

## A user-friendly application to improve security and privacy

The GHOST project aims to deliver a disruptive software-enabled security network solution for smart-home occupants through a smart gateway by integrating state-of-the-art technologies.

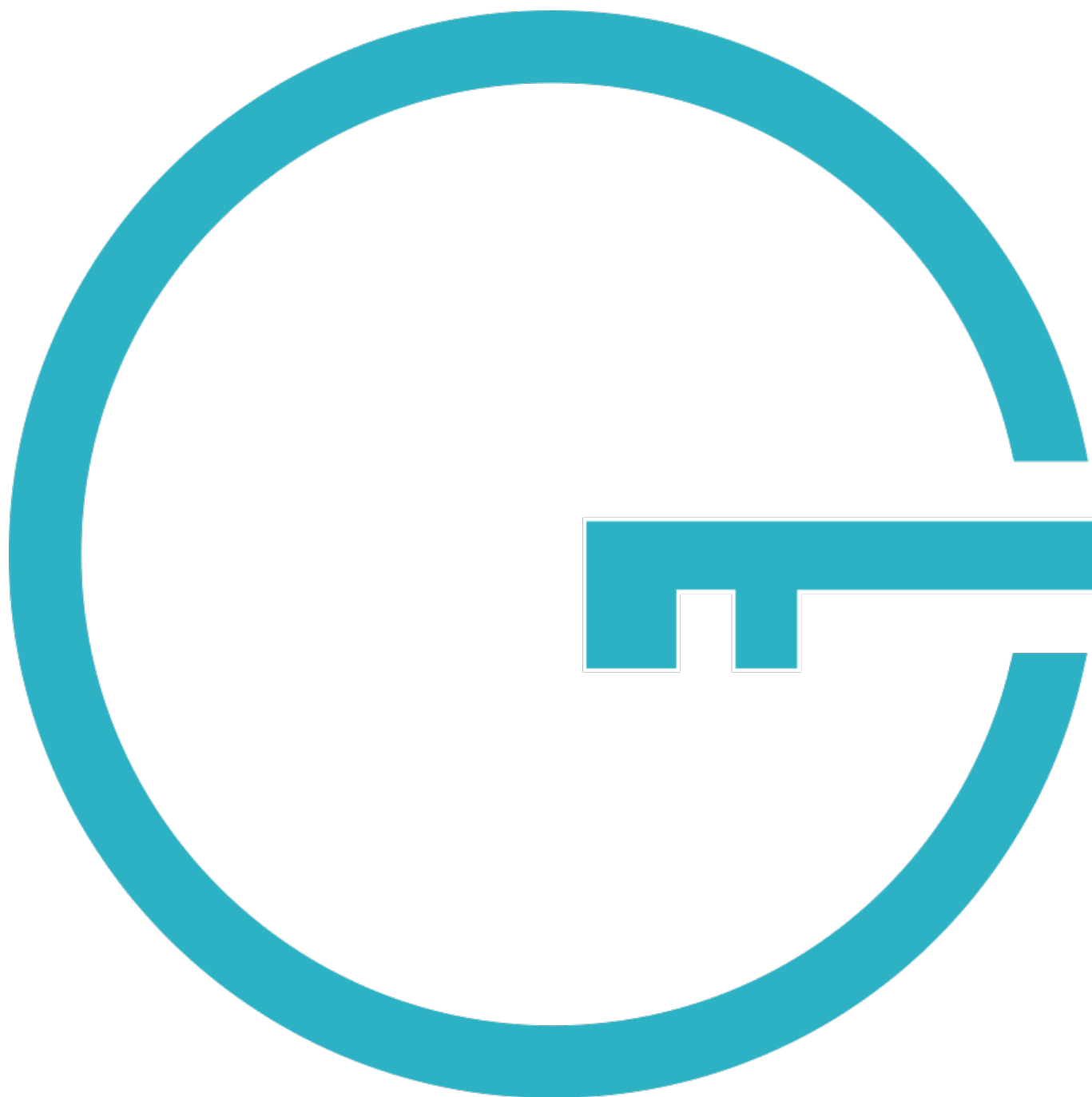
### Security and privacy in the last mile: GHOST makes your smart home safer

GHOST project is coming to its end with successful results. This project, funded under the EU H2020 programme, has developed a highly-affordable, turn-key, hassle-free solution for securing any home network through the application of the state-of-the-art network monitoring, automated risk assessment and machine learning techniques embedded in a home gateway. The system has been piloted in more than 90 homes in three different countries (Spain, Norway and Romania).

During last years, the explosion of the IoT-enabled services for smart homes has been unstoppable: smart health devices like smartwatches have been used for controlling personal health, home automation solutions have been deployed and integrated with intelligent speakers, etc. It is expected that this trend will continue the same during the next years, as it delivers convenience and efficiency of integrating IoT technologies in our day-to-day activities.

Nevertheless, security and privacy management on this kind of solutions has not evolved at the same pace, especially in terms of user's awareness and cyber knowledge. In addition, most of the security and privacy technologies available nowadays have been developed to protect the assets within the core of the networks (mostly cloud-oriented security solutions and systems for all-IP networks).

GHOST is based on the combination of two main pillars: first, the adaptation of the state-of-the-art technologies like blockchain, machine learning and automated risk assessment for securing home IoT networks (deploying specific tools for constrained and embedded devices); second, the end-user validation and feedback integration (through the execution of the pilots on 90 homes, targeted focus groups and various other end-user related activities). These two pillars have enabled the creation of a usable security and privacy solution for protecting homes being controlled and managed by the inhabitants themselves. The end-user experiments have unveiled two critical findings: a lack of awareness of security and privacy importance for this type of application and a dangerous trust-by-default approach by the end users. GHOST results are, firstly, motivating and engaging the end-user in the management of their home's security and privacy and, secondly, providing the right tools for taking the control over the security and privacy of one of the most precious spaces in our lives: our home. During three years, the GHOST solution was evolving to achieve a higher level of maturity in terms of usability, transparency, robustness, trust, scalability, detection and mitigation capabilities.



GHOST

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