



Novel Strategies to Fight Child Sexual Exploitation and Human Trafficking Crimes and Protect their Victims

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D10.9 Exploitation Plan

Authors

Luis Javier García Villalba, Sara Vanesa Orozco Narváez, Ana Lucila Sandoval Orozco (UCM)

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Responsible partner	Name	Luis Javier García Villalba	E-mail	javierv@ucm.es
	Partner	UCM	Phone	+ 34 91 394 7638
Contributing partners	ALL			
Reviewers	Claudia Cifuentes (RENACER), Graziella do Ó Rocha (Asbrad)			
Security Approval	Julio Hernández-Castro (UNIKENT)			

Abstract (for dissemination)	
This deliverable presents the project results and actions that are potentially exploitable, as well as the partners capacity to exploit the results. A preliminary market analysis and business models being studied are presented.	
Keywords	Exploitation plan, market analysis, Business model

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1.0	31/05/2022	Ana Lucila Sandoval Orozco	Final version for submission

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Executive summary

This deliverable deals with the exploitation strategy during the development and lifetime of the HEROES project. The objective of this deliverable is to identify the key results that are potentially exploitable, the methodology that will be implemented throughout the project to make use of the results, specify the value and social impact of the activity to determine the stakeholders.

Exploitable results are products generated during the project that can generate an impact during and/or after financing, they are elements such as knowledge, technology, processes, that have the potential to contribute to future work, research or innovation. In addition, they can be used by the project partners themselves or by other interested parties.

Abbreviations

AB	Advisory Board
CA	Consortium Agreement
CSA/CSE	Child Sexual Abuse/ Child Sexual Exploitation
DoA	Description of the Action, Annex 1 of the Grant Agreement
EC	European Commission
LEAs	Law Enforcement Authorities
THB	Trafficking in Human Beings
WP	Work Package

1. Introduction

Deliverable D10.9 aims to ensure future viability, planning, evaluation and strict control of the most important aspects of the project. Also, to ensure the self-sustainability of the outcomes of HEROES, with the generation of scalable strategies. Furthermore, to explore other niche markets, taking into account the commitment of the consortium with IPRs and knowledge sharing – open source solutions, public deliverables, open publications and reports dealing with recommendations, access to research data, etc. Common guidelines will be defined at the beginning, paying attention to end-user needs and the marketplace while being coherent with the strategy, interests and rights of the involved partners – the Project Coordinator will collaborate with the consortium contacts, technology transfer offices and public relations departments of the partners. All these aspects will be reflected in the exploitation plan (D10.9), which will be periodically updated (from M06 to M36 in D10.19, D10.20 and D10.21) to incorporate the latest changes and advances in the state-of-the-art, trends and competitors among others.

2. Exploitable outputs

Exploitable outputs for the HEROES project comprise the potential exploitation of non-commercial and commercial oriented results.

- **Non-commercial oriented results** include the technological and methodological solutions created by HEROES. It will be oriented to knowledge transfer, policymaking and training activities towards the scientific community, LEAs, Multi-Stakeholders and especially society to address THB and CSA/CSE crimes. Much of the knowledge will be transferred through training, conferences and periodic publications or briefings.
- **Commercial-oriented results** are solutions aimed at reaching the market in short/medium term depending on the corresponding TRL. These results will feed the current product and service portfolio of the consortium partners. Others will be analysed in depth by the NGOs to choose the most appropriate exploitable action (e.g. licenses, partnerships, spin-offs, etc.).

HEROES will emphasize turning technological developments and research outcomes into value-creating products and services. The modularity of the proposed solution will allow partners to assess complementary strategies based on the flexibility of the results to be used in other systems and sectors. (Figure 1) shows the TRL and SRL (actual and final) of each component of HEROES.

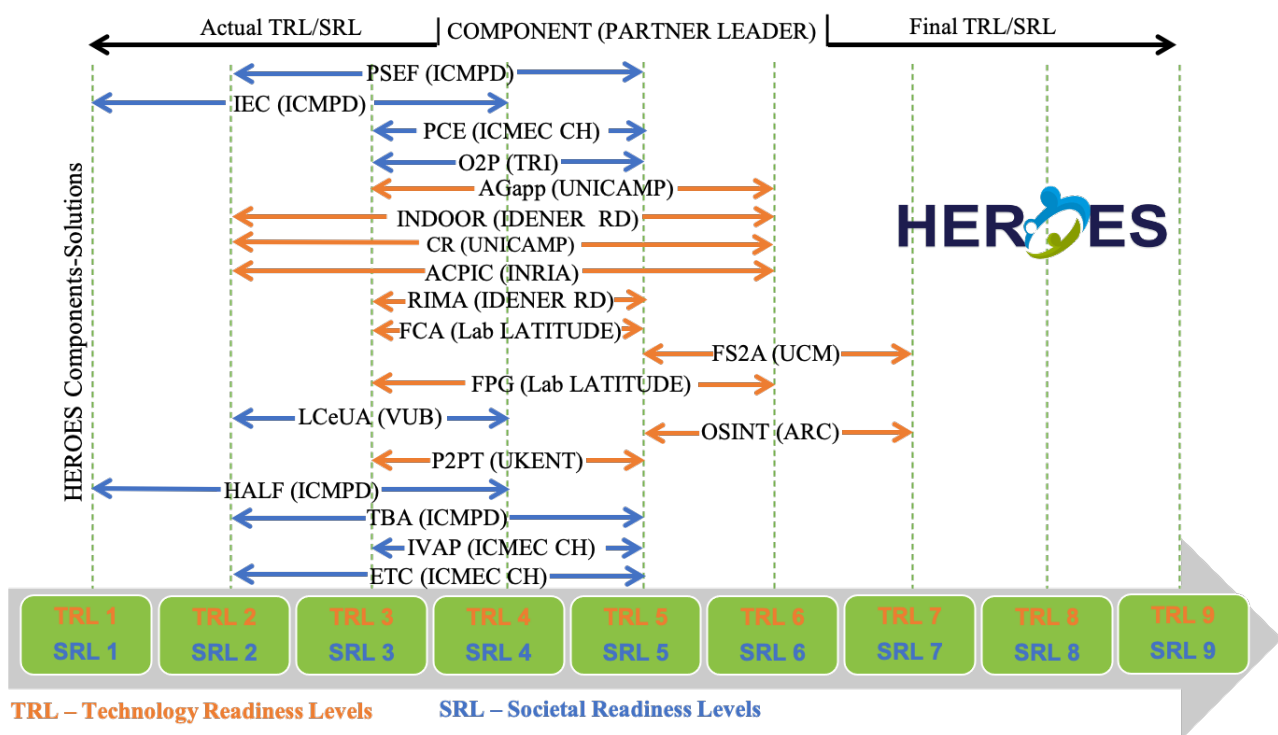


Figure 1. Actual and final TRL/SRL of the components to be developed in HEROES.

3. Partners' exploitation vision

The preliminary vision of exploitation plans is grouped by organisation type. The individual exploitation plans will be updated and refined during the execution.

- **UNIVERSITIES (UCM, UNIKENT, VUB):** The results of the research activities of HEROES are novel enough to ensure a strong scientific impact, disseminating the research results with publications on high level conferences and impact journals. Much of the topics tackled in HEROES will be considered as topics for master and PhD. thesis offering to students work in innovative research problems with practical impact. Additionally, VUB will expand its expertise, while also getting its legal research closer to a multi-disciplinary and cross-sector consortium.
- **RESEARCH INSTITUTES (INRIA, KEMEA, ARC):** INRIA can provide state-of-the-art robust algorithms for accurate analysis of human behaviour from video data. The face analysis group can deliver accurate algorithms and tools to estimate emotion, gender and age, and object recognition. The focus of INRIA will be to advance the state-of-the-art in Deep Learning in these areas. KEMEA as the think tank of the Hellenic Ministry of Citizen Protection regarding security policies, R&D and innovation actions will bring the HEROES project's outcomes to the attention of the Ministry and to the associated entities. KEMEA will use the project's findings to enhance its consulting and research services and portfolio. ARC will further extend the results obtained from LOCARD and push further innovations in the direction of detection and prevention of online deviant behaviour.
- **INTERNATIONAL ORGANISATIONS (ICMEC CH, ICMPD):** ICMEC CH is an organisation that provides technical assistance to countries to strengthen their response capacities to the THB and CSA/CSE, for which it will provide the construction of protocol models and studies of the situation on prevention, research and attention to victims to promote legislative changes and public policies. ICMEC CH will also provide specialised training for the implementation of recommendations. ICMPD will contribute to HEROES in the activities from a social science perspective. Both the Research Unit and the Anti-Trafficking Programme will lend their expertise. ICMPD will draw from its internationally tested methodologies to generate evidence-based knowledge, as well as policy tools, to improve LEAs' criminal response and feed their systems with accurate parameters. ICMPD will also contribute to capacity building activities, producing curricula, plans, methodologies, and assisting the application of such tools during pilot training.
- **SMEs (IDENER RD, TRI):** IDENER RD strategically invests in the research field of digital forensics, process engineering, data intelligence gathering, among others. To this end, HEROES is perfectly aligned with the goals of the company for the forthcoming years. The generated IP will be used to enrich its products that are provided to Multi-Stakeholders and commercially exploit them. TRI will further refine its ELSI impact assessment approach and gain further experience in security technology development. It will use this to inform its consultancy work in privacy-by-design and ethics-by-design, and training on THB response, as well as informing its data protection officer service. TRI will use the text-analysis work on HEROES as a potential option for integration with its STRIAD risk assessment platform.
- **NGOs (CWCS, KOPZI, APAV, RENACER, GCR, ASBRAD):** The NGOs will be involved in qualitative study of THB and CSA/CSE prevention, investigation and victim assistance processes, identify barriers, use HEROES tools for early identification of potential victims, manual assessing barriers, remedies and harmful practices on treatment of victims. Assist in development of educational materials and undertake child rights promotion campaigns with stakeholders and children. The NGOs will use HEROES outcomes to restructure the national strategy towards THB and child exploitation victims including more scientific based approach to identify, support, integrate and follow-up them. The existing gaps in providing positive results while organizing the legal processes in the THB field will be covered by the advanced models developed by HEROES.
- **LEAs (ESMIR, ELAS, SPL, GDCOC, BFPD, PRF):** LEAs are one of the main end-users of HEROES and will use various methodological and technological solutions to fight THB and CSA/CSE crimes. Besides, HEROES will help to achieve each country's security objectives and contribute to better decision-making by policymakers. Furthermore, LEAs will also promote the concept and outcomes of the HEROES project to National and European fora and stakeholders' groups (e.g. EUROPOL, INTERPOL, ENLETS, etc) where they normally and officially participate.

- **GOVERNMENT ORGANISATION (SIEE):** Public entity is responsible for the National Intelligence System that will improve the decision-making process of the legislative and executive power to effectively fight organised crime and especially against the THB and CSA/CSE. They will promote the dissemination of the legal and social experiences of HEROES to other countries through cooperation agreements.

The more promising strategies will be updated and refined during the project, guaranteeing the compliance with the described guidelines and foreseeing a realistic approach as a complement to joint exploitation strategies and the possible business models outlined in the following sections.

4. Market analysis

The increasing number of crime rates and the sophistication of crimes across the world have further emphasized the interest in developing advanced technology and intelligence as a solution to solve crimes. In fact, the growing interest in improved technological strategies has been one of the primary factors for the forensic technologies market growth. Forensic technologies are crucial in several criminal investigations since the rising number of criminal cases increases the backlog of pending cases. During the last decades, THB has grown dramatically with the introduction of new technologies, with a focus on sex trafficking. THB includes a variety of forms of exploitation such as CSA. In [1] a model applied in the UK identified important limitations about the gathering of data and processing of cases. Nevertheless, it is very important to build a solution that can include an evidence-informed approach of the victims. It is argued that technologies may be employed at each phase of the trafficking process. Additionally, a limited budget of LEAs avoids a better approach to mitigate this kind of threat [2]. Technology should improve our comprehension of how people find themselves in exploitative conditions. It is necessary to investigate how technological advancements can guide us with the difficulties of THB practices. Moreover, LEAs need to know if their interventions against counter-trafficking are having an impact on the victims [3].

Everyday LEAs makes use of several tools that help mitigate the THB and distribution of CSAM/CSEM. For the side of THB is possible to find tools designed for non-profits, companies, or government and law enforcement agencies. These tools are divided into several types such as Image Recognition, Awareness, Reporting, Data Management, and AI [4]. In [5], the European Commission carried out the evaluation of 10 commercial tools for fighting against CSA, demonstrating that there is no an integral comprehensive tool that solves this problem as a whole, and each tool provide different specific functionalities (Face detection/age estimation/context analysis among others). In addition, some tools are dependent on others, which could imply a significantly high additional license cost [6], [7], [8], [9], [10], [11], [12], [13]. Moreover, the use of all tools functionalities strongly depends on the specific legislation of each country [14], [15]. functionalities are still Although free tools are widely available, integrated missing.

Projects with such an impact should be globally supported by government and academic organisations, in collaboration with United Nations Agencies [16] (external expert advisor of this consortium) and child rights NGOs to be effective in the formulation of international plans of action. Therefore, it is necessary to have an integrated platform that addresses the problem as a whole at global scale and complies with current legislations. This solution should be in accordance with the short/medium/long term impacts of the international plans of action in the context of Trafficking of Human Beings and Child Sexual Abuse investigations. In this context, a broad market of technological innovation for the entire consortium will be developed, especially for LEAs and organisations that deal with this type of crime. The technological innovation market will be expanded as the implementation of high-tech methods, techniques, resources, and methodologies are developed and deployed in HEROES solution. Big-data technology will increase research capabilities, creating more opportunities to evolve and expand niche markets. According to [17], the European Parliament forecasts annual growth of 236% in data generation and 1.9% PBI growth by 2020. There are also alternatives at European level such as the European Network of Centres of Excellence in Big data which promotes cooperation between leading centers in Big data, Universities, and LEAs. Finally, OSINT tools have revolutionized the data collection market, and are currently used in all security organisations worldwide [18]. These experiences acquired by LEAs are vital to create a safe technological environment open to the international opportunities that the market demands.

5. Business model

The HEROES business model will make it possible to clearly define what the consortium wants to offer to clients (LEAs, Multi-Stakeholders and Society), how the work will be carried out and how to generate commercial opportunities. The Figure 2 shows the initial business model of HEROES Project. For this, we use the canvas business methodology that will help HEROES to be a successful project. However, during the first months of the project, it will be improved by using other methodologies such as Lean Startup and Disciplined Entrepreneurship. The combination of methodologies in HEROES will allow us to accurately estimate cost aspects of the services, the positioning of our product and the relationship with other open-source tools. Sustainability is evolving, and so is our model. The HEROES solution aims to promote social leadership for a sustainable future. Therefore, we will update our working model while maintaining our commitment: the integrated and responsible management of sustainability. HEROES will adopt sustainability strategies from recognised companies that develop tools for forensic analysis, cybersecurity and cyber defense (Microsoft, Griffeye, Opentext) and organisations that establish strategies to combat emerging threats (United Nations, organisation of American States, Non-governmental organisations).

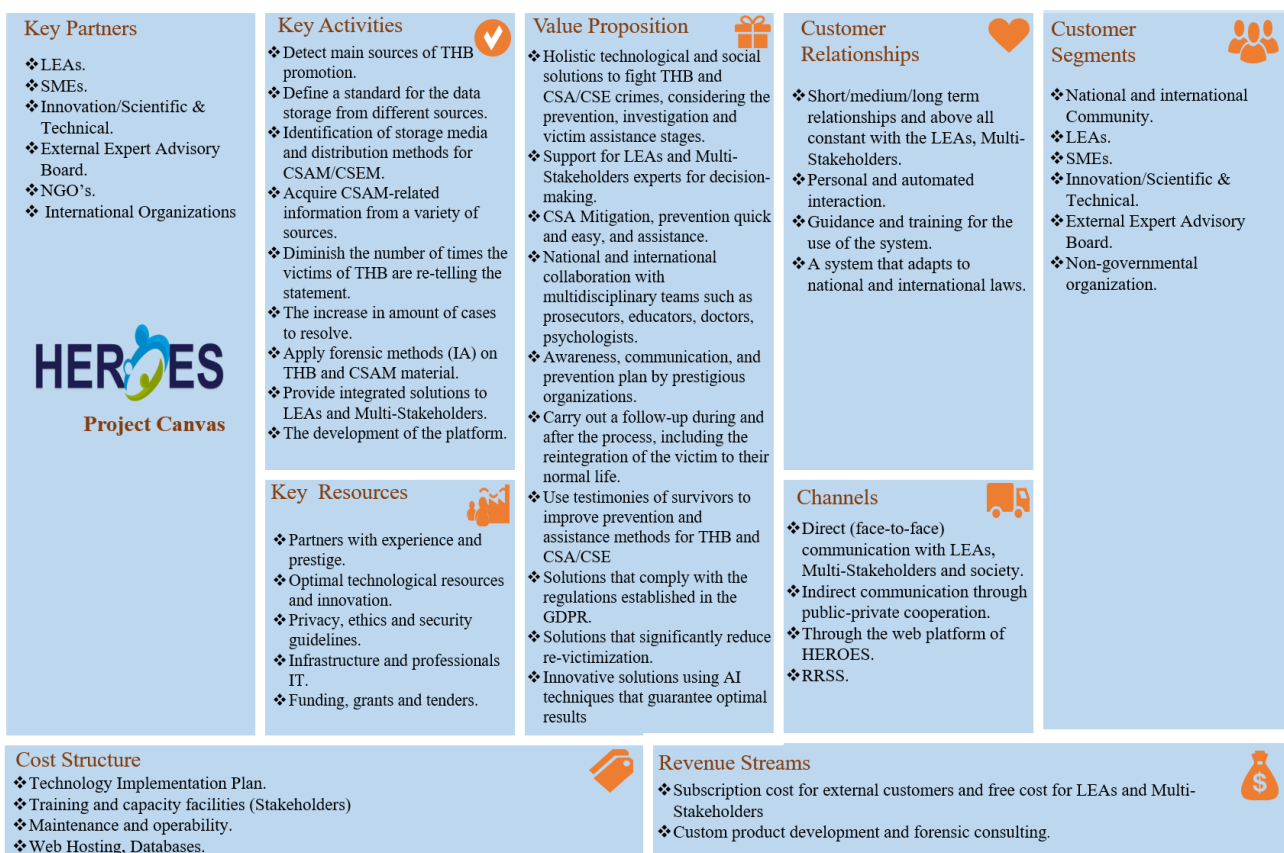


Figure 2. HEROES model canvas

6. Next Steps

As next steps within the Exploitation Activities, the consortium foresees the definition of the Intellectual Property Rights (IPR) and business plan in the coming months.

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