicly identify the person are managed within the domain separate from the domain-specific identity attributes associated with the pseudonym. This provides data protection and accountability outside the domain, contingent upon trust in the security (including business operations, and legal requirements) of data controllers and that they protect and do not misuse the identity attributes they manage.

These three forms of identity can be illustrated on the accountability vs privacy spectrum as follows:



It is recommended that the privacy and accountability requirements, and hence the appropriate form of identity, are considered in designing an identification scheme and the adoption of a scheme by data processing systems. Also, users should be aware of the implications of the form of identity requested by a system, so that they can decide whether this is acceptable.