

An overview of the online age verification methods for the protection of minors and their effectiveness

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Age Verification

More and more pressing issue

- Internet should not be a place outside the law
 - How to have the same limits/access online as in the physical world
- Several issues
 - Who is behind the screen?
 - 1 user = 1 login = 1 person?
 - What kind of guarantees do we want?
 - Block all underage? Let all legit users access? Both?
 - Do we take the physical world as a guideline? Should we do better?
 - Should we leak someone name when checking their age? To whom?
 - Should age verifiers be able to see who is consulting what?

A very complex balance



Verification with: A disclaimer



Just a Yes / No box

- UF: Everybody can lie, prevent accidental access
- Acc: No special expectation
- Ease of Use: One click
- Cost: Marginal
- Website: Learns nothing
- Verifier: None
- Safety: No information to leak

Verification with: A Credit Card



Testing a 0€ payment

- UF: Banking System. But 16+
- Acc: Need a bank account
- Ease of Use: Very easy
- **Cost:** Small processing fee (~0.10€)
- Website: Can Learn nothing
- Verifier: Learns both the account and the website
- Safety: Bad actors can get CC details, risk increases in case of 3rd party ads

Verification with: Facial Analysis



Using the webcam to estimate the user age

- UF: Good for users far from the limit
- Acc: Need a webcam
- Ease of Use: Careful of racial/gender biases
- **Cost:** ~0.30€
- Website: Can lean nothing
- Verifier: Learns the website
- Safety: Opening a webcam can help phishing

Verification with: An id-card, locally



Local analysis of an ID-Card

- UF: ID-card are hard to counterfeit, but lots of scans are available
- Acc: Need a *local* id-card
- Ease of Use: Need a way to scan the doc
- Cost: Marginal
- Website: Can Learn nothing
- Verifier: Learns the website
- Safety: Reliant on the fact that the analysis is indeed local

Verification with: A, ID-card, remotely



Sending an ID-card, and pictures remotely

- UF: Strenuous process, hard to counterfeit
- Acc: Need an id-card, webcam
- Ease of Use: Quite long (10-15 min)
- **Cost:** 1-2€
- Website: Learns the verifier
- Verifier: Has the ID, the website
- **Safety:** Bad actors have copy of id documents, even more dangerous in case of 3rd party ads.

Verification with: E-ID



Let's suppose access to an ID document, compliant with eIDAS.

- UF: As secure as a Credit Card
- Acc: Need a reader, and an id-card
- Ease of Use: Contactless
- Cost: Marginal
- Website: Learns nothing
- Verifier: Local check
- Safety: Bad actors can create flawed apps, but still are limited by the secure design of the id

Double-Anonymity to the Rescue

Proof of Concept developed with CNIL and PEReN

- Allows **standardized** protection of privacy
 - Very marginal overhead cost:
 - A yearly certification by regulators
 - A little more costly communication but negligible
- **Does not change** the flow / nature of the verification
 - No interference with the business model / billing
 - No need for dedicated "extra" apps

Very high overview of the PoC with CNIL and PEReN



General characteristics

The API is **compatible** with every age verification system

• No technical limitation, the legislator can pick those he finds suitable

The code is open, online for nearly a year

- Public audits are good, suggestions / evolutions are welcome
- Proposing a digital common is important in a digital context

A modular tool

- Possibility to integrate a mechanism to bill the verification to the platforms
- Various trust level can exist for verifiers depending on the context

Adversarial Approach

Age verification as a mean to **limit** access is **poorly** perceived by the public

- People might circumvent it directly (VPN ...)
- They might **share** token for access

Critical information is **processed** to do age verification

- Very bad actors could gather it directly -> Need for accreditations
- Approved actors can be hacked, so data **minimization** is the safe route

For a **better** reception by the public, it should also be used to **grant perks**

- Senior discounts / benefits
- Children exclusive groups / discounts

Let's wrap up

Age Verification has many forms so it is hard to strike the **right** balance

- **Ease of use** is very important.
 - 5 min delay -> only 1.7% of the (voluntary) users continuing through the process
 - 13% for CC / Facial Analysis
- A dedicated app can already be problematic
- **Balance** to be found between verification at account creation / periodical vs at every connection

It is **possible** to do a GDPR compliant solution

• A digital ID (**eIDAS** with some extra requirement) would help to have selective disclosure of attributes and so age verification

A **global** EU approach, with **local** variants is possible with our design



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https://github.com/LINCnil/SigGroup

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