Support to increase cooperation among industry, NGOs, and Member States’ authorities for the swift removal of child sexual abuse material online

CNET/LUX/2020/OP/0059

FINAL REPORT TASK 1: EXECUTIVE SUMMARY

Mapping existing CSAM data sets
Internal identification

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EXECUTIVE SUMMARY

This document represents the executive summary of the Final Report for Task 1 of the project “Support to increase cooperation among industry, NGOs, and Member States’ authorities for the swift removal of child sexual abuse material online” (hereafter “the project”) with the contract number CNET/LUX/2020/OP/0059, prepared by PwC EU Services (hereafter “PwC”) together with the Expertisebureau Online Kindermisbruik (hereafter “EOKM”) for the Directorate-General for Communications Networks, Content and Technology of the European Commission (hereafter “the Commission”). Its purpose is to outline the findings and conclusions that result from the activities of Task 1. All activities were grounded in research and justified as to how they contribute to the overarching goal of Task 1, which is to map existing legal data sets of online child sexual abuse material (CSAM)1 and child sexual exploitation material (CSEM).

CSAM is defined as material that depicts child sexual abuse or focuses on the anal or genital region of a child3. Since the internet gained popularity in the early nineties, the quantity of online CSAM has become impossible to quantify. Perpetrators of abuse can produce and distribute CSAM quickly and in multiple channels, while those seeking this material can access and redistribute it with ever increasing ease. Furthermore, children and adolescents are producing and sharing, or being coerced into producing and sharing self-generated sexual images at increasing volume, with ever younger children falling victim to this trend4. Moreover, despite the availability of IT solutions assisting the fight against online CSAM, the decentralisation of efforts has resulted in an inefficient detection and removal process, that is at risk of being contaminated5. A pan-European effort to coordinate support for technologically based solutions should be the first of many actions to begin regaining traction in the battle against online CSAM.

Given the current situation, the project intends to increase the interoperability and interconnection of the data and systems operated by relevant stakeholders. The project seeks to offer recommendations as how to connect existing CSAM data sets to enable proactive and swift detection and removal of online CSAM. The first step in doing so, and which makes up Task 1, is to conduct a comprehensive and wide-reaching review of existing CSAM data sets and tools. The review was primarily informed by the results of an online questionnaire disseminated to parties relevant in the CSAM field and in-depth interviews with these same parties. Secondary research was used to mitigate knowledge gaps and gain understanding of the broader context of the project. A review of previous CSAM-related projects funded by the Commission in the last decade was conducted to understand the full scope of the project subject.

All research initiatives sought to gather information on the following seven topics:

1. Technical attributes of existing data sets of CSAM and/or CSEM;
2. Data governance, quality control, and protection processes;
3. Third-party engagement;

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1 To obtain a copy of the Final Report for Task 1, please contact the European Commission by e-mail at CNECT-G3@ec.europa.eu
2 Child sexual exploitation material or CSEM is another key term here. Since a discussion of the broader category of CSEM is relevant to any discussion of CSAM, in this project, we will also keep CSEM in mind.
5 In this project contamination refers to a loss of data quality in a data set. In reference to the detection and removal process, contamination may refer to duplications of content that result from a lack of communication between stakeholders.
The purpose of the first topic is to understand what and how data is being collected and managed within existing data sets of CSAM and/or CSEM, and to sketch the broader technological landscape. These findings will inform recommendations as how to effectively integrate disparate data sources, and how existing technologies can be leveraged to support the efforts of the project. Through primary and secondary research, insights were gathered around the purpose for data collection, the data collected, the classification of data, hashing techniques, data formats, data set architecture, and technological solutions and tools used within the CSAM field. The key findings resulting from this research are as follows:

- There are four overarching purposes for data collection that are in line with mandates guiding data collection by the parties interviewed for this study: investigation, notice and takedown, ensuring a clean service\(^6\), and data sharing.

- The data collected within existing data sets of CSAM and/or CSEM varies widely. Hashes of CSAM and/or CSEM are most commonly collected, followed by original visual content from which these hashes are generated. Some organisations enrich their data sets with automated and manually generated metadata.

- There are two meanings to classification: classifying material as CSAM, which is illegal; and classifying material as exploitative but not illegal in a given jurisdiction, often with the label of CSEM. Classification is largely guided by international and national legislation. Classifications are most commonly verified through a single or two analysts. AI has been adopted by some participating parties as a means of filtering or classify data.

- Data sets owners employ several hashing techniques, with SHA-1, SHA-2, MD-5, and PhotoDNA, among the most common. Video hashing techniques are being used more broadly as the volume of such continues to rise.

- Visual content within existing data sets of CSAM and/or CSEM primarily takes form in common image formats, such as PNG and JPEG files, video formats, and gifs. Hashes and metadata are stored as text, XML, or JSON files. The Video Image Classification Standard (VICS) developed by Project VIC defines a data protocol and model standardising data formats and connectivity.

- Existing data sets of CSAM and/or CSEM are growing at vast and unpredictable rates. The most common options for data storage are flat files and SQL databases, although many organisations are utilising multiple storage solutions to accommodate different data types. Hybrid hosting solutions are more widely adopted, as are the use of APIs to securely connect with data sets.

- The use of technology within the field of CSAM is wide-spread, and ranges from cloud solutions for hash data storage to artificial intelligence used to identify new

\(^6\) In the context of this project, “clean service” refers to a service that is free of CSAM and/or, if desired by the party, CSEM.
cases of online CSAM. Collaboration between stakeholders across different sectors and jurisdictions is prominent.

The focus of the second topic – data governance, quality control, and data protection – is vital to consider for any technologically focused organisation, especially those operating in sensitive industries such as the field of CSAM. Data governance and quality control processes improve the integrity of data, data protection policies ensure both victim and user rights are protected. Findings from this research topic will guide recommendations as how to effectively manage a connected source of sensitive data, and ensure individual rights are protected. The key findings resulting from this research are as follows:

- The specific data governance processes in place vary between organisations within the field of CSAM. Typically, specific teams are designated to perform data governance activities.

- All participating parties have a data protection policy, which for companies based and/or operating in the EU must comply with the GDPR. Data protection measures in organisations largely revolve around access management.

To facilitate the global effort against the distribution of online CSAM, many parties managing CSAM and/or CSEM data sets allow third-party access. While there are many benefits to this, third-party engagement is often subject to legal and technical challenge. These difficulties, alongside the different types of, and legal basis for third-party engagement were investigated as part of the third research topic. Findings from this research topic will guide recommendations as how to effectively manage third-party engagement across international jurisdictions. The key findings resulting from this research are as follows:

- There are numerous ways in which third parties engage with a CSAM and/or CSEM data set, including: hash-checking, contributing hashes, data distribution, victim identification and reporting, blocking access, and monitoring access.

- The legal basis for third-party engagement varies greatly per country and organisation. Sharing hash data, video fingerprints and/or similar data containing CSAM proves difficult in European Union (EU) Member States, as it is often either not permitted or unclear whether it is permitted by law. When it is legally possible to share data sets with private sector parties, this commonly occurs under a MoU or licence agreement.

- Third-party engagement is subject to legal, technical, and resource challenges.

The purpose of the fourth topic is to sketch the current landscape of classification systems and tools that stakeholders within the field of CSAM use. Through primary and secondary research, insights were gathered around the different classification systems, their underlying purposes, and criteria considered. Moreover, challenges in CSAM classification resulting from differences in legislation and jurisdiction were also explored. All findings will inform the design of a harmonised, multi-level classification system for the categorisation of CSAM that is relevant both within the EU and internationally. The key findings are as follows:

- Classification systems are used to classify content as CSAM and/or CSEM. They are dependent on the purpose of the organisation, as well as national legislation. Several classification systems based on (often) related but distinct sets of criteria exist, including the Baseline criteria, COPINE scale, SAP guideline, Oliver scale, Sexual Offences Definitive Guideline, Grey Area, and the United States technology sector classification system.
• Challenges in CSAM classification result from differences in legislation, jurisdiction, and classification systems used.

• Legislation-based classification using characteristics such as age/maturity is challenging in the absence of data to validate or corroborate an analyst's assessment. In countries where proof of age is not required for inclusion of content in a CSAM/CSEM data set, classification will be based on a degree of subjectivity. This makes dual or triple verification an essential part of the process.

• Classification of content has an impact on the wellbeing of analysts in different ways.

Research indicates that CSAM is considered personal data in all its forms and therefore falls within the scope of the General Data Protection Regulation (GDPR). It is therefore important to be up to date on international and national legislation regarding collecting, storing, and sharing CSAM data or data sets. As such, findings from the fifth research topic – database-related legislation – outline the legal provisions for using CSAM data sets as a special category of personal data to be processed for reasons of substantial public interest according to the GDPR and national legislation. Moreover, findings outline the legal difficulties that may be encountered when processing and sharing CSAM data, and highlights potential gaps between legislation, policy, and practice with regard to sharing such data. The key findings resulting from this research are as follows:

• Under the GDPR, personal data is defined as any information relating to an identified or identifiable natural person, whether directly or indirectly. Given this definition, visual content, URLs leading directly to CSAM and/or CSEM, and (salted) hashes of CSAM and/or CSEM are considered personal data and fall within the scope of the GDPR.

• The GDPR regulates the collecting, storing, distributing, and processing of CSAM and CSEM data within the European Union or any such activity undertaken by a controller or processor established in the EU, regardless of whether the processing takes place in the Union or not, thus establishing the rules and regulations governing the ability to process CSAM and CSEM data. In Australia, Canada, and the United States, national legislation regulates which parties can process CSAM-related data, and to what extent.

• As CSAM and CSEM are considered special categories of personal data, the GDPR restricts the way that they can be shared when European stakeholders are involved. Original examples of CSAM and/or CSEM are commonly shared between LEAs both internationally and nationally, but never with non-law enforcement organisations. While some law enforcement agencies may share hash lists based on original media with authorised third parties, this is not legally possible in every country. In some countries, obstacles to sharing hash lists relate more to policy and process than to the law.

• Although CSAM and CSEM are considered special categories of personal data, it is a matter of debate whether hashes derived from CSAM and CSEM can be considered special categories of personal data instead of regular personal data. It can be argued that the fact that CSAM and CSEM contain special categories of personal data does not render the hashes, and even more so salted hashes, a special category of personal data by association.

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7 Article 9, paragraph 2, sub-sections c and j of the General Data Protection Regulation.
The findings of the sixth research topic – CSAM-related legislation – provide in-depth explanations of the criteria for the internationally recognised Baseline criteria developed by INTERPOL, and the legal framework governing CSAM classification in the EU, namely the Directive 2011/93/EU. Research also highlights the fact that the EU Member States are obligated to at least penalise acts outlined in the Directive 2011/93/EU but can implement stricter legislation. This section outlines what content must be considered when assessing legislative differences and provides an overview of these differences between the EU Member States, Australia, Canada, the United Kingdom, and the United States. These findings will inform all recommendations that result from this research, as compliance is essential. The key findings resulting from this research are as follows:

There is no universally agreed definition of CSAM or child pornography as the term used in most international laws and conventions. Furthermore, not all countries have legislation, or comprehensive legislation on CSAM. The 9th Edition (2018) of the Child Sexual Abuse Material Model - Legislation & Global Review report by the International Centre for Missing and Exploited Children stated that: (1) 16 countries still had no legislation specifically addressing CSAM; (2) Of the remaining 62 countries that had legislation specifically addressing CSAM, many limitations and gaps were identified.

The Baseline criteria developed by INTERPOL offers an international standard whereby visual content meeting the criteria are very likely to be illegal in any country with CSAM legislation.

- Directive 2011/93/EU sets a minimum standard of illegality for EU Member States and is stricter and more expansive in its criteria for what should be considered CSAM than the Baseline criteria. The Directive grants Member States the ability to implement stricter legislation.

- CSAM related legislation differs greatly by country. Australia, Canada, the United Kingdom, and the United States enforce legislation that is stricter and more expansive in their criteria for what should be considered CSAM than the Baseline criteria. In Australia and Canada, the baseline criteria have influenced or been integrated into national classification systems in a proactive effort to increase international alignment and facilitate the sharing of data.

As a seventh avenue of research, an extensive review of previous projects funded by the Commission in the field of CSAM over the last decade was conducted. The purpose of this was to evaluate the long-term impact of similar initiatives. Findings suggest that thus far, the Commission has pursued many avenues, including awareness-raising and prevention, tooling and processes for detection and removal of problematic material, detection and dismantling of criminal activity, and prosecution of offenders. Moreover, this review highlights gaps that have arisen as a result from the emergence of new technologies and user behaviours and remain to be addressed.

Task 1 lays the foundation for the remainder of this project, and the research initiatives described aim to ensure it is comprehensive and relevant to the current landscape. Any solution built on the outcomes of the project aims to effectively facilitate the swift detection and removal of online CSAM, thereby contributing to a safer internet for all.

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