

Personas as a basis for Context and Trust

(A primer on key aspects of Identity 3.0)

The Global Identity Foundation is an organization constituted as a “not-for-profit” foundation working with research sponsors and partners to facilitate the development and enabling the delivery of a viable decentralized global identity ecosystem;

- That is truly privacy enhancing
- That scales globally
- That supports all entities¹, not just people, in a distributed global, identity ecosystem
- That is globally acceptable to all parties; to consume identity attributes with a known level of trust.

Background - the basis for Personas

People use personas (collections of attributes grouped into a particular “facet” of their overall identity) in their everyday life. People segregate their identity into personas, allowing them to maintain privacy - only sharing attributes from a persona when they trust the person (or organization) they are interacting with.

Initially, say in a work environment, people will share their professional or work persona; attributes about their position and role within the organization and often their qualifications to perform the role they hold. After working for a time with colleagues, and gaining a level of trust in those colleagues, then people will be happy to share other personas with them, such a family, sporting or other interests. This sharing will be as a result of an internalized risk-assessment that humans perform of how much we trust those people not to abuse the knowledge of that persona (or its attributes) and how sensitive that persona may be.

Background - using Personas to provide Context and Trust

People use the attributes from Personas to give Context, thus increasing the levels of trust. A doctor, with a hospital issued photo ID, in a consulting room with their name on the door, working in a recognized hospital gives both context and a level of trust in that doctor (who you may never have met before) to share potentially highly personal and sensitive information.

Conversely, confidence tricksters use the way people process context to provide enough attributes and context to “con” them. We also see this in the digital world with faked (but similar) “from” email addresses and cloned web sites with fake (but similar) URL’s.

Digital Personas - Definitions²

- **Persona;** a collection or group of attributes that describe an entity in a particular contextual setting (a particular “facet” of an overall identity).
- **Digital Persona;** The digital join of two entities; one that is authoritative³ (and digitally signs) the attributes, and one that is the “owner” - the entity to which those attributes refer.
- **Sameness:** Identifiable as a unique entity - the same entity at first interaction, today, and tomorrow.
- **Authentication:** A known and understood method by which the entity is linked to their persona(s).
- **Context;** The ability to understand the digital join and who signed the attributes (as the authoritative source).
For example, Work persona signed by your employer, your date-of-birth signed by government.
- **Entitlement:** A set of rules (or an algorithm) by which two entities will be entitled to transact.
- **Issuing entity:** The entity that is authoritative for a set of attributes in a (digitally signed) persona.

The identity triangle

Starting with **Authentication** (normally humans use faces), this provides **sameness**; from there personas and attributes can be linked to that entity.

¹ Entities are: People, Devices, Organizations, Code & Agents. [Definition: Jericho Forum/Open Group]

² For a more complete set of Identity 3.0 definitions, see the separate “Identity 3.0 Definitions” document

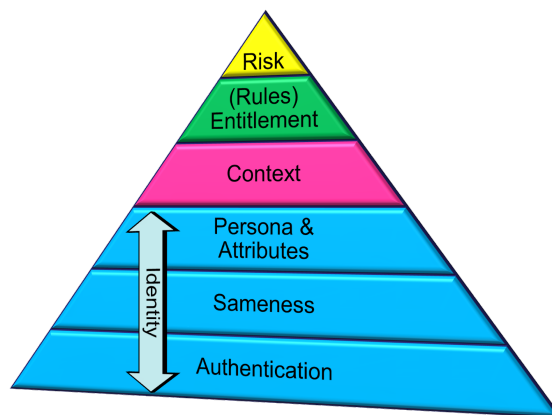
³ A self-asserted persona is the join between the same entity

Personas typically come in three types; for example: an address persona;

1. **Self-asserted** - "I live at this address".
2. **Inferred** - "When I visited them, it was at this address".
3. **Entity-signed** - "Here is my drivers licence with my home address on it".

Clearly the best level of proof is the entity-signed, next the **Inferred** as you have validated they do have some relationship with that address; and finally **self-asserted** where you need to take them "at their word".

Therefore the level of **risk** you choose to take will vary on the level of strength of the attribute and the level of risk-appetite (defined by the "entitlement" or rules) for the transaction.



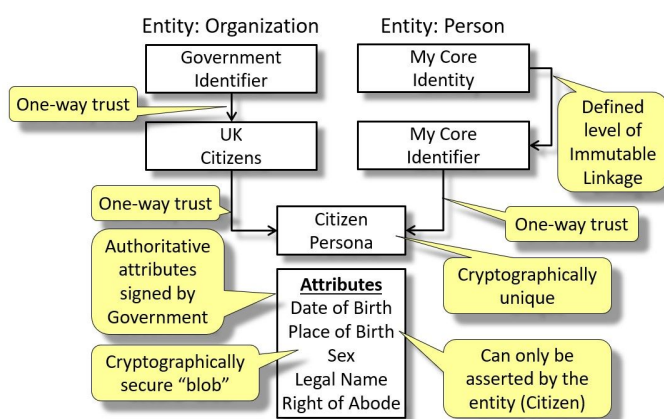
The design challenge

The challenge is to make this more robust, resistant to abuse, and ensure it works in the digital world; when you cannot "look a person in the eye".

Attributes of a digital persona

A digital persona is the join between an **issuing entity** that is authoritative for a set of attributes and the entity to which those attributes refer; thus a persona should only contain (signed) attributes for which the **issuing entity** is truly authoritative.

The example here is the UK Government which is truly authoritative for five attributes of a UK Citizen (as it issued the citizens certificate).



Expiring persona attributes

Just as a passport or driving licence has an expiry date set by the **issuing entity**, so the issuing entity should set the duration a persona it signs is valid. Being digital, this "lease" time can be far shorter, and set according to issuing entities risk-appetite as the signer; and differently for each entity; or set to "zero" indicating only a real-time validation will be considered authoritative.

The entity receiving the signed attributes is free to ignore the lease time on any asserted attribute and use its own entitlement rules - an example could be choosing to ignore the lease on date-of-birth; which never changes.

Persona Attributes	
Date of Birth	= 01 Jan 2000
Place of Birth	= London UK
Sex at Birth	= Male
Name at Birth	= John Doe
Citizenship	= Full British
Issued	= 01 Jan 2019
Lease Time	= 120 days
Re-validation	= gid.citizen.gov.uk

Renewing / revalidating persona attributes

The **issuing entity** signing the persona containing the attributes must provide a URL (as part of the issued persona) so that personas with expiring leases can be automatically revalidated.

Validating persona attributes

The receiving party is able to validate each attribute offered to it, validating the signature of the **issuing entity**, and thus make a risk-based (**Entitlement**) decision about whether to transact.

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