



# Forensic Reverse Engineering of Silicon chips

Advanced digital investigation to tackle  
cybercrime of electronic devices



Funded by  
the European Union

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## About

One of the biggest challenges facing European law enforcement agencies (LEAs) today, is the widespread use of digital, fully encrypted consumer devices. The use of encryption makes the lawful extraction of user data during any criminal investigation both challenging and time-consuming requiring specialist personnel and sophisticated, costly equipment.

Fully invasive hardware analysis, in which the internals of integrated circuits (ICs) are examined for security faults which may be used to disrupt the chain of trust, are arguably the most promising, but also the most technologically demanding approach.





## Vision

ForRES aims to combine the collective knowledge and technological capabilities of European LEAs and science institutes to push the boundary of IC reverse engineering by improving the techniques for analysis of integrated

circuits, facilitating European cooperation through a unified tool-set and a platform for sharing knowledge as well as researching possibly vulnerable circuits in electronic devices.



## Motivation

The consortium is composed of leading European experts in their fields who complement each other with their competencies and experience. The ForRES partners bring together unique key qualifications, enabling outstanding results needed to achieve the objectives. Moreover, the complementary expertise of the partners

as a whole ensures that every task is performed with the most advanced techniques, and thus ground-breaking results should be expected. Based on the long-lasting experience of all project partners, we can ensure that the proposed results and objectives will be achieved in the most cost-effective way possible.



## Mission & Objectives

The results of ForRES could be highly relevant for combating fraud and counterfeiting of non-cash means of payment by providing investigative tools, in particular to investigate

fraud with a cybercrime component like crypto-currencies, for example by unlocking crypto-wallets, mobile phones and encrypted storage devices.

In particular, ForRES will focus on the following objectives:



improve the operational capacity of European LEAs,



advance the capability of extracting user data from highly integrated devices,



perform fully invasive operations on leading-edge semiconductor devices,



establish a platform for shared work on a topic (chip) to reduce the time and effort spent,



develop necessary tools and methods to attack the hardware chain of trust,



enhance the capability of the digital forensics' experts.

# Partners

ForRES partners come from five European nations (Germany, Netherlands, Austria, Spain and Norway) and bring together three LEAs, one private company and a public research institution. Together we have the skill set and required equipment to contribute to all work packages, thus fostering a close cross-border cooperation.



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Bundeskriminalamt

Bundeskriminalamt (BKA)  
GERMANY [Wiesbaden]

2

TECHNIKON

Technikon Forschungs- und  
Planungsgesellschaft mbH  
AUSTRIA [Villach]

3



Netherlands Forensic Institute  
Ministry of Justice and Security

Netherlands Forensic Institute  
NETHERLANDS [The Hague]

4



CSIC  
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS

Agencia Estatal Consejo  
Superior de Investigaciones  
Científicas  
SPAIN [Barcelona]

5



POLITIET  
KRIPROS

Politidirektoratet  
NORWAY [Oslo]

# Facts



## Budget

**€ 2.3 Million**  
90% EU-funded



## Consortium

**5 Partners**  
5 countries



## Duration

**30 Months**  
07/2023 - 12/2025

# Contact

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