Editorial

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Welcome to the second edition of the GRACE project newsletter!

Unbelievably, GRACE is approaching the 2nd half of the project and recently we have been busy preparing for the first project review that took place in January.

The 19th edition of Safer Internet Day will take place on 8th February, 2022. Under the recurring theme 'Together for a better internet', the day calls upon stakeholders worldwide to come together and join forces to make the internet a safer and better place for all, especially for the youth. Making children safe online is at the very heart of GRACE's mission.

We are proud to report on the progress made so far towards making the project a reality: providing law enforcement agencies with a unique set of tools to support their investigations against child sexual exploitation material (CSEM). Some of the highlights are detailed below:

- Use cases and technical requirements of the integrated GRACE solution have been further defined following the collaboration of the technical and Law Enforcement Agency (LEA) partners in a **workshop held in October 2021**.

- The first version of GRACE ontology is now available is now available following a close cooperation between technical and LEA partners, this has led to a hands-on proposal harmonizing the vocabulary and semantics on Child Sexual Exploitation Material (CSEM) cases from their own perspective.

- GRACE has also concluded a first development cycle, this has generated the first wave of analytic and annotation tools for CSEM, all co-designed and tested with the engagement of LEAs.

- The design and inception of the Federated Learning System has now concluded, this has paved the way for deployment of the system in a real-life environment. The first testing on training the Artificial Intelligence (AI) models following this paradigm has been concluded and we are preparing its adoption for our analytics tools and its roll out later in the year.

- Networking with our sister projects and other initiatives is moving forward. A technical workshop has taken place with the PREVISION project exchanging the ontology results, the GRACE platform will also be showcased in 2022 in the AI for Safer Children-UNICRI Knowledge Hub.

- During this time GRACE has recieved inestimable feedback and contributions from the external Advisory Board and Ethics Board, composed by relevant stakeholders in different disciplines relevant to the fight against CSEM in organizations such as NCMEC, NCECC, Europol, INTERPOL, UNICRI, University College York and INHOPE.

The next 6 months of GRACE will be key to the success of the project. The second development cycle will be carried out leading to a crucial second Pilot with LEAs, during which the overall progress and performance of the proposed system will be tested and demonstrated.

All the efforts outlined above will be accompanied by the ongoing co-creation process with LEAs, the definition of training materials aimed at Law Enforcement officers, and networking with other initiatives such as **AIDA**, **PREVISION** and **Thorn**, whilst further reflecting on the future exploitation of the resulting GRACE platform and tools.

As a reminder, we've included a quick recap of what the GRACE project is all about on the following page. If you'd like to find out more please or get in touch follow us on **Twitter** or visit the **GRACE** website. Thank you for your continued support on this very important project.

Peter

GRACE Workshop at Europol

About GRACE...

GRACE is a H2020 research and innovation project that aims to safeguard Child Sexual Exploitation (CSE) victims, prosecute offenders and limit the spread of CSEM (Child Sexual Exploitation Material) by providing LEAs with a next-generation AI-powered investigative platform.

The project began in June 2020 and will end in November 2023. It is funded by the European Commission and has a total budget of almost 7 million euros.

GRACE includes partners from 14 Member States, with a broad geographic spread, that will drive basic and applied research. The composition of the consortium is driven equally by the needs of the law enforcement community and by applied research opportunities in CSEM.

Vision for GRACE

Address CSEM referrals
Provide a scalable and validated route to directly address the growing backlog of CSEM referrals from online service providers to EU Member State LEAs.

Deploy a federated-learning infrastructure
Implement a secure and privacy-aware, federated learning infrastructure for beyond state-of-the-art content classification within CSEM across Europe.
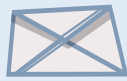
Automate the analysis of CSEM content
Deliver a semi-automated CSEM content analysis and prioritisation mechanism that enables LEAs to better safeguard victims and apprehend offenders.

Track trends in online CSEM
Facilitate LEAs' ability to track short and long-term trends in the production, dissemination and consumption of online CSEM to inform preventive strategies and policy decisions.

Key project activities

I•ANITA project final workshop

In October 2021, GRACE was invited to participate in the final workshop of the affiliated H2020 project **ANITA**. GRACE presented its work to an audience of LEAs, public entities and international bodies, raising awareness on the innovations and capabilities it pursues to offer. The challenges faced, the tools being developed and the synergies with ANITA were also highlighted during the event.

II•GRACE Workshop at Europol

On the 14th/15th October 2021, the first physical meeting of the GRACE consortium took place at Europol headquarters. Discussions were held on open topics related to the data model and ontology for the CSE crime area. Participating LEA partners had an open dialogue, addressing the problems and opportunities experienced in the first 18 months of the project.

III•GRACE Pilot

The first GRACE pilot tests took place in mid November at the Cybercrime Unit within the headquarters of the Cyprus Police. Excellent feedback was received from the pilot participants who got to experience first-hand the current state of GRACE's capabilities.

IV• Leading Innovation Event

The "Leading Innovation in the LEA of the 21st century" conference, held by project partner PJ, took place from 3rd-5th November in Lisbon. GRACE coordinator, Sean Gaines from VICOM, presented GRACE on the first day of the event.

V•PREVISION final workshop

At the end of November 2021 GRACE presented at the final event of H2020 sister project, PREVISION. The project coordinator, Peter Leškovský, introduced GRACE and the discussed the achievements accomplished so far in the project.
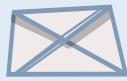
Partner in the spotlight...

Fighting online sexual abuse in Portugal - Polícia Judiciária (PJ)

In 2016 Portugal committed to a more effective fight against the transnational phenomenon of online sexual abuse. This concluded the need for the Polícia Judiciária to strengthen the adjustment with European and international structures of criminal information and counterintelligence (e.g., Europol and INTERPOL). In doing so PJ could effectively fight cybercrime based on the collection and sharing of criminal and criminogenic information, in the constitution of international teams that allow articulated responses between police forces and representatives of the judiciary and in carrying out transnational police operations.

It was found urgent to implement a specialized operational Unit in the Judiciary Police, typical of Forensic Police, allowing the achievement of the necessary structural, preventive and repressive response to the phenomenon of cybercrime and cyberterrorism, inspired by the model adopted by the European Cybercrime Center (EC3) of Europol. EC3's work focusses on three main areas: cyber dependant crimes, online child sexual exploitation and payment fraud.

Within the scope of the PJ's National Unit for Combating Cybercrime and Technological Crime (UNC3T), the fight against the phenomenon of online sexual abuse is the Mission of the Central Section for the Investigation of Cybercrime against Persons (SCICCP). This unit is responsible for centralizing and sharing information with international institutions and, at a local level, with the various Regional Territorial Departments.

The core of the Mission of SCICCP is the receipt, processing and dissemination of criminal information resulting from the National Center for Missing & Exploited Children (NCMEC) Cybertipline Reports, which are expected to undergo fundamental developments and gains in efficiency through participation in the GRACE Project.

This involvement is framed within a strategic vision of collaboration and development of tools for prevention and repression of the phenomenon, being SCICCP responsible, under the aegis of the Division of Innovation and Development Services of the Criminal Police, for the execution of relevant innovation projects in this area.

SCICCP has a team of about 12 investigators in charge of performing technical tasks such as training, development of tools, analysis of criminal information, operational execution of their own investigations as well as support to the regional teams in the fight against CSE.

1st GRACE pilot - Looking back to move forward

The first GRACE pilot event took place between 22nd-26th November, 2021 at the facilities of the Cybercrime Unit, in the headquarters of the Cyprus Police. The purpose of the pilot was to bring together Child Sexual Exploitation (CSE) investigators from participating Law Enforcement Agencies and collect their feedback on the current state of the capabilities researched during the first cycle of the GRACE project.

Following the thorough facility preparations done by the GRACE project team and the Cyprus Police during the previous weekend, the 11 investigators had a full week to explore the GRACE capabilities first-hand. By drawing on their experience in CSE investigations, the participants were able to evaluate the maturity and progress of the capabilities and provide relevant feedback.

The overall response was positive and the consensus was that the project is on a good track, with great potential for development. Both qualitative and quantitative feedback was collected from the investigators, in order to help shape the direction to be followed during the next two project cycles and to identify any areas of enhancement that would need to be addressed.

The pilot participants and the project as a whole were pleased with the way the pilot was executed and the feedback generated, paving the way for the next two project cycles.

European strategy on CSEM

In November, the 2021 the Internet Organised Crime Threat Assessment (IOCTA) was published. The IOCTA is a Europol's flagship strategic product that provides a law enforcement focussed assessment of evolving threats and key developments in the area of cybercrime and, importantly for GRACE, in the area of CSE.

This year the impact of Covid-19 has made a visible difference to the findings of the report. With more time being spent at home the amount of time children have spent online has increased significantly. The report highlights that this has made many children more susceptible to grooming and thus, there has been a rise in self-produced exploitation material.

To view the important work Europol is carrying out to combat these findings you can read the complete 2021 IOCTA report **here**.

Key findings

➤ There has been a steep increase in online grooming activities on social media and online gaming platforms.

➤ Overall activity related to CSAM distribution on P2P networks has increased considerably.

➤ The production of self-generated material is a key threat. This material is displaying increasingly younger children.
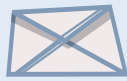
➤ The Dark Web remains an important platform for the exchange of child sexual abuse material (CSAM).

Source: www.https://www.europol.europa.eu/

Further reading from Europol...

COVID-19: Child sexual exploitation - This is Europol's awareness advice in response to the findings of the IOCTA report.

Exploiting isolation: sexual predators increasingly targeting children during COVID pandemic - This report provides further details on the impact of the Covid-19 pandemic and the CSE online phenomenon.

Next steps for GRACE...

➤ April 2022 - 3rd co-creation workshop

➤ June 2022 - GRACE booth at the European Academy of Forensic Science Conference (EAFS 2022) in Stockholm

➤ October 2022 - 2nd GRACE Pilot

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