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**Keywords :** Cybersecurity, Supervision, IIoT Cryptology, IT Networks

**Abstract :** **Cybersecurity** is crucial for industrials. The convergence of the physical and digital worlds has led to a significant increase in data breaches. This MSR aims at building a prototype **of an industrial 4.0 factory**, and **to develop a supervision** to verify various ciphering algorithms for robustness, performance, and security.

## Part 1 - Objectives :

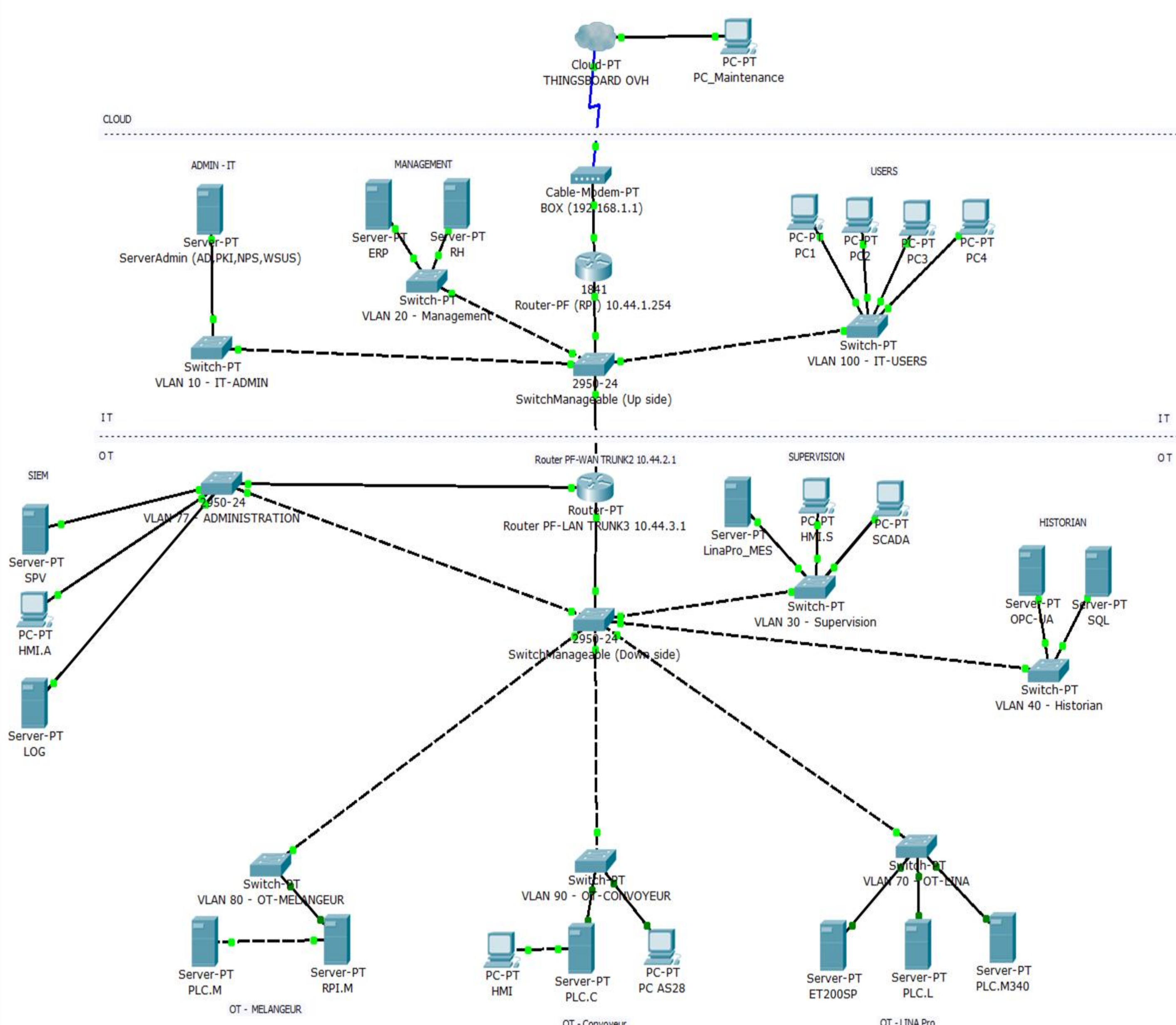
- 1- Realize a **Cybersecurity Supervision**
- 2- Propose a **key renewal strategy**
- 3- Standard **ciphers analysis** of AES-128-GCM and Chacha20-Poly1305



Supervision Platform - Lina Pro (without security)

## Part 2 - Experimental :

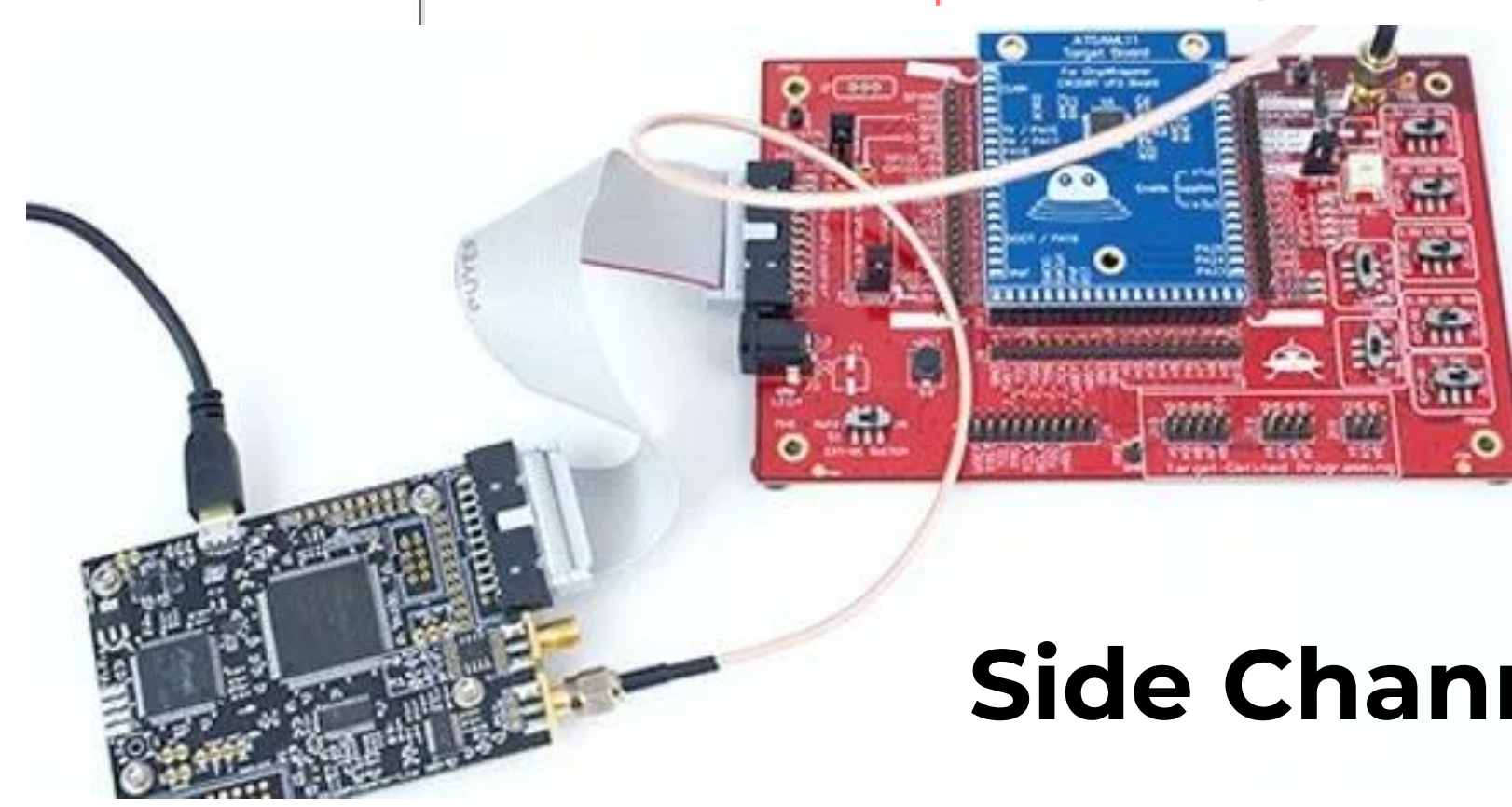
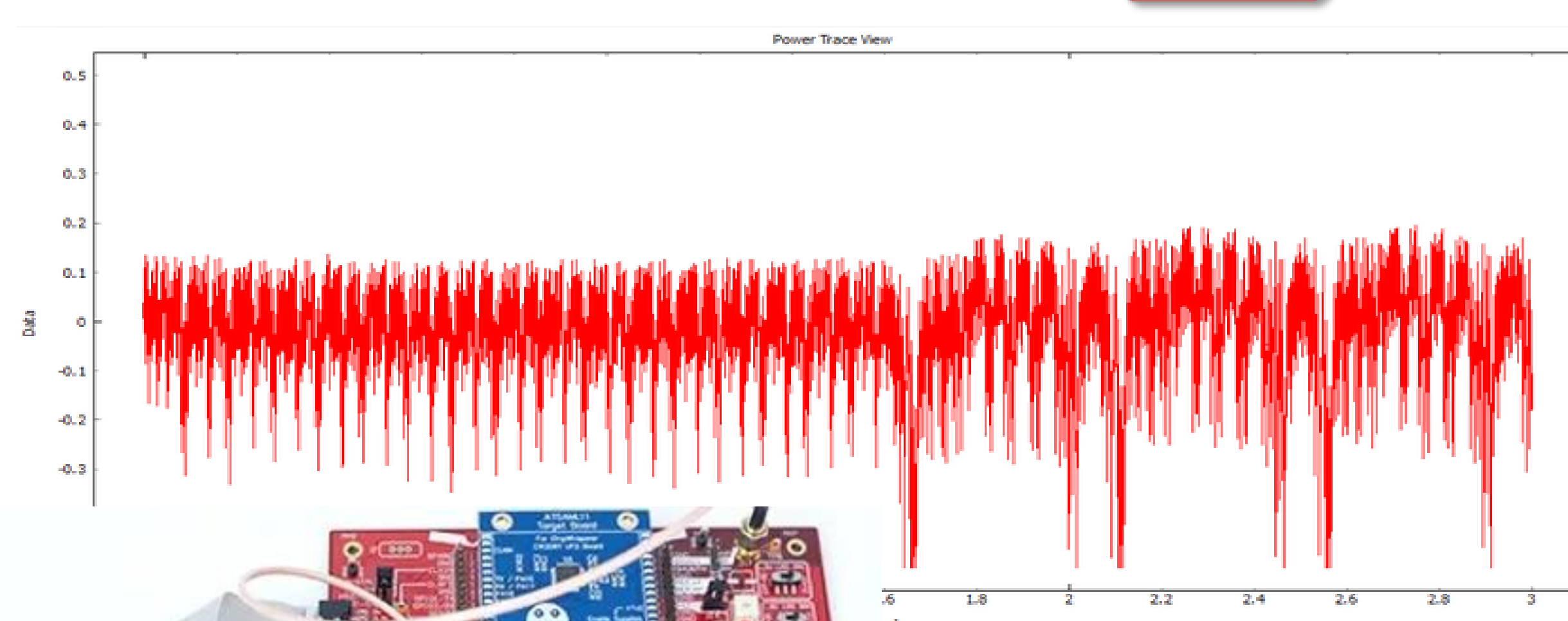
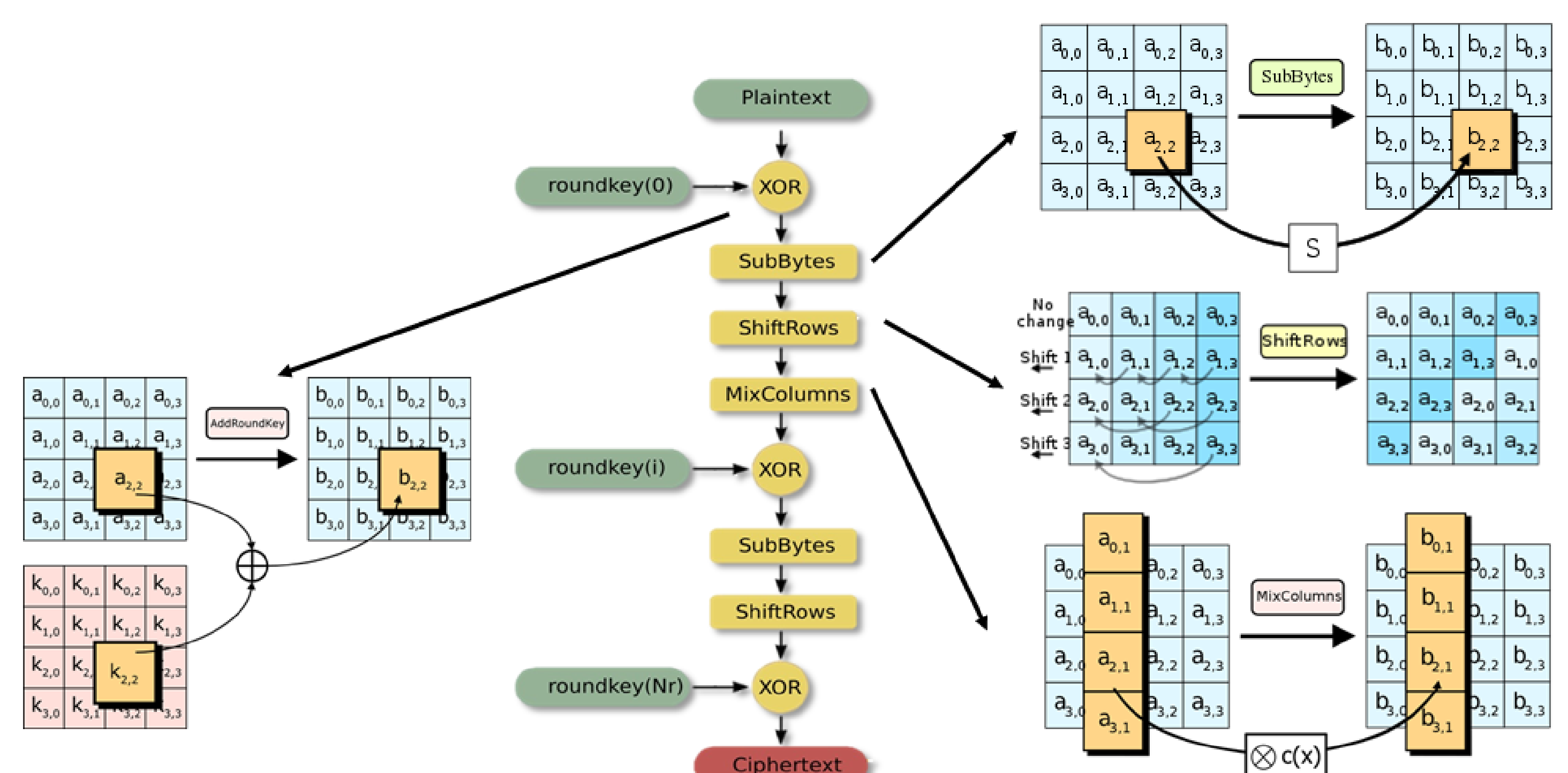
- 1- Deployment of an industrial 4.0 factory
- 2- Implementation of ciphers on RPI and IoT
- 3- Measurement and testing of performance, security and power consumption criteria.



Deployment of an industrial 4.0 factory architecture

## Part 3 - Skills :

- 1- Cybersecurity aspects
- 2- IT/OT Networks Infrastructures
- 3- Python cryptology library
- 4- Mathematical for encryption



Side Channel Analysis on AES

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