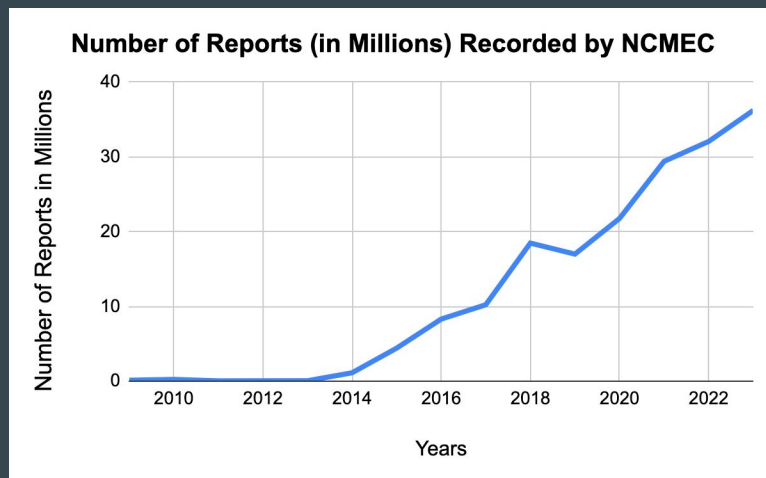


Child Sexual Abuse Material (CSAM)



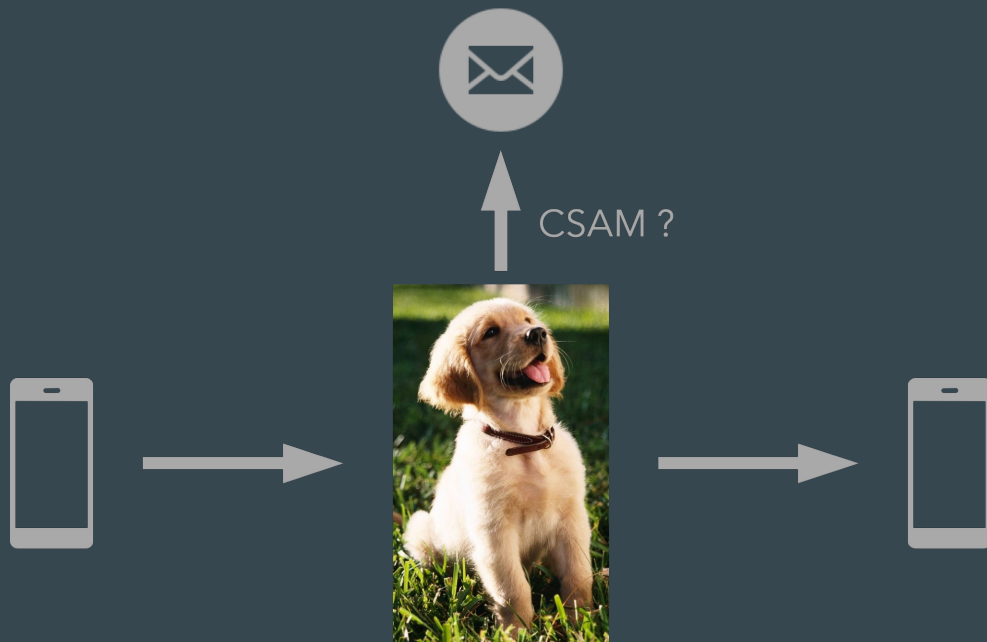
Signalement centralisé par
NCMEC

Tous les signalements reçu par
NCMEC sont partagé avec les
law enforcement agencies

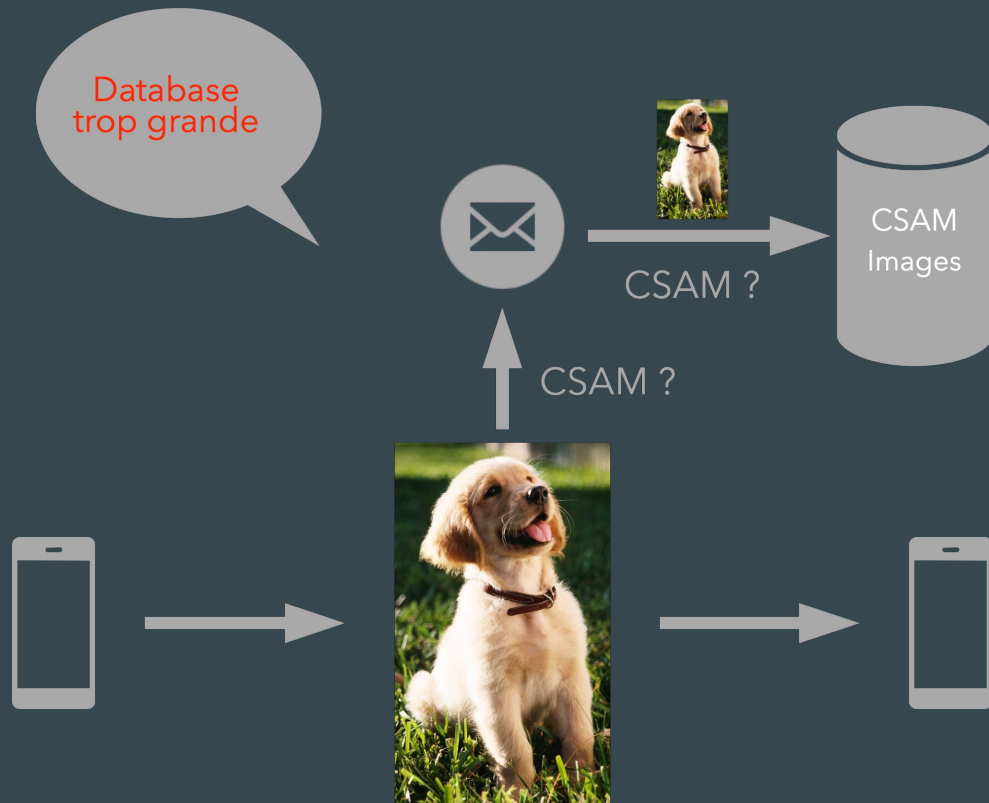
Position on End-to-End Encryption

- “Without technological exceptions to end-to-end encryption, the dehumanizing abuse of children will continue”
- Urges tech companies to “enhance consumer privacy while prioritizing child safety.”

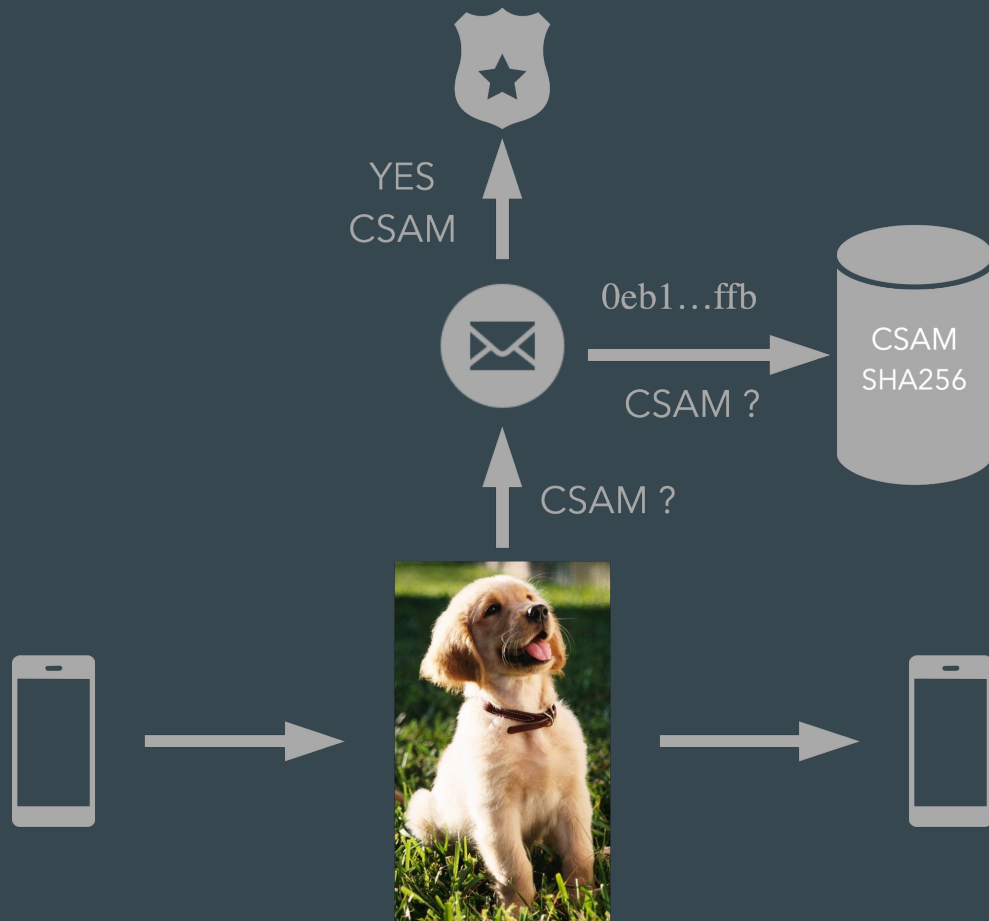
CSAM Detection



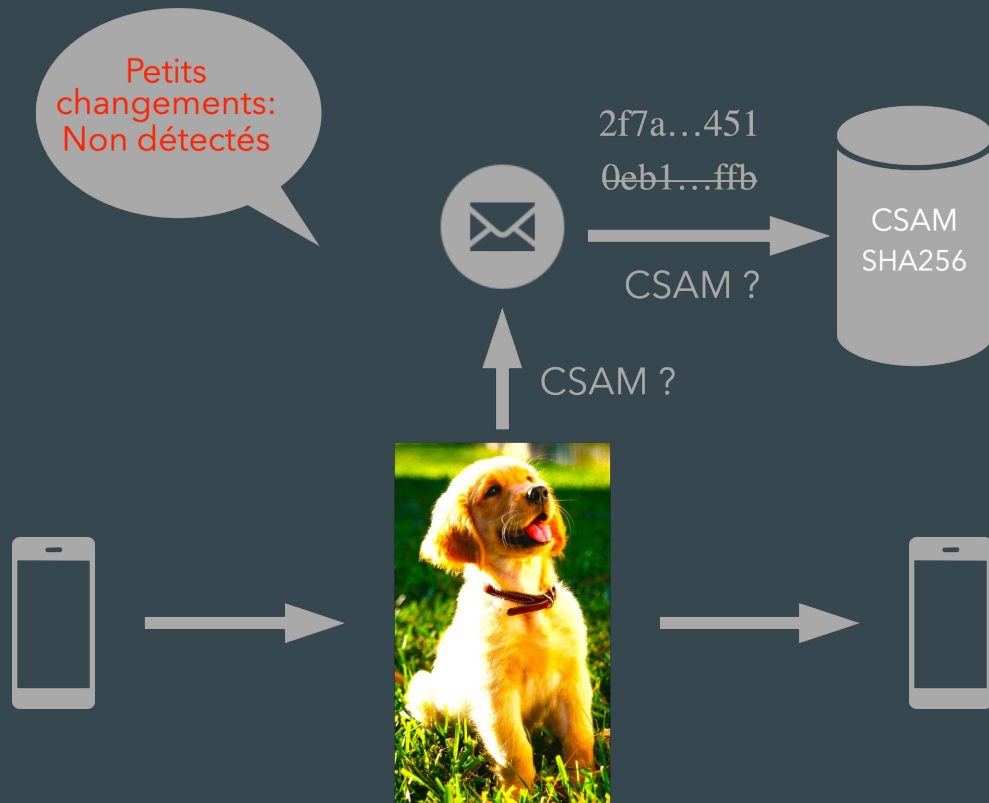
CSAM Detection



CSAM Detection



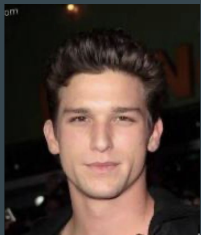
CSAM Detection



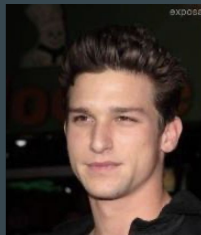
CSAM Detection

Perceptual hash functions principles

Similar images → Similar hashes

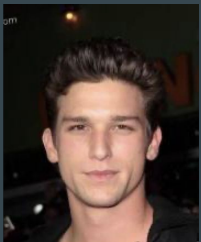


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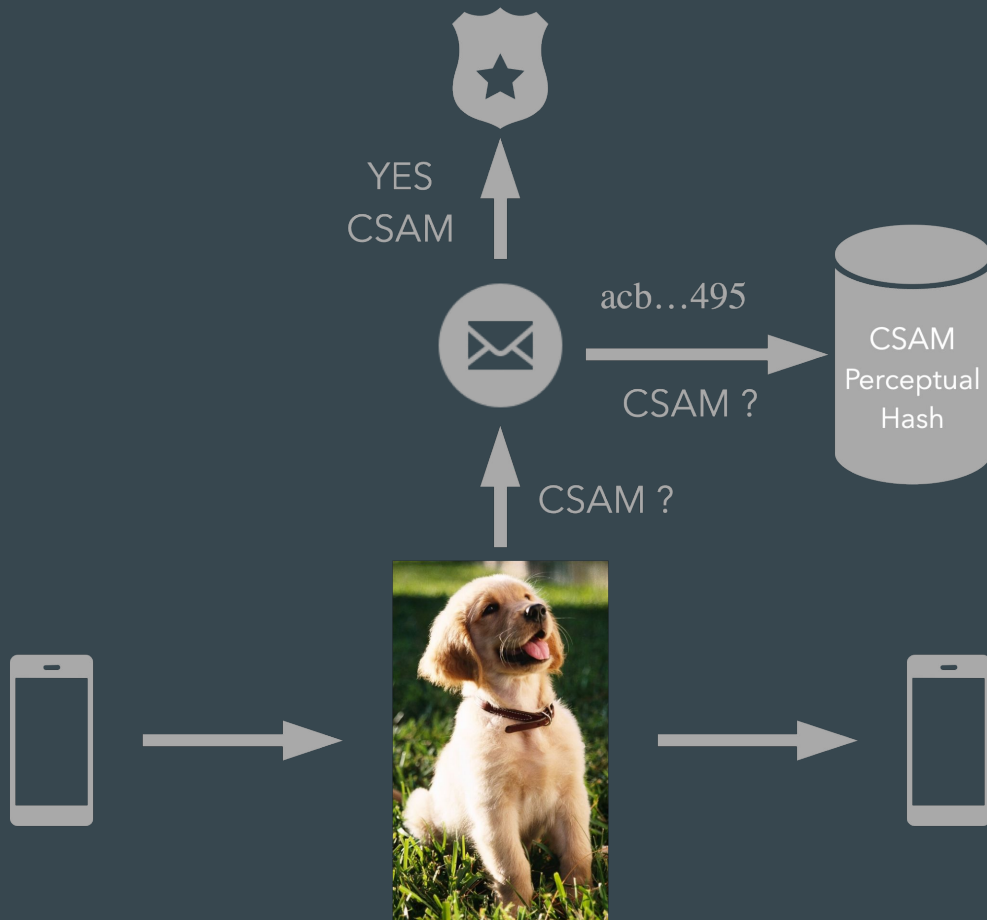
Different images → Different hashes



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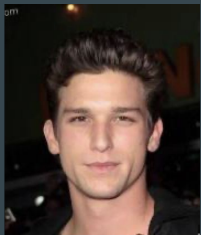
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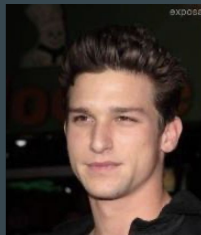
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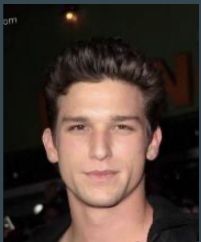


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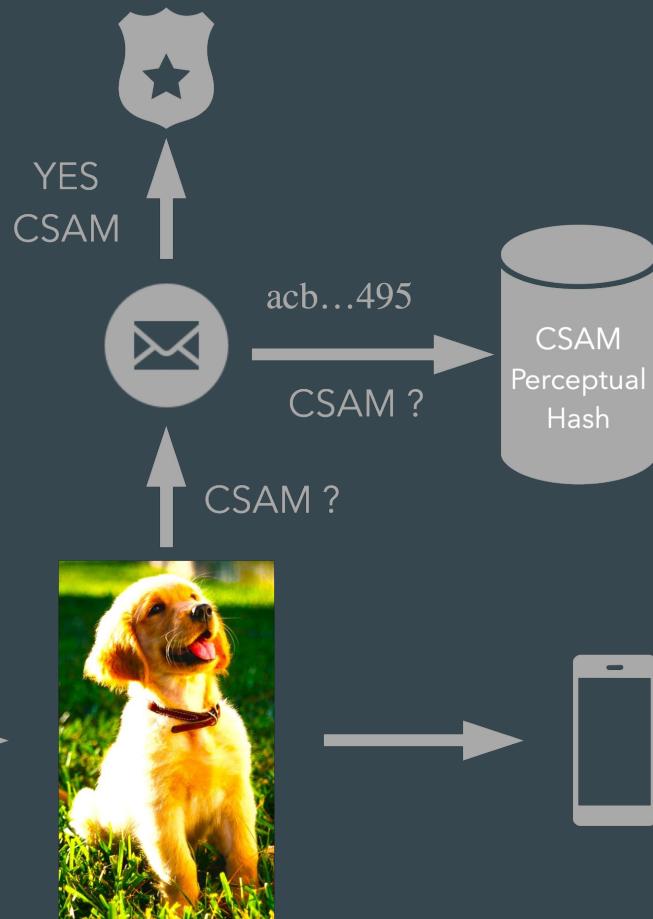
Different images → Different hashes



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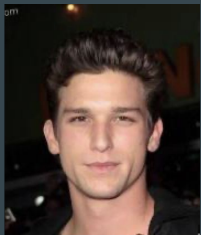
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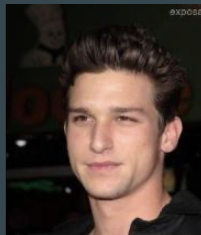
CSAM Detection

Perceptual hash functions principles

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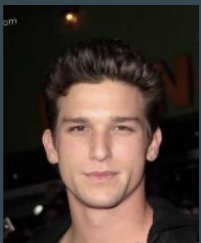


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Different images → Different hashes

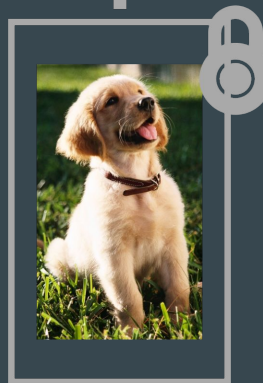


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Si chiffré:
impossible
de scanner

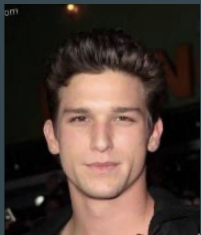


CSAM ?

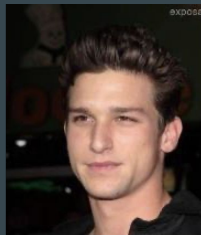
CSAM Detection

Perceptual hash functions principles

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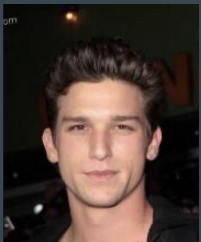


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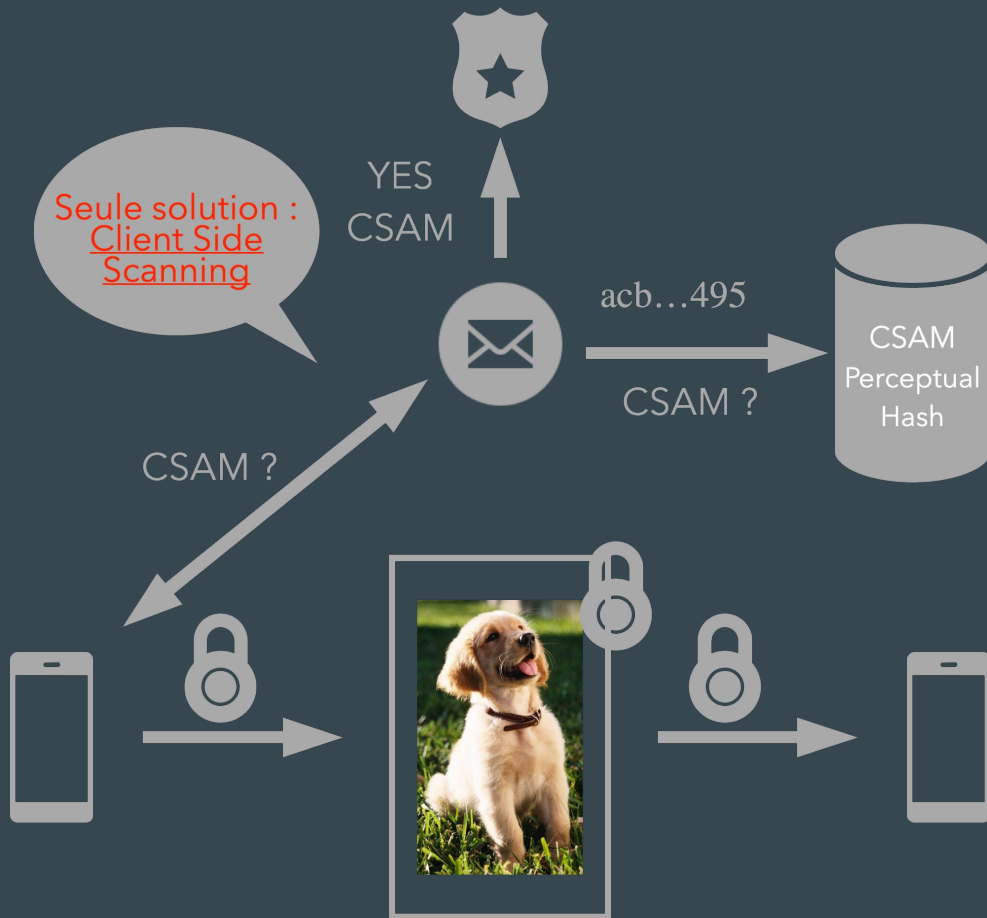
Different images → Different hashes



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Potential Privacy Concerns

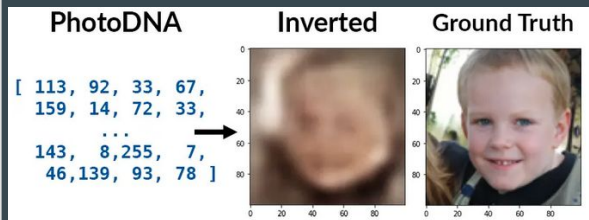
ChatControl Regulation

- **Discussion:** En cours depuis 3 ans
- **False Positives:** Innocent users could be falsely accused of possessing CSAM.
- **Client-Side Scanning:** Every photo and/or video on user devices is hashed.
- **Slippery Slope:** Allowing exceptions for CSAM could set a precedent for other exceptions.
- **Lack of Transparency:** The design, hashes, and parameters are not publicly disclosed.

Attacks on Perceptual Hash Functions



Collision creation



Inversion



Natural Collisions

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12 December 2024 : EU Council discussed ChatControl proposal

HELP STOP #CHATCONTROL!

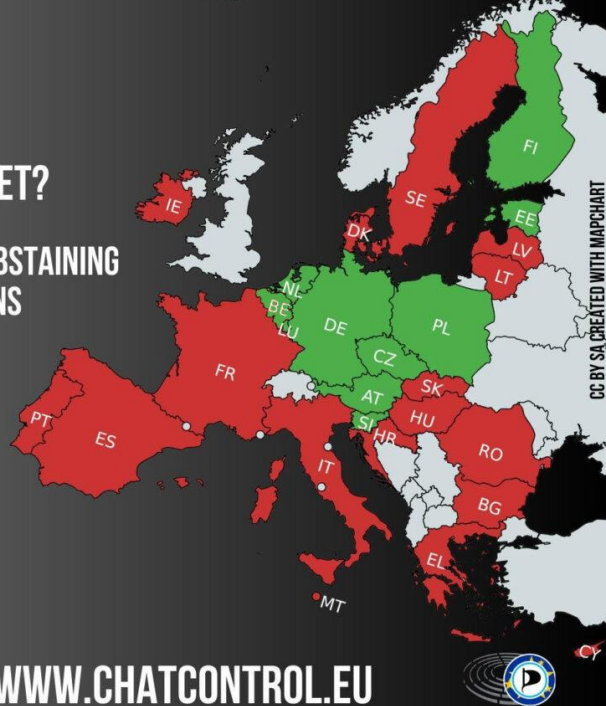
IS YOUR
GOVERNMENT
OPPOSING IT YET?

● OPPOSED / ABSTAINING
● NO OBJECTIONS

AS OF 12/12/24

Act now!
→

WWW.CHATCONTROL.EU



Very Weak Blocking Minority:

In Favor: 17 governments, 60% of the population

Adoption: 15 governments and 65% of the population

Only 5% population missing for adoption

France currently supports ChatControl

All the details, summaries, and explanations about ChatControl:

www.chatcontrol.eu

What Now?

Next Steps et référence

contact

QR code

qql ref

What we can do

- Sign open letters advocating for privacy and safety
- Discuss the issue publicly
- Conduct research analyzing proposed solutions and their consequences
- Advocate for open design and transparency in perceptual hash functions used for CSAM detection
- Defend end-to-end encryption
- Contact companies and policymakers to warn them about potential risks
- Research alternative solutions to (CSS)
- Stop research on potentially harmful technologies

"Just because we can, doesn't mean we should."

Current Status in Europe (ChatControl)

ChatControl Regulation

- 2021: Clear intention to define a regulation enabling the detection of CSAM
- 2021: Exception to the ePrivacy Regulation for CSAM detection
- 2022: First proposal rejected
- 2023: Second proposal rejected
- 2024: Third proposal not yet voted on, but discussions are ongoing
- 2024: Exception for CSAM detection extended to 2026

Key points

- Proposal for detecting CSAM in messages (images or videos) using External Service Providers (ESPs)
- Explicit mention of perceptual hash functions (e.g., PhotoDNA and NeuralHash)

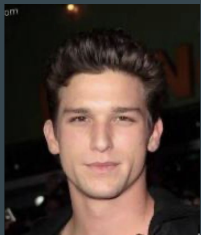
Top 3 Proposed Solutions

- **Full Hashing:** Perceptual hash on device; matches checked on ESP server. If matched, app reports the user and content.
- **Partial Hashing:** Partial hash on device; same process as full hashing.
- **Server Enclave:** ESP server decrypts, checks for CSAM, and re-encrypts non-CSAM content.

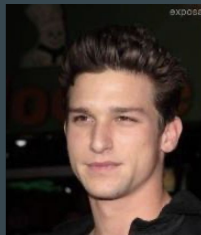
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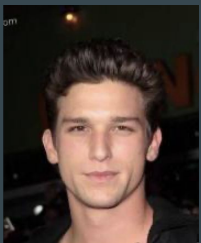


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Different images → Different hashes



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Detection process

1. Image Upload:

- The perceptual hash of the image is calculated.
- The hash is compared against databases (e.g., NCMEC's 17.5M entries).

2. Reporting:

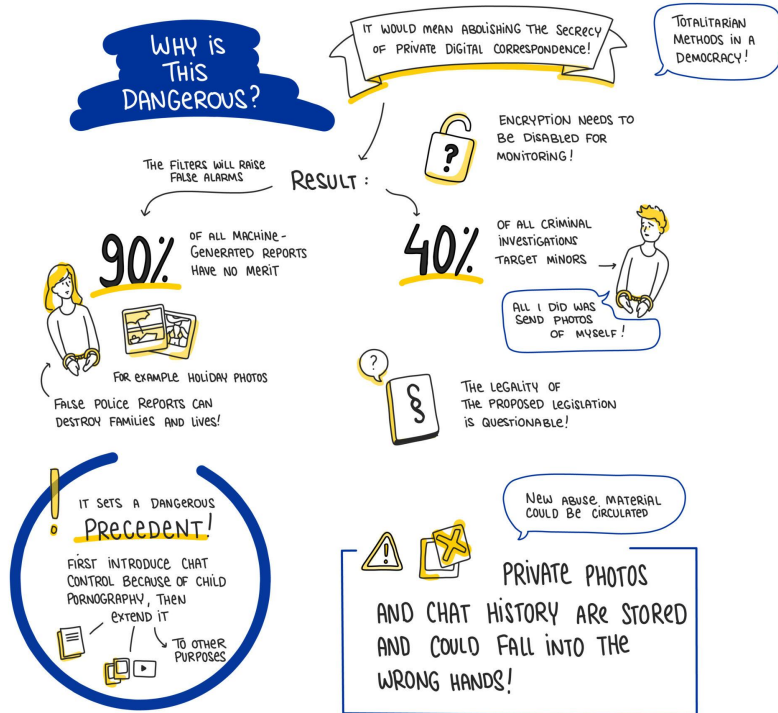
- If a match is found, the image and user are reported to NCMEC.

3. NCMEC Steps:

- All reports are shared with law enforcement agencies through a tool co-developed by Meta and the U.S. government.
- Collaboration between NCMEC and these agencies.

Exemples communication

CHATCONTROL

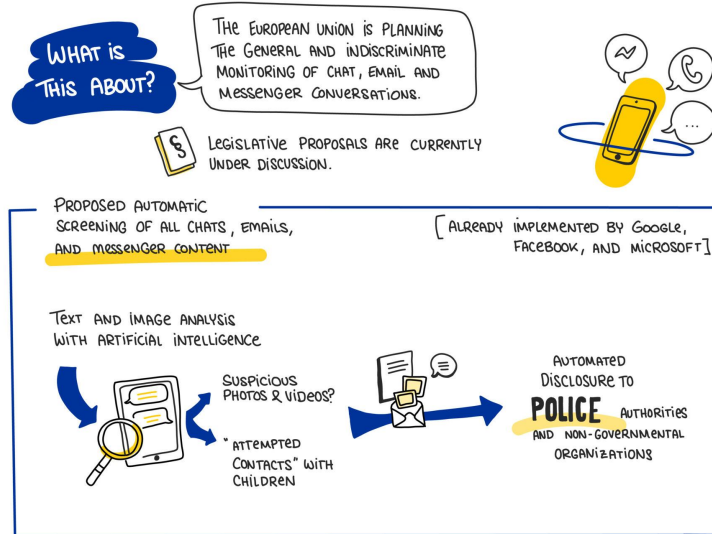


Lizenz: CC BY 3.0 DE

GRAPHIC RECORDING
@ LORNA SCHÜTTE

EU PLANS FOR INDISCRIMINATE MESSAGING AND

CHATCONTROL



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GRAPHIC RECORDING
@ LORNA SCHÜTTE

What Now?

- New regulations expected in the EU
- UK passed the “Online Safety Act”
- Australia passed the “Cyber Security Act”
- Propose alternative solutions
- Oppose security through obscurity
- Research is not neutral: The end goal matters.
- "Just because we can, doesn't mean we should."
- Engage and inform policymakers and companies

What about creation of
perceptual hash Server
Side Scanning function?

What Now ?

Current Status in Europe (CHATCONTROL)

- Temporary exemption from the ePrivacy regulation since July 14, 2021
- ChatControl: Rejected in 2022 and 2023
- End of 2024: Exemption extended until 2026 + Search for a new consensus

Key points:

- Preferred solutions: Client-Side Scanning (hash or partial hash)
 - Explicit mention of perceptual hash functions
-
- « PhotoDNA has been in use for more than 10 years by over 150 organisations [...] and law enforcement in the EU[...]. In these 10 years, the tool has been used daily and analysed hundreds of billions of images without any accuracy concerns»
 - “Rate of false positives is estimated at 1 in 50 billion” **Without sources**!

Elsewhere in the World

- Countries: US, Canada, UK, Australia, New Zealand
- **"Voluntary Principles to Counter Online Child Sexual Exploitation and Abuse."**
- Signed by: Google, Apple, Amazon, Meta, Microsoft, Zoom, etc.
- Explicit mention of perceptual hash functions.

- Deploying automated tools to detect duplicates of CSAM photos and videos based on existing, known imagery, such as robust hash-matching or URL-blocking technologies.
- Deploying tools or features designed to prevent the creation of, interaction with, and dissemination of, CSAM.
- Incorporating relevant CSAM hash-sharing databases, and keyword and URL lists, such as The National Center for Missing & Exploited Children's hash database, the Internet Watch Foundation URL list or the Thorn Keyword Hub.
- Employing safety-enhancing technology, such as machine learning classifiers or other tools to detect and remove never-before-hashed CSAM imagery.