Advances in online identity verification

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15 November 2016, ISSE 2016
InnoValor’s identiteit: research-based advice & software

value through innovation

Digitalization in networks of organizations

Identity, privacy & trust
Strategic agility
ReadID – mobile identity verification software
Challenges for identity verification?

How to scale user registration to millions of users for an authentication service?

How to onboard new-to-bank customers without branches?

How to check online who’ll be staying in your house in the sharing economy?
Idensys (Netherlands)

1. 1 cent bank transfer
2. Photo of identity document OR NFC reading of chip
3. Selfie video with challenge (or selfie with liveness)

LoA 3 / substantial

Netherlands Idensys – Best practice remote identification -
https://afsprakenstelsel.etoegang.nl/display/as/Technische+specificaties+en+procedures+voor+uitgifte+van+authenticatiemiddelen
Bafin – German financial supervisor

1. Live video chat
2. Wave your passport in front of the webcam

BAFIN GwG (“not personally present”):
https://www.bafin.de/SharedDocs/Veroeffentlichungen/EN/Rundschreiben/rs_1401_gw_verwaltungspraxis_vm_en.html
1. Long list of identification methods, at various levels of trust. Combine 2 (or 3) to get an identity

2. LoA 2 -> with static knowledge or selfie
   LoA 3 -> only f2f or selfie (not implemented ?)

GOV.UK Verify – Good practice identity proofing and verification -
https://www.gov.uk/guidance/govuk-verify-checks-identity-providers-must-perform (GPG45)
https://identityassurance.blog.gov.uk/2015/10/20/making-gov-uk-verify-available-to-more-people/
Online self registration

Do you exist? / identification

ID document verification

+ 

Holder verification

Are you you? / verification
Online self registration

Fully automated?
LoA 3 or even 4?
Mobile-first identity

[GSMS, The Mobile Economy 2015]
Leverage what people have: ePassport + smartphone
How do passport chips work?

- RFID chip
  - verify authenticity, cloning protection
  - digitally signed personal information (name, birthdate etc)
  - high-resolution photo (and fingerprints)
  - Basic Access Control to protect privacy
Basic Access Control

Doc number, date of birth and date of expiry are ‘password’ to access chip

Machine Readable Zone
Which ID documents?

All modern passports (ICAO 9303 contactless chip), including all EU

In some of the ID cards with same chip (including NL)

Electronic driver license (ISO18013), but only few countries (NL since nov 2014)

Status on 16 March 2016 (ReadID showcase app): 116 countries
Holder verification

selfie?
Holder verification: need for a selfie?

A good selfie – lightning etc

A good face image to compare against

But most of all: liveness / anti-spoofing / user-present
chip vs photo-of-photo
Livenss is key!

- Technologies
  - Movement, blinking
  - Challenge-response – let user do something
  - Make recording unique by flashing screen
  - Reflections
  - Texture recognition

- Or, as a backup
  - Video recording with a challenge
  - Live chat a la Bafin
Take aways & contact

- Online verification is the missing piece of the puzzle
- ID document verification + holder verification
- Verify RFID chip in government ID document with smartphone
- Selfie with liveness | video recording | video chat

http://readid.com
https://youtu.be/j92z37G_KSk
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Which smartphones / OSes?

- Android 😊 - Over 85% of Android phones sold have NFC
  - Successfully tested with 451 different Android smartphones (status Feb 2016)
- iOS 🎈 - since iPhone 6 with NFC but need external NFC reader
- Windows Mobile seems possible

![Graph showing the percentage of Android phones sold with NFC from 2013 to 2016](image)

[In Netherlands, based on sold phones in high-end, mid-end and low-end, and percentage of NFC in these categories, April 2016]