OpenID Connect 4 Identity Assurance

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Torsten Lodderstedt

CTO – yes.com

OpenID & Identity Assurance

- OpenID Connect increasingly being used in scenarios requiring higher identity assurance levels
- Examples:
  - Anti-Money Laundering
  - Telecomunication
  - eGovernment
  - Access to Health Data
  - Risk mitigation
  - Fraud prevention

Challenges

- Typically used with implicit attestation based on the context
  - RP determines trust framework based on IDP it connects to
- Ambiguous
  - What claims in result set are verified, what are not?
- Lack of metadata and evidence
  - Needed for mapping between regulatory/legal contexts, dispute resolution, and auditing


```
{
  "sub":"24400320",
  "email":"max@mustermann.de",
  "email_verified":true,
  "given_name":"Max",
  "family_name":"Mustermann",
  "birthdate":"1956-01-28",
  "place_of_birth":{
    "country":"DE",
    "locality":"Musterstadt"
  }
}
```

New: Identity Assurance Specification

- OpenID Connect for Identity Assurance
  - https://openid.net/specs/openid-connect-4-identity-assurance-1_0.html
- Representation for verified claims and associated metadata & evidence
- Enables legal compliance for mentioned use cases

Explicit Attestation

- Trust framework the IDP complies with
- Time of verification
- Verifier: what party verified the user‘s identity
- Evidence: which evidence where used
- Verification Method: how were the evidence verified

Verification Data Structure (Example)


```
"verification":{
  "trust_framework":"de_aml",
  "time":"2016-04-23T18:25:43.511+01",
  "verification_process":"e53ffeba-3219-45ee-a103-2c9d917f142e",
  "evidence":[
    {
      "type":"id_document",
      "method":"pipp",
      "verifier":{
        "organization":"Deutsche Post",
        "txn":"2ee7c266-802d-4f8b-b3d7-95fc07506a98"
      },
      "document":{
        "type":"idcard",
        "issuer":{
          "name":"Stadt Musterstadt",
          "country":"DE"
        },
        "number":"53554GJM4",
        "date_of_expiry":"2022-04-22"
      }
    }
  ]
}
```

German Anti-Money Laundering Act

Physical In-Person Proofing

External Verifier on behalf of IDP

Proofing via ID Card

International

- Working group members and contributions from UK, US, CA, CZ, SE, FR, ES, DE, and JP
- Looking for even broader group of participants!
- Specification can be used across jurisdictions
- Wiki page documents (growing number) of identifiers for
  - Trust frameworks, e.g. eIDAS, NIST 800-63A, Japanese & German AML
  - Identity documents, e.g. ID Card, Passport, Driving Permit
  - Verification Methods, e.g. „Physical In-Person Proofing and „Supervised remote In-Person Proofing“
- and use cases

No Ambiguities

- Claims with attestation are represented in data structure along with verification metadata
- Also allows to use existing OpenID Connect Claims alongside verified claims in the same transaction

Example


```
{
  "sub": "24400320",
  "email": "max@mustermann.de",
  "email_verified": true,
  "verified_claims": {
    "verification": {
      "trust_framework": "de_aml",
      "time":"2016-04-23T18:25:43.511+01",
      "verification_process":"e53ffeba-3219-45ee-a103-2c9d917f142e",
      "evidence":[...]
    },
    "claims": {
      "given_name": "Max",
      "family_name": "Mustermann",
      "birthdate": "1956-01-28",
      "place_of_birth": {
        "country": "DE",
        "locality": "Musterstadt"
      }
    }
  }
}
```

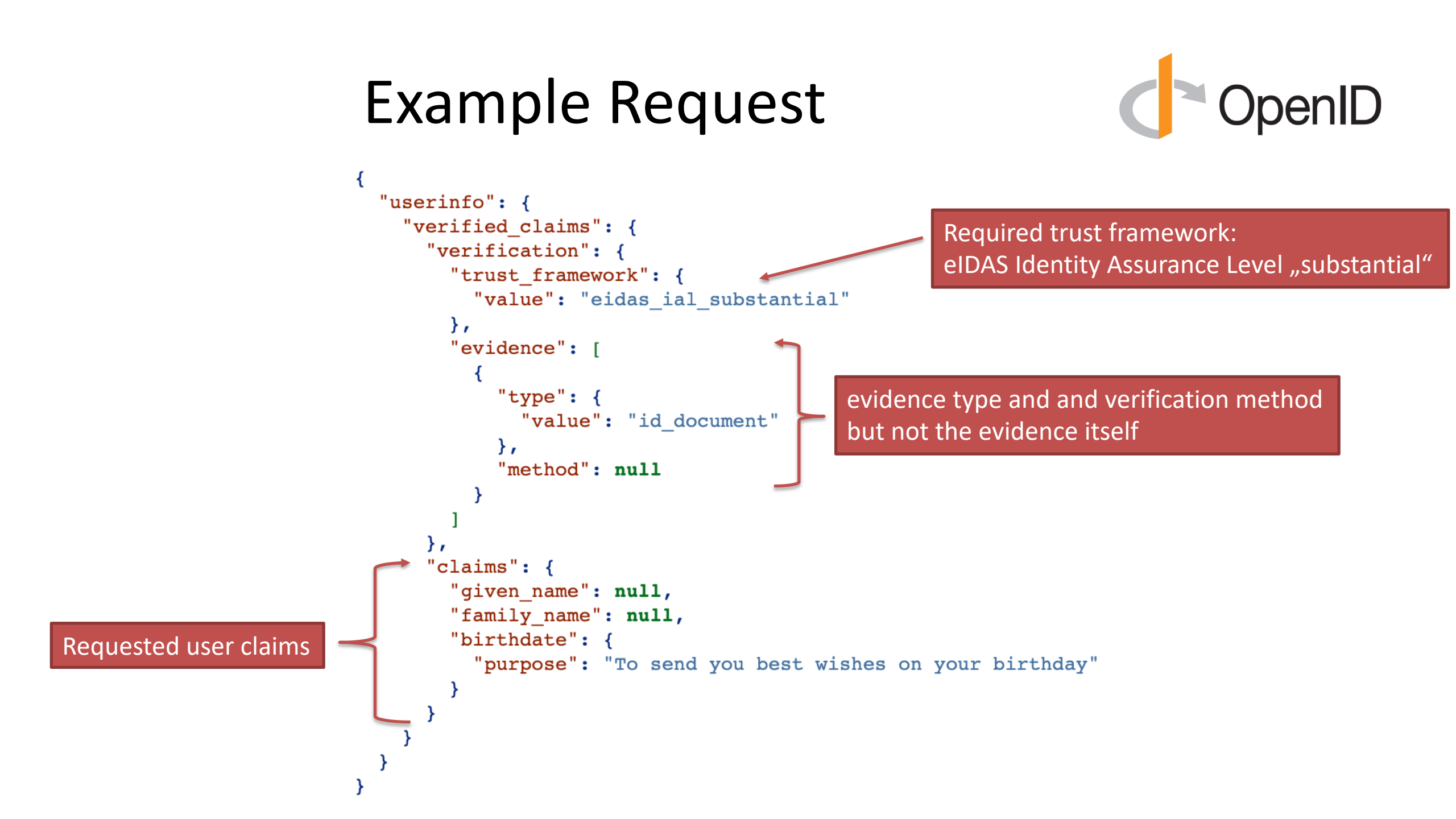
Standard OpenID Connect Claims

verified_claims
integrated data structure

Privacy Preserving

- RP asks for individual Claims and Verification data elements
- Purpose of inquiry can be conveyed (per transaction or individual claim)

Example Request



Versatile

- Representation can be used in a variety of channels (even beyond OpenID Connect):
  - ID Token
  - User Info
  - Access Tokens
  - Token Introspection Responses
- Support for aggregated and distributed claims allows combination of claims from different claims sources

Status

- 1st Implementers Draft approved in 11/2019
- Dedicated eKYC-IDA working group set up in 01/2020 https://openid.net/wg/ekyc-ida/
- 2nd Implementers Draft approved on 05/18/2020
- Several implementations (e.g. Connect2id, Authlete, id4me, yes®, …)

2nd implementers draft features

- Assertions may contain multiple „verified_claims“
  - Claims from different sources or verified using different trust framework/processes/evidence in the same assertion
- Clarification and simplification of request syntax and processing
- JSON Schema for requests and assertions
- IANA registry entries for new claims (JWT Claims Registry)
- Identifier extensibility based on namespaces
  - Trust frameworks, verification methods, id documents
  - Overview page on openid.net/wg/ekyc-ida/identifiers

Outlook

- Conformance Tests
- Additional Claims for mobile phone number and age verification
- Expression Language
- Work with potential adopters (TISA, European Commision, ETSi)
- Support Legal Entities