



Private Identity as a Service aims to create and to field-test a secure authentication system, based on biometric recognition technologies (speaker and face recognition) through mobile devices.

PIDaaS is a project co-founded under the ICT Policy Support Programme in which **8 partners** from Italy, Lithuania, Norway, Spain and United Kingdom are involved.



GOALS OF THE PROJECT

1. To develop a robust, flexible, scalable and easy to integrate service for identity assurance of user's with the help of bio-identities features in mobile devices.
2. To share with internet application providers, the possibility of an easy integration of biometric authentication of their customers into their remote identification processes.

STATE OF THE ART

The identification and verification of individuals using biometric identifiers based on personal traits have been widely used in different contexts, governmental, forensic (police investigations) and for commercial uses.

Mobile devices and the explosion of social media increase the use of biometrics for daily activities which require authentication, such as payments, and for the substitution of passwords and PINs. However, some issues must be well addressed, like user acceptance or resistance to fraud.

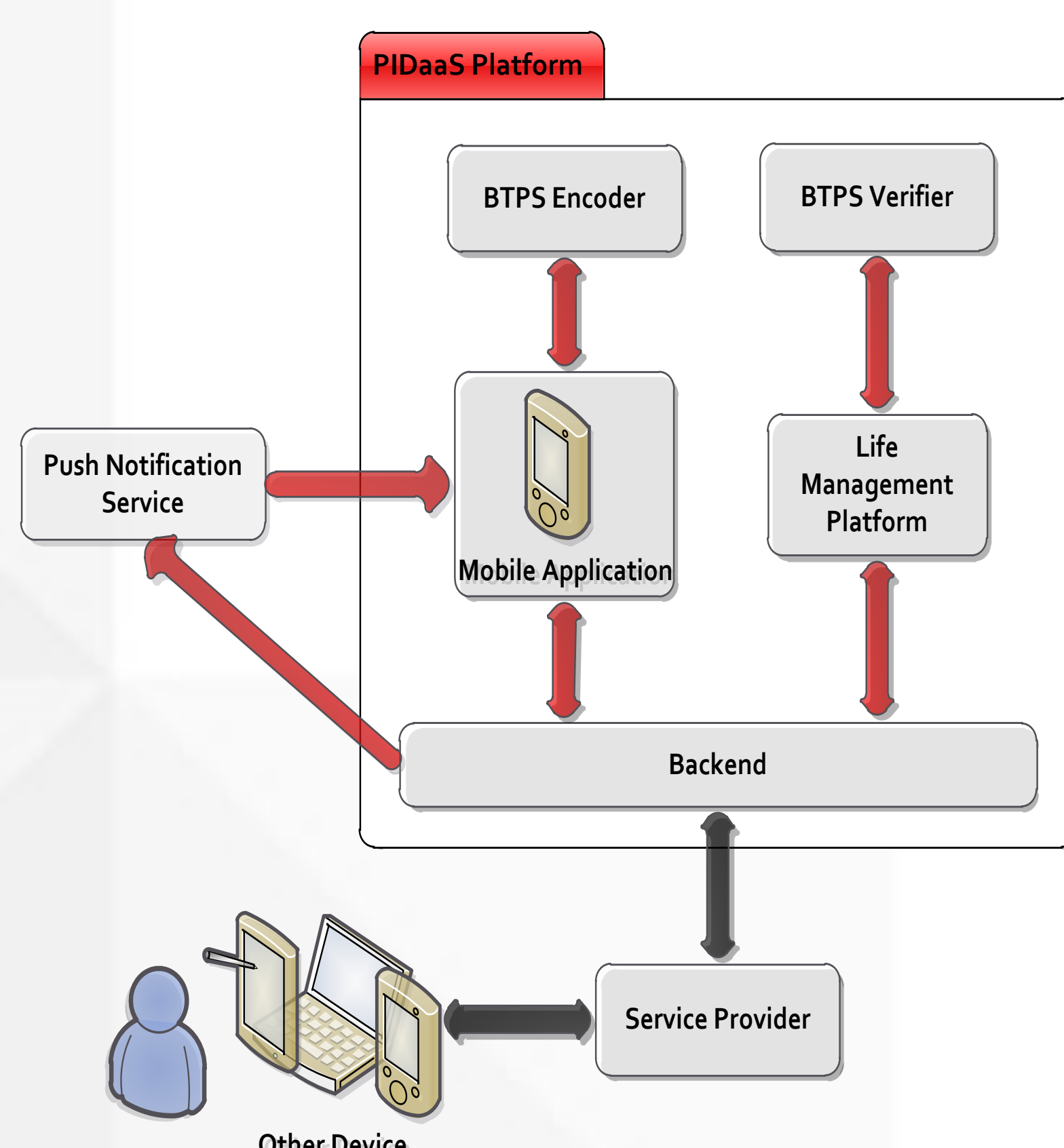
The current biometric authentication technologies are:

- | | | |
|---------------|-------------|-------------|
| ✓ Voice scan | ✓ Vein | ✓ In-Air |
| ✓ Finger scan | ✓ DNA | ✓ signature |
| ✓ Facial scan | ✓ matching | ✓ Keystroke |
| ✓ Iris scan | ✓ Signature | ✓ scan |
| ✓ Hand scan | ✓ scan | ✓ Gait |

PIDaaS SOLUTION

PIDaaS aims to create a secure authentication system, based on biometric recognition technologies (speaker and face recognition) through mobile devices. It is the result of the integration of the following three technologies: BTPS, IdForMe and LMP. The platform consists on the following components:

1. **PIDaaS Mobile application:** It allows the users to manage their identity, personal data and biometric templates and to be authenticated through speaker and face recognition.
 - The management of data allows the users to authorize which action is performed in their name on any website and decide what information they allow to access to Website, Mobile apps, online purchasing, etc.
 - The authentication process is based on the *IdForMe* platform, which allows people to do the authentication process using the speaker and face recognition verification technology.



2. **PIDaaS Backend:** It provides to the Mobile Application and Service Providers a gateway to access to the PIDaaS platform services. Through this gateway, service providers can ask for login authentication services, and users can manage their stored data.
3. **PIDaaS Life Management Platform (LMP):** It is responsible for storing the information about PIDaaS users, service providers and for monitoring the users' activities within the PIDaaS platform. It is a mechanism for sharing personal data between the user and the services in a secure way. Its objectives in PIDaaS are:
 - Manage the authentication process.
 - Store the biometric templates (verification data).
 - Provide control to users over those templates and their personal data..
4. **PIDaaS Biometric Template Protection Scheme (BTPS) :** It is responsible for creating and verifying the biometrics templates of the users (so called Pseudo Identities). This technology enables the creation of multiple pseudo-bio-identities from the same biometric trait, with the possibility of revoking, renewing and reissuing them. It assures the privacy by allowing the use of biometric traits while avoiding the inherited risk of classic biometric solutions.

The integration of these technologies will be tested and validated in three different scenarios: **E-commerce**, **E-health** and **E-citizen**. The pilots will be used for the analysis of the usage of the service.

THE BENEFITS

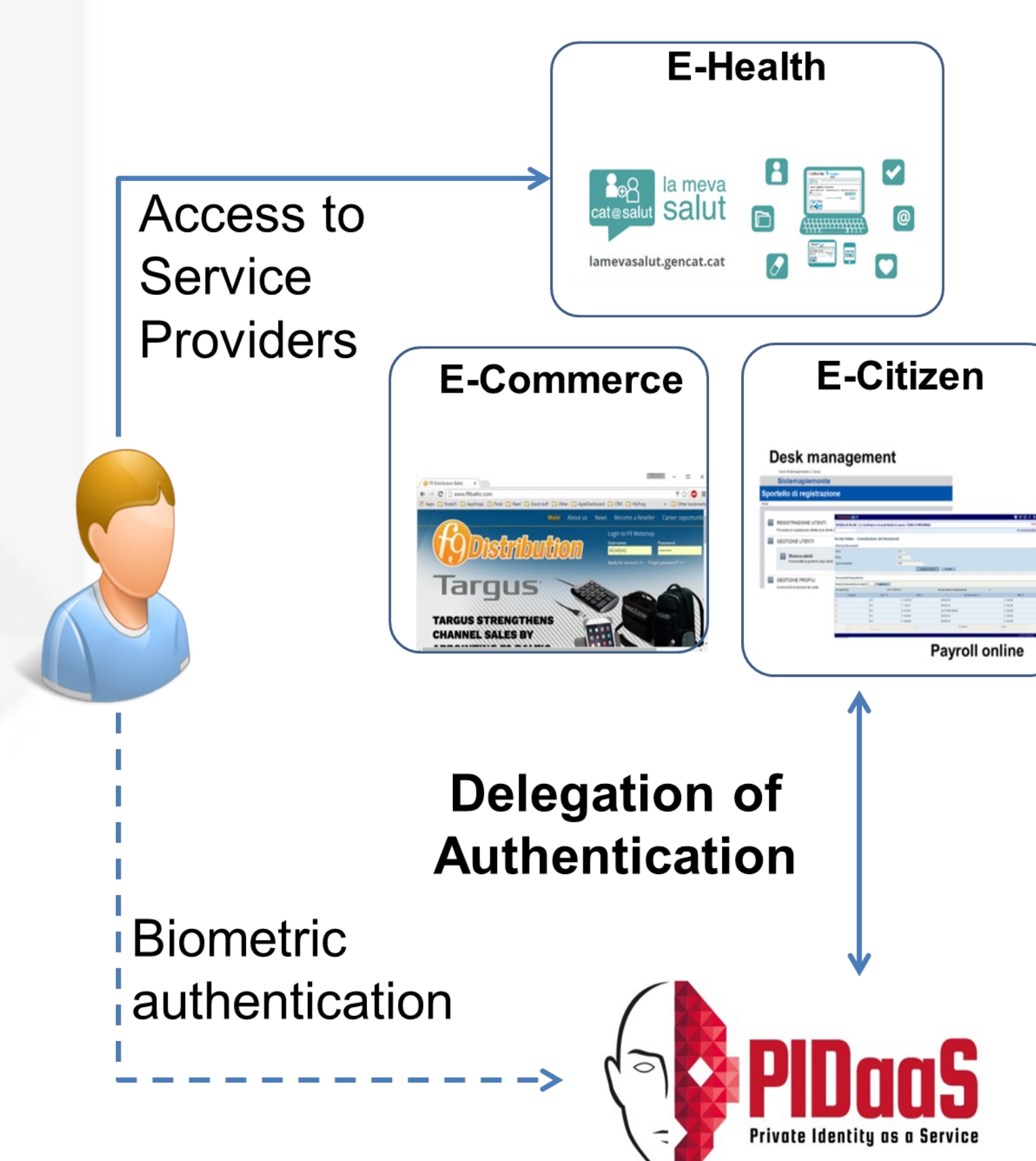
PIDaaS provides an innovative approach to e-Services (e-Commerce, e-Citizen, and e-Health) in a way giving users strong advantages and market competitiveness in the following aspects:

1. **Convenience:** PIN or password is omitted or expressed by voice/face;
2. **Security:** users are verified by their biometrics;
3. **Privacy protection:** biometric information used for verification is protected by BTPS.

These merits makes PIDaaS solution promising in the current and future markets because none of existing identity authentication solutions including those biometrics-enabled can perform well in all the three above aspects in the same time, which makes a good market perspective for the PIDaaS solution.

Each technology also enriches the solution with its specific benefits:

- **BTPS** technologies have been proved to be useful for voice/face biometric modality.
- **Biometric mobile verification systems** because many manufacturers have adapted their existing technology to be ready for deployment.
- **LMP technology** meets the need for the necessary trust frameworks and the need for greater dialogue between regulators and private sector. LMP offers a service where the user is the centre of decision.



ISSUES TO SOLVE

- Biometric algorithms must be tailored in order to fit the specific sensors characteristics of mobile devices.
- Required security preservation of biometric data in the authentication process:
 - User's biometric samples are strongly linked with user's identity.
 - The multiple enrolment processes for every service provider increases the user's feelings about getting out of control of her/his data.
 - Lack of user control and potential privacy.
- Non-renewability of personal biometrics traits: Renewability and revocability are essential functionalities required in identity management.
- The protection of biometric data and its sharing across different legal entities is very difficult to achieve because of non-uniform National/European personal data regulations.
- Difficulty of the integration process of biometric authentication for mobile/web services and application developers.

Discover more about the project through online channels:

pidaas.eu



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