

# CREDENTIALIAL

Secure Cloud Identity Wallet



## You are what you keep!

### VISION

CREDENTIALIAL is an EU 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 CREDENTIALIAL 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

### OBJECTIVES



#### Adaption and improvement of cryptographic methods to securely store and share identity data in the cloud

- protection of confidentiality, integrity, and authenticity of identity data
- mechanisms to efficiently re-encrypt and share encrypted data
- give users full control over their identity data
- protection of users' privacy beyond encryption



#### Protection of access to identity data with strong authentication mechanisms

- use secure authentication to the cloud
- bind credentials and data to the identity
- back multi-factor authentication schemes by hardware
- support increased portability and bootstrapping methods



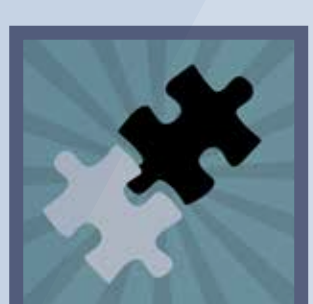
#### Development of a user-friendly and portable system for identity data access and management

- new open architecture based on security by design principles
- holistic security model compatible with existing standardized approaches
- user-friendly system based on a human-centered approach
- allow for seamless integration in existing solutions



#### Creation of enabling technologies for cloud service providers and identity data consumers

- protocol integration for interoperability and portability
- secure and efficient commercial grade software implementation
- hardware support for cloud infrastructures and clients
- high-quality development processes



#### Transfer of project results into market-ready identity management technologies and standards

- business models and exploitation opportunities
- European scale pilot
- demonstrate methods' capabilities and tools developed
- development of standards and guidelines for secure IAM deployment in the cloud

### EXPECTED RESULTS



#### Novel efficient cryptography to enable advanced trust models in the cloud

- methods to treat identity data in the cloud in encrypted format only
- application of efficient proxy cryptography concepts for eID solutions
- enable cloud provider to process identity data without accessing it



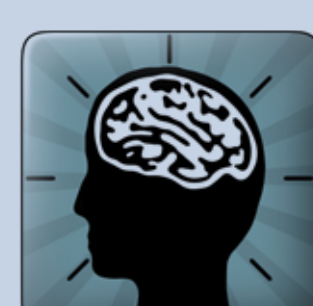
#### Methods for strong authentication to the cloud

- protocols for a merged processes of authentication and decryption to one single process of equal strength
- a boost for the use of stronger authentication mechanisms



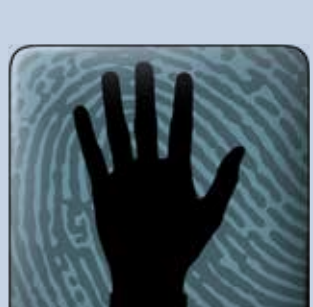
#### Holistic privacy models for user protection and secure data sharing

- integration of privacy features such as selective and minimal attribute disclosure into eID solutions
- application of new approach based on redactable and sanitizable signatures to realize data minimization concepts



#### Dedicated usability and HCI models for wide user adoption and maximum impact

- novel HCI guidelines including HCI design patterns
- improve the usability of strong authentication mechanisms.



#### Secure, efficient, and portable implementations of components and protocols

- improvement of existing standards in the field of identification and authentication protocols
- secure, efficient, and portable privacy-preserving identity management system



#### Piloting and testing on a European scale

- an open and flexible cloud identity wallet architecture to easily connect to other identity management systems
- application of the developed tools in a European scale pilot

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