ABC4Trust Position Paper

Privacy-ABCs and the eID Regulation

The next generation of eIDs could bring strong and efficient data protection to European citizens with Privacy-preserving Attribute-based Credentials (Privacy-ABCs). In particular, the feature enabling users to just verify individual attributes instead of sending the complete set of identifying information is a leap for data protection.
However, the current wording of the draft Regulation on Electronic Identification and Trust Services for Electronic Transactions in the Internal Market (COM/2012/238, hereinafter: eIDR) would hinder the deployment of advanced privacy features. It thereby fails its aim to be technology neutral. The eID Regulation also disregards the data minimisation principle. Besides this, the architecture logically following from the proposal requires one or more centralised national online authentication services which could profile their users' behaviour.

The attribute selection feature

The currently used eID solutions in Europe are mainly based on the principle of clearly identifying a person. Likewise, existing authentication methods in the ICT area which are based on signed certificates containing the attributes of the user (e.g. X.509) aim at identifying entities with all attribute values contained in the certificate. Any usage of such an eID or certificate may expose a lot of identity information of the holder (e.g. name and age) to the party requesting the authentication for a specific purpose. But there are various scenarios where the user of such certificates unnecessarily reveals more information than needed. E.g. if proof is required that the user is of a given age, living within a certain municipality, region or country, is a student of a university or a pensioner, neither the identity nor the exact birth date needs to be known by the other party. Revealing more information than necessary not only harms the privacy of the users, but also increases the risk of information abuse (e.g. identity fraud) and furthermore enables linkability of the user's behaviour across domains. Processing more data than necessary also violates the principle of proportionality laid down inter alia in Art. 6 sec. 1 lit. c) and e) of the EU Data Protection Directive 95/64/EC.
Advanced eID and authentication schemes allow users to securely verify individual attributes and proofs over selected attributes (selective disclosure). Privacy-ABCs enable users to provide values of individual attributes instead of sending a whole set of identifying information. So, only revealing the place of living or the birthdate is possible. Also, calculations over such attributes can be done such as the verification that the birthdate is at least 18 years before the current date or that a person lives within municipality A, B, C or D without revealing the municipality. Beyond the current scope of eIDs used in eGovernment, banking or healthcare Privacy-ABCs are not limited to certain attributes, allowing e.g. to verify that one has a certain academic degree, is advocate, member of a group or similar. At this point, other schemas offering attribute selection such as the German federal eID ("neuer Personalausweis", nPA) fall short, but should nevertheless be mentioned as a privacy-preserving solution.

Scope of the eID Regulation

The draft of the eID Regulation serves the positive and useful purpose to remove barriers in the internal market for certain electronic interactions. For this, a Member State may notify an electronic identification scheme which it accepts itself to access public services demanding an electronic authentication (eGovernment). All Members States must recognise and accept foreign notified schemes for their own eGovernment applications. While the mandatory recognition of eIDs does not oblige service providers in the private sector to recognize foreign eIDs, the regulation clearly intends to set the stage for private services, cf. Recital 14 eIR. Therefore it will have a stronger long-term impact on the eID market than the narrow field of application may suggest at first sight. So it must be carefully tailored to data protection requirements, and be open for necessary adaptations to preserve privacy in the long term.
Besides eIDs the regulation also addresses trust services which are not object of this position paper.

Cornerstones of the eID Regulation

The Regulation of eIDs follows a series of central aims: From its wording and setup, the Regulation focuses on identification of individuals in the sense of an unambiguous link to a person, and Member States are liable for the unambiguity of the link, cf. Art. 6 (1) (c) and (e) eIDR.
The draft follows the approach to be technology neutral to avoid precluding any of the existing or emerging eID technologies. Member States must further ensure the availability of an online authentication service for their notified eID schemes. They may not impose any specific technical requirements on relying parties, cf. Art. 6 sec. 1 lit. d) eIDR. This excludes any requirements for relying parties to obtain specific hardware or software, cf. Recital 15 eIDR.

Data protection in the Regulation

Art. 11 eIDR already contains specific data protection requirements that are in line with the European Data Protection Directive 95/46/EC. However, this Article does not refer to the entities responsible for the provisioning of eIDs. As those entities collect data for the verification of the link to the natural or legal person to be identified later the applicability of data protection requirements should be clearly stipulated in this draft Regulation. The positioning of Art. 11 eIDR in Chapter III "Trust Services" further suggests that it does not apply to national authentication services. A clarification is necessary that authentication services are trust services in the sense of the Regulation and thus have to comply with all requirements in Chapter III including data protection.

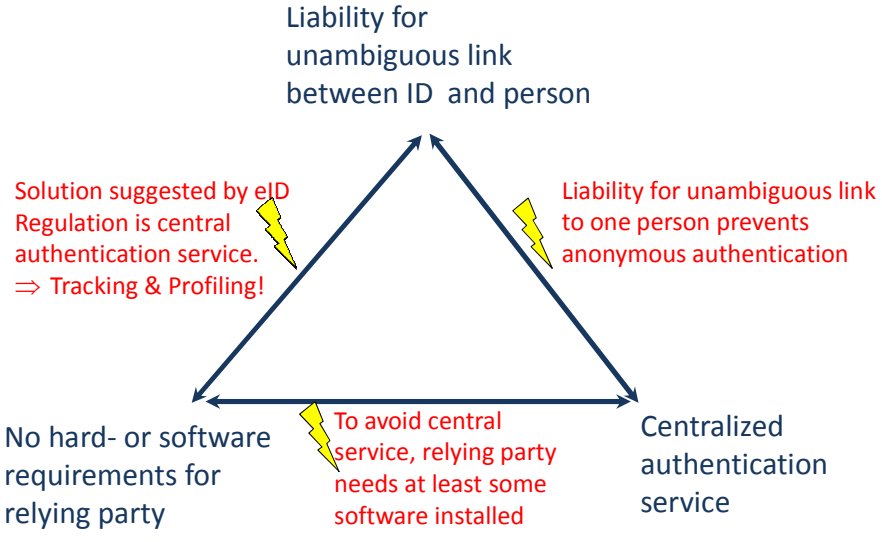

Figure 1: Pillars of the eID Regulation contradicting Privacy and technological neutrality

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Data protection shortcomings

The current draft of the eID Regulation has a series of shortcomings in the area of data protection and user-centric and self-determined identity management.

To provide the required national online authentication service that does not require specific hardware or software, the most obvious solution would be to set up one or several centralised services by the notifying Member State. Such a service would gain knowledge of the identifying attributes of the citizen which it must authenticate. To retain evidence in case of liability requests for inaccurate ID information, such a service is likely to create and store log entries of the authentication process. This information allows to **monitor and profile** the citizens concerned. If the relying party also identifies itself, user interests and communication behaviour additionally enrich the profiles gained.

The focus on identification and the requirement that the link to the person must be unambiguous together with the centralised verification architecture makes it hard to imagine solutions allowing authentication only with the attributes necessary for the transaction (see the attribute selection section above) or enable pseudonymous uses. It may even be hard to omit the transfer of unnecessary attributes such as the exact birthdate if only the name and address is necessary. In order to not **disregard the data minimisation principle,** the eID Regulation should at least require that individual attributes or derived values can be verified by the authentication service. While this does not solve the risk of profiling by authentication services this would be a major step towards data protection and may trigger further considerations to stop processing unnecessary attribute values. It would also partly preserve the advantages of privacy-enhanced eID solutions such as the German nPA.

Finally, ruling out any specific hardware or software requirements for relying parties accessing the national authentication services factually bans advanced authentication solutions such as Privacy-ABCs or the German eID. To fully function and provide their potential to enhance data protection inter alia by omitting a central party, Privacy-ABCs depend at least on software to be deployed by the relying party. Therefore the current **draft fails at its aim to ensure technological neutrality**. The ban of additional requirements for relying parties is understandable in the light of the mandatory mutual recognition and acceptance and the consequently following necessity to deploy and maintain such installations at all eGovernment services in Europe. However, it needs to be balanced in a way that reasonable efforts may be required to preserve the advantages of privacy-preserving solutions that exist (German nPA) or may be deployed boarder in the future such as Privacy-ABCs. Reasonable efforts to prevent such a **technological lock-in** may include the installation and maintenance of software that is available free of charge from the Member State notifying the eID scheme and that is easy to deploy such as browser plug-ins for user clients or a complete image to run a virtual machine at a central component of the relying parties' infrastructure.

Use cases in eGovernment

An argument brought forward in favour of the current principle of "technological neutrality" and against systems supporting selective disclosure had been a lack of use cases in the area of eGovernment. This misses that in particular processes necessary for **direct democracy** and enhanced participation rights could tremendously benefit from anonymous authentication. Petitions, polls, votings below the level of elections, and party-internal forming of opinions would profit from these possibilities. Privacy-ABCs allow setting rules flexible for different use cases such as allowing each person only to attend once or to cast up to 3 votes but not for the same person etc. The ability to engage oneself politically without the need to identify oneself could get persons involved in civil rights discussions that are currently frightened off by potential negative reactions of the government or the public – e.g. in the area of equality for same-sex partnerships, religious or ethnic minorities, or for announcing public demonstrations. This way direct democratic decisions and civil rights can be strengthened in the governmental sector and Privacy-ABCs ensure the necessary level of non-linkability for the protection of citizens.

Given our basis assumption that the Regulation directly influences the eID landscape and consequently also will be used by the private sector, the line of argumentation should not be limited to eGovernment.

Suggestions

The Regulation should be amended so that services are obliged to adopt state-of-the-art security and privacy-enhancing technologies. To avoid a lock-in at the present level of development and to ensure technological neutrality the architecture following inherently from the eID Regulation should be open for alternative approaches. Technical requirements for relying parties to verify foreign eIDs must be reasonable and should be free of cost but must not be totally excluded.

Trust services

Regarding the Chapter on trust services we support the introduction of the concept of electronic seals as a "signature" of legal entities. We particularly welcome that seals may properly depict the fact that someone is acting on behalf of another entity, here the legal entity represented. This concept may be further developed including the representation of natural persons e.g. by guardians or self-chosen proxies.

Regarding Art. 26 of eIDR we refer to the aforementioned concerns about centralistic validation services and tracking possibilities. In any case such a service must under no circumstances learn the content of the communication.

ABC4Trust at a glance

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SEVENTH FRAMEWORK PROGRAMME