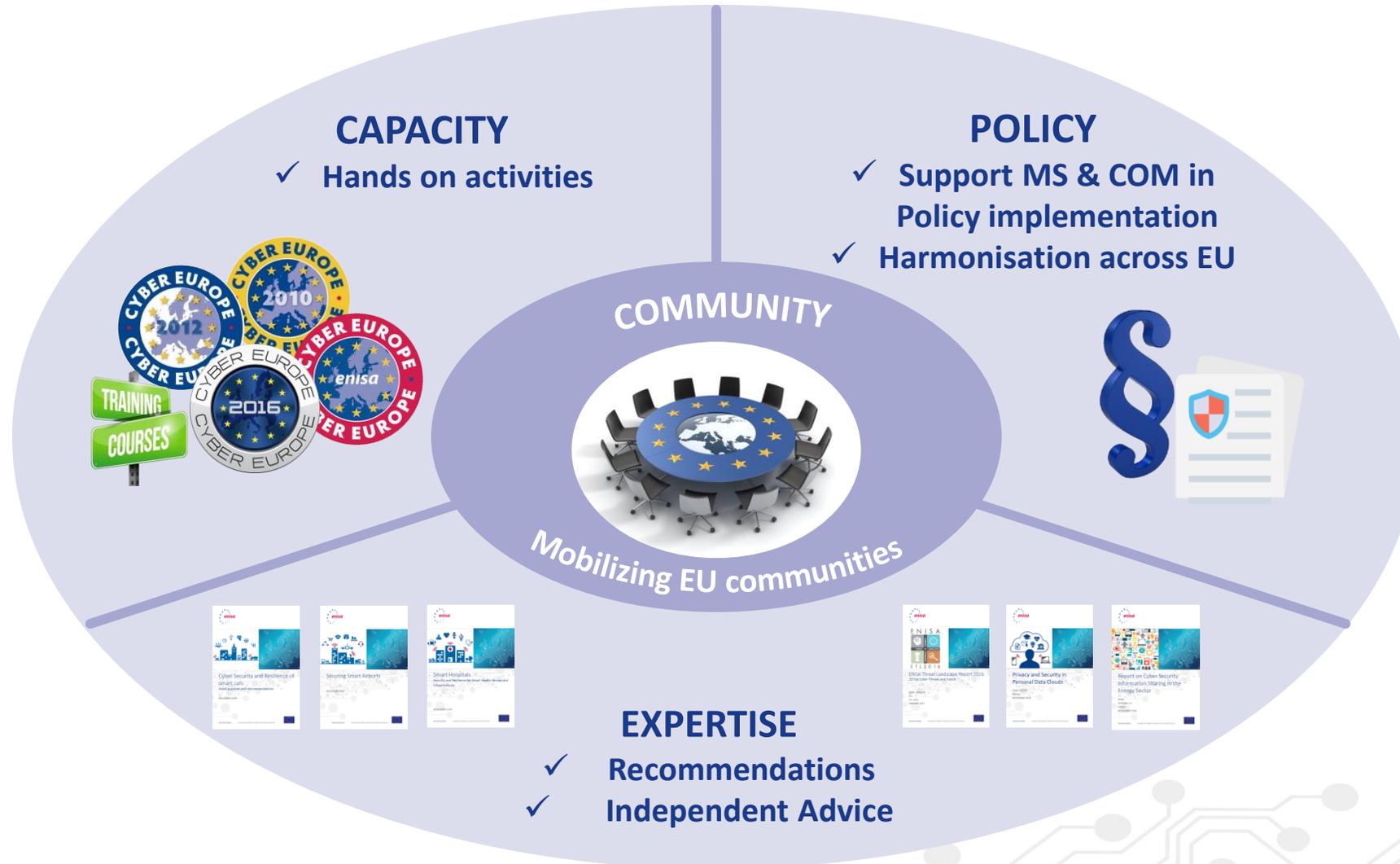# ENISA's efforts to foster IoT cybersecurity in Europe

Dr Apostolos Malatras | Network and Information Security Expert
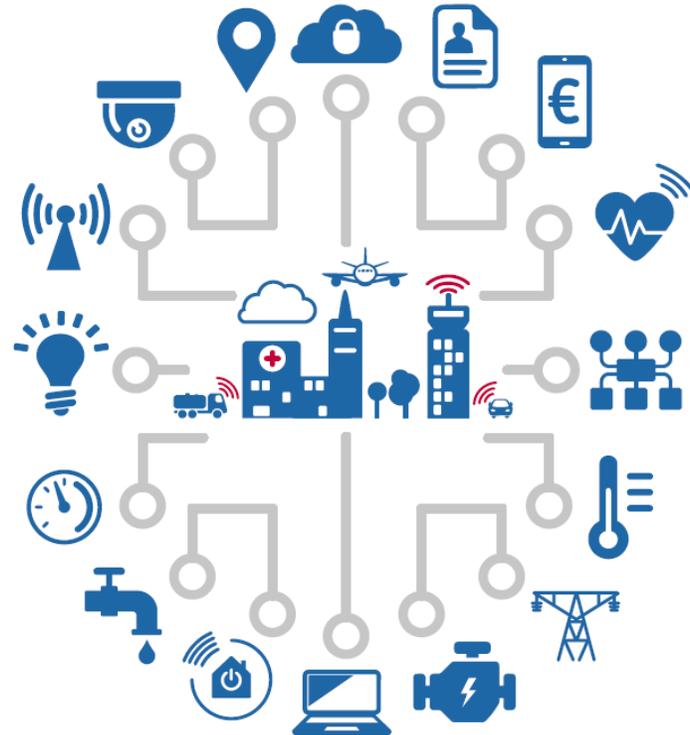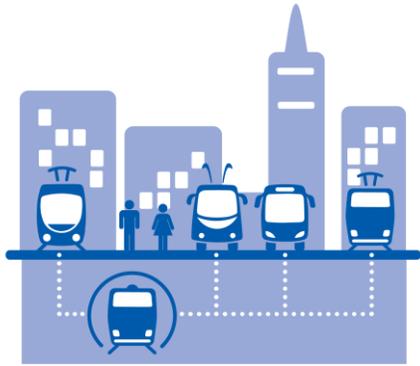
MWC 2018 | Barcelona, Spain | 28.02.2018

Positioning ENISA activities

CAPACITY
- ✓ Hands on activities

POLICY
- ✓ Support MS & COM in Policy implementation
- ✓ Harmonisation across EU

COMMUNITY

Mobilizing EU communities

EXPERTISE
- ✓ Recommendations
- ✓ Independent Advice

Internet of Things is everywhere

How do we secure IoT?

Smart cars

Smart hospitals

Smart airports

Smart homes

ICS/SCADA

Baseline IoT Security

ENISA and IoT cybersecurity

- IoT security in sectors

  - Understand threats and assets

  - Consider context of use

  - Highlight security good practices in specific sectors

  - Provide recommendations to enhance cyber security

  - Expert groups

eHealth

Aviation

Automotive & Transport

Smart homes

https://enisa.europa.eu/iot

ENISA and IoT cybersecurity

- Baseline Security Recommendations for IoT

  - Map existing IoT security initiatives

  - Address the problem holistically engaging with wider community

  - Utilize sectorial knowhow

  - Provide horizontal cybersecurity recommendations and security measures

  - One stop shop for IoT cybersecurity in Europe

https://enisa.europa.eu/iot
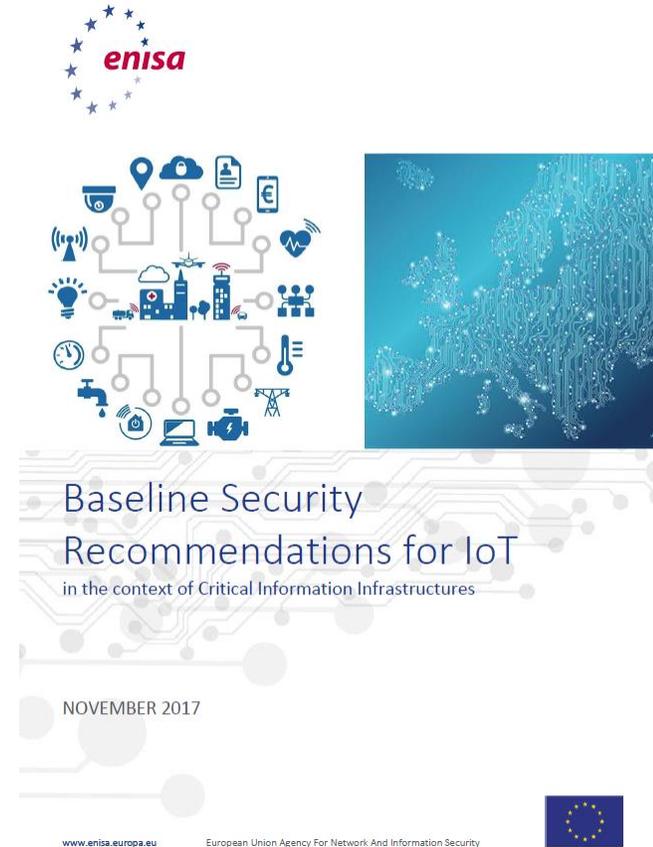
IoT Security Measures

Policies

- Security by design
- Privacy by design
- Asset Management
- Risk and Threat Identification and Assessment

Organizational, People and Processes

- End-of-life support
- Proven solutions
- Management of security vulnerabilities and/or incidents
- Human Resources Security Training and Awareness
- Third-Party relationships

Technical

- Hardware security
- Trust and Integrity Management
- Strong default security and privacy
- Data protection and compliance
- System safety and reliability
- Secure Software / Firmware updates
- Authentication

- Authorization
- Access Control - Physical and Environmental security
- Cryptography
- Secure and trusted communications
- Secure Interfaces & network services
- Secure input and output handling
- Logging
- Monitoring and Auditing

Baseline IoT Security Recommendations

- Promote **harmonization of IoT security initiatives** and regulations

- **Raise awareness** of the need for IoT cybersecurity

- Define **secure software and hardware development lifecycle guidelines** for IoT

- Achieve **consensus on interoperability** across the IoT ecosystem

- Foster **economic and administrative incentives** for IoT security

- Establish **secure IoT product/service lifecycle management**

- Clarify **liability** among IoT stakeholders

https://enisa.europa.eu/iot

Thank you

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