

ANNOUNCEMENT LETTER

Technikon is glad to announce that the project “PATRIOT” has started on 1st October 2015 with a set duration of 24 months. This project receives funding from the Eurostars-2 joint programme with co-funding from the European Union Horizon 2020 research and innovation programme with the nr E! 9629.

PATRIOT: “PUFS: ANCHORS OF TRUST IN RESOURCE CONSTRAINED ENVIRONMENTS”

Passwords are not secure and user-friendly enough. News about hackers shows how vulnerable we are against determined attackers. We need strong, low-cost, and user-friendly authentication solutions based on personal devices that we carry with us. PATRIOT provides these solutions, gives users control over their (data) security and guarantees privacy. The solutions apply to e-banking, web services, eID, etc. PATRIOT’s results allow the project partners to enter these big and growing markets.

PATRIOT provides an alternative for outdated password-based security and costly secure elements. The solution is 2-factor authentication using unclonable hardware. For this, PUFs (Physical Unclonable Functions) that provide unique fingerprints for chips and which have been vetted for government and defense use will be brought to mass consumer markets. PATRIOT will port PUFs to resource constrained devices that are popular among end-users (Internet of Things), where they will be used for strong authentication and key storage.

PATRIOTS CHARACTERISTICS:

- **Security solution:** PATRIOT provides a security solution for our digital world, which is superior to existing solutions like passwords, biometrics, and secure elements.
- **Unclonable:** Variations during manufacturing lead to unique characteristics on ICs. Since the variations are uncontrollable, these characteristics are unclonable.
- **2-factor authentication system:** PATRIOT will replace insecure passwords and biometrics as well as expensive secure elements with a security solution that was originally designed for government and defense use and provides security from the lowest hardware level.
- **New and innovative algorithms:** PATRIOT will design and implement new and innovative algorithms for PUF processing that target smartphones and wearables, where resources for security are limited.

Using PUFs for secure key storage PATRIOT makes management of a secure system easier as no key provisioning is required. This is because PUFs extract secure cryptographic keys from the hardware fingerprint of the device. Compared to dedicated security devices, i.e. tokens, PATRIOT is more economical as no extra hardware is needed and also more convenient as no separate devices are needed. Compared to software solutions, PATRIOT provides a higher level of security without increasing costs or reducing user experience.

The consortium is focussed and composed by experts in the domain. The project is coordinated Intrinsic-ID, world-wide market leader for PUF-based security solutions.

Technikon is involved in all work packages and will bring in their expertise and experience from a couple of relevant closed and ongoing research projects focusing on PUF technology, such as UNIQUE, HINT, MATTHEW or HECTOR. Technikon will work on use cases in WP1 and lead the architecture development. Further Technikon will research tailored post-processing methods in WP2 and perform integration work in WP3.

The consortium is completed by the technical university Eindhoven, who will bring in their expertise on signal processing and their background in information theory and coding.

For more information visit <http://www.patriot-project.eu/>.