The goal of this CIFRE PhD thesis is to design novel techniques and methodologies to enable the implementation of secure primitives for trustworthy acquisition of biometric data and usage in security-sensitive scenarios.

Applications include, for example, smartphone-based identification and payments.

Standard smartphones may be used and have different levels of security. For example, some devices may have a TEE and/or a Secure Element. In some cases the system and the platform may be modified to improve security. Eventually, the designed system may be implemented in a prototype running on different devices that are representative of the different deployment scenarios, for which its security and privacy aspects against the different threat models will be evaluated.