CREDENTIAL is an H2020 funded research project developing, testing, and showcasing innovative cloud-based services for storing, managing, and sharing digital identity information and other highly critical personal data with a demonstrably higher level of security than other current solutions. The main idea and ambition of CREDENTIAL is to enable end-to-end security and improved privacy in cloud identity management services for managing secure access control. This is achieved by advancing novel cryptographic technologies and improving strong authentication mechanisms.

**METADATA**

*Call:* Digital Security: Cybersecurity, Privacy and Trust  
*Topic:* DS-02-2014 Access Control  
*Type of Action:* Innovation Action  
*Duration:* 36 months  
*Start Date:* 01.10.2015  
*Estimated Project Cost:* ~6.6M €  
*Requested EU Contribution:* ~6.0M €  
*Coordinator:* AIT Austrian Institute of Technology GmbH  
*Grant Agreement No:* 653454

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**OBJECTIVES**

- Improvement of cryptographic methods to securely store and share identity data in the cloud  
  - Give users full control over their data while still guaranteeing authenticity  
- Protection of access to identity data with strong authentication mechanisms  
  - Back multi-factor authentication schemes by hardware  
- Development of a user-friendly and portable system for identity data access and management  
  - Open architecture based on a security-by-design principle to allow for a seamless integration in existing solutions  
- Creation of enabling technologies for cloud service providers and identity data consumers  
  - Implementation of a secure, efficient, and high-quality software suite  
- Transfer of project results into market-ready identity management technologies and standards  
  - Demonstration and development of standards and guidelines

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**EXPECTED RESULTS**

- Novel efficient cryptography to enable advanced trust models in the cloud  
  - Allow cloud providers to process personal data without accessing it using proxy cryptography  
- Methods for strong authentication to the cloud  
  - Boost use of stronger authentication mechanisms through efficient and user-friendly protocols  
- Holistic privacy models for user protection and secure data sharing  
  - Integrate privacy features into eID solutions to allow for minimum attribute disclosure  
- Dedicated usability and HCI models for wide user adoption and maximum impact  
  - Improve usability of strong authentication mechanisms by novel HCI guidelines and design patterns  
- Secure, efficient, and portable implementations of components and protocols  
  - Improvement of existing standards in the field of identification and authentication protocols  
- Piloting on a European scale  
  - Three real-world pilots from different domains (eHealth, eBusiness, and eGovernment)

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Workflow of a privacy preserving identity and access management protocol realized in CREDENTIAL.