

# ICT 2015 PROPOSAL

## Session title

Key challenges in **end-to-end privacy/security** in untrusted environments.

## Objective of the proposed session

This session, supported by **H2020 projects WITDOM, TREDISEC and PRISMACLOUD** shall motivate discussion and widen the circle of stakeholders dealing with current challenges in both **security and end-users' privacy** when outsourcing data to the cloud.

Therefore, visions, challenges and solutions (including identified scenarios where multiple functional and non-functional requirements must be met simultaneously, and develop specific solutions for a range of cloud security casuistry that satisfy all desired requirements) will be discussed regarding their benefits and possibilities.

## Description of the format of the Networking Session

The format will be an open session when we'll discuss the relevant and trendy topic proposed by the networking session. The opportunity to engage with experts in the field, and participate in the discussions, will give an added value for the audience providing them new resources to enhance their future cloud offering.

1. **5 minute** general introduction to the topic: **Key challenges** A moderator external to the projects will present several key challenges related to the cloud, such as privacy protection and integrity, or data storage.
2. **24 minutes:** Speakers from each project will discuss specific subjects of the **end-to-end privacy/security** in untrusted environments.

The presentations will also highlight how this research contributes to opportunities for European stakeholders considering the strategic importance of enhancing the confidentiality and integrity of data outsourced to the cloud without affecting functionality.

### Presentation 1: "Cloud challenges to high-demanding privacy scenarios."

**Abstract:** "Distributed environments, in particular cloud ones, are generally perceived as being untrusted for storing sensitive personal data. Unless specific data protection measures are implemented, Cloud Providers and malicious parties could gain access to such data and make an unlawful use of them, beyond the specific context of explicitly authorized purposes. In case of scenarios with high-demanding privacy needs (such as eHealth or financial data), moving operations to the cloud requires the provisioning of strict guarantees to all involved parties, in full compliance with the law and according to state-of-the-art technology and best privacy-by-design and cloud security practices. In this talk some of these privacy challenges will be presented, as well as some approaches to overcome them."

**Speaker: Nicolas Notario McDonnell (Atos) – WITDOM Project**

### Presentation 2: "Verifiability and Authenticity of Data and Beyond"

**Abstract:** "In this talk we discuss aspects related to reliably checking that third party infrastructure (i.e., the cloud) behaves as expected when storing and processing data. The focus is on cryptographic measures that ensure and sometimes even enforce honest behaviour and at least allow cryptographically holding the cloud accountable when it deviates from the expected behaviour."

**Speaker: Henrich C. Pöhls (Passau University) – PRISMACLOUD Project**

### Presentation 3: “Data protection versus storage efficiency and multi-tenancy”

**Abstract:** “Implementing existing end-to-end security solutions unfortunately cancels out the advantages of the cloud technology such as cost effective storage. We will talk about the challenges resulting from the combination of security, functional and non- functional requirements such as storage efficiency and multi-tenancy.”

**Speaker: Ghassan Karame (NEC) – TREDISEC Project**

3. **16 minutes:** Semi-structured discussion with the audience with the goal to clarify visions on the future of outsourcing data storage, processing and privacy protection to the cloud and its security implications, as well as for benefits/possibilities of solutions to be developed by these projects in order to foster an increased interest for their adoption.

This will be reinforced by a joint communication campaign of the involved projects in order to widely spread the purpose of the networking session through their communication channels such as specialized platforms to sharing knowledge (Cloud Security Alliance) or the initiative proposed by European Cloud Partnership (ECP) called Trusted Cloud Europe.

### Target Audience

We want to raise awareness on issues related to providing secure, trusted and efficient cloud in relevant **industry**, and transfer the feedback received from the community of interest back to the project.

We will invite and target cloud providers, organizations offering cloud-based services to individuals from different sectors (public administration, health, finance...) and of different sizes (large corporations, SMEs, NGOs) which have obligations or business interests to secure personal and/or sensitive data (their own or their clients’).

In particular, **some significant and selected customers** from organizations participating in the projects will be invited to participate in this session, therefore maximizing a future adoption of the technologies based on their expectations.

### Expected outcome

The session shall promote:

Wide-audience awareness of the challenges and the solutions in the work to address secure data processing and storage in outsourced environments such as public clouds.

We expect that many new stakeholders will be attracted to this process through lively discussion of key issues shaping the future of cloud security and privacy, and give feedback and contributions to the work of the sponsoring projects. We expect to generate impact on our audience and incorporate their feedback in a fruitful dialogue.

New impulses in cloud security research in Horizon 2020. Within ICT 2015, the discussion will provide feedback on the current way towards improvement of outsourced data in the cloud.

### Links and Documents

- 1) <https://prismacloud.eu/>
- 2) <http://www.witdom.eu/>
- 3) <http://www.tredisec.eu/>