

### **ARCADIAN-IOT OVERVIEW**

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Training for secure identity management for IoT services

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arcadian-iot.eu

### **BACKGROUND & MOTIVATION**









**By 2025**: - 27 billion active IoT connections iot-analytics.com (State of IoT - Spring 2022 report)



### **BACKGROUND & MOTIVATION**





CONTROL | NEWS | SECURITY

MARCH 30, 2020

#### Report: 57% of IoT Devices Vulnerable to Severe Attack

A recent uptick in cybersecurity attacks are linked directly to Internet-of-Things devices such as intercom systems and security cameras. Here's how to keep customers safe.

Amy Rock

#### **BACKGROUND & MOTIVATION**





#### IoT Cyberattacks Escalate in 2021, According to Kaspersky

Some 1.51 billion IoT breaches occurred from January to June, most using the telnet remote access protocol.

Written by Callum Cyrus 17th September 2021

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Check Point Research flags a sharp increase in cyberattacks targeting IoT Devices

Highlights:

- The first two months of 2023 have seen a 41% increase in the average number of weekly attacks per organization targeting IoT devices, compared to 2022.
- On average every week 54% of organizations suffer from attempted cyber attacks targeting IoT devices
- IoT devices in European organizations are the most targetec, followed by those in APAC and Latin America-based organizations.

### **IOT SECURITY BEST PRACTICES**





### **KEY TECHNICAL CHALLENGES**



- Security and privacy are managed in a fragmented way
- Strong human factor in security monitoring, forecasting and updates
- Dispersed **threat intelligence** communication and sharing
- Broader attack surface and risk of propagation with advances in IoT, AI, 5G, ...
- Mostly centralized and static trust management and recovery approaches
- Lack of trustworthy methods for **persons and/or objects identity management**



The overall goal of ARCADIAN-IoT is to develop and make available an innovative and solid framework for **trust, security and privacy management for IoT systems**, accelerating the development of **IoT systems towards decentralized, transparent and user controllable privacy**.



#### Call: SU-DS02-2020 Intelligent security and privacy management

ARCADIAN-IoT project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 101020259

#### **PROJECT OBJECTIVES**





IoT systems

Secure and trustworthy management of **objects**' identification

2

3 Distributed security and trust in persons' identification

management

Distributed and autonomous models for trust, security and privacy, enabling a Chain of

Trust

5

Hardened encryption with **recovery** ability

Self and coordinated healing with reduced human intervention

6

Proactive information sharing for trustable **Cyber Threat** Intelligence and IoT Security Observatory

### **HIGH LEVEL ARCHITECTURE**





#### **APPLICATION DOMAINS**



### A - DRONE GUARD ANGEL

An on-demand vigilance and surveillance service which enables drones to track and follow persons walking from one place to another, on their daily activities, in city areas.



#### **APPLICATION DOMAINS**



### A - DRONE GUARD ANGEL

## B – GRID MANAGEMENT SERVICE

An on-demand vigilance and surveillance service which enables drones to track and follow persons walking from one place to another, on their daily activities, in city areas.

A solution for monitoring grid infrastructures by collecting and aggregating sensor data via a IoT Gateway.



### **APPLICATION DOMAINS**



### **A - DRONE GUARD ANGEL**

## B – GRID MANAGEMENT SERVICE

### **C - MEDICAL IOT**

An on-demand vigilance and surveillance service which enables drones to track and follow persons walking from one place to another, on their daily activities, in city areas.

A solution for monitoring grid infrastructures by collecting and aggregating sensor data via a IoT Gateway.

Remote monitoring and follow-up of cancer patients at home, in the active treatment process where patients complement the sensorial data with their perceived well-being





# THANK YOU FOR YOUR ATTENTION



#### arcadian-iot.eu



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