



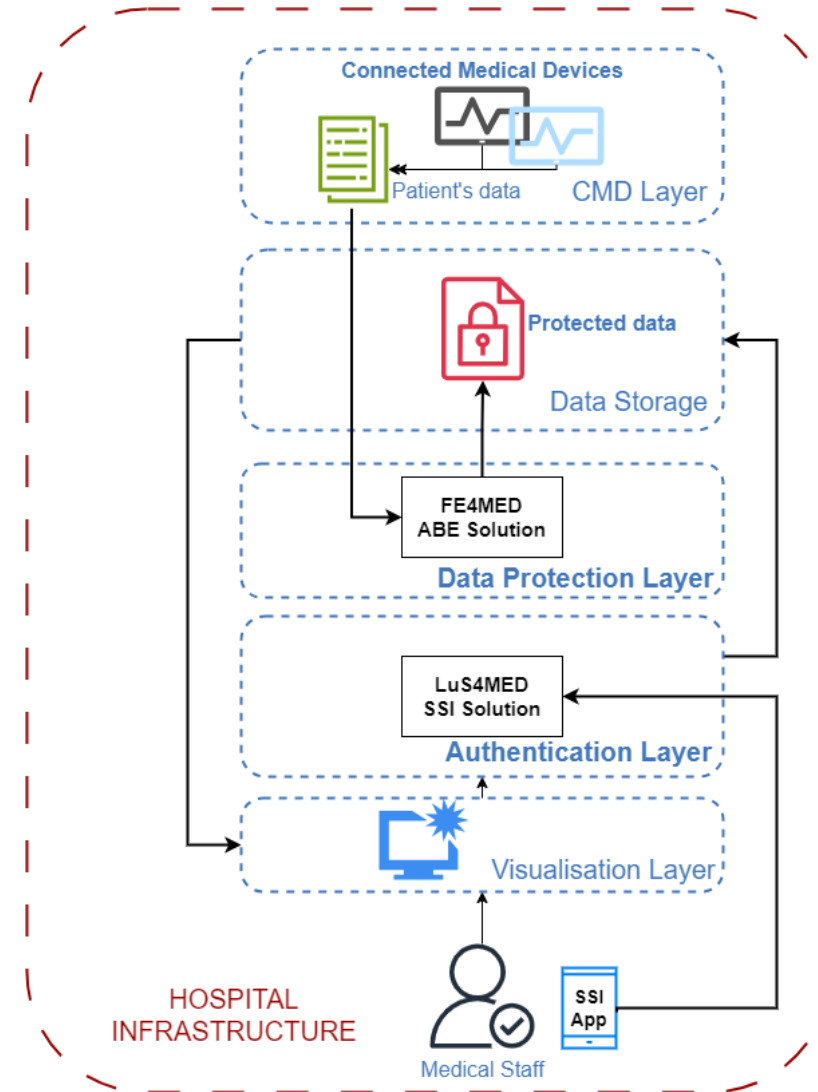
## **T5.3 IDENTITY AND DATA PROTECTION TOOLS FOR CONNECTED MEDICAL DEVICES**

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1. **Design and implement the Authentication and Authorization functionalities** of CYLCOMED toolbox, following a decentralised approach for the management of CMDs by owner entities and data sharing with all interested organisations to ensure patients monitoring and wellness while following ethical and legal requirements identified in WP2, and security recommendations from WP3. → **LuS4MED for authentication and C-OPA for authorization.**
2. **Deliver:**
  - A. A decentralised and user-centric technology for secure identity management (**LuS4MED**) and access control (**C-OPA**) for protection against unauthorised access.
  - B. A privacy-friendly secure data exchange among devices and healthcare providers in cross platform and even cross-border settings based on novel encryption schemes such as CP-ABE or KP-ABE (**FE4MED**).

The combination of different **solutions for accessing and protecting data** generated by the Connected Medical Devices (CMD), **helps to protect data, enhance user data privacy and prevent data breaches.**

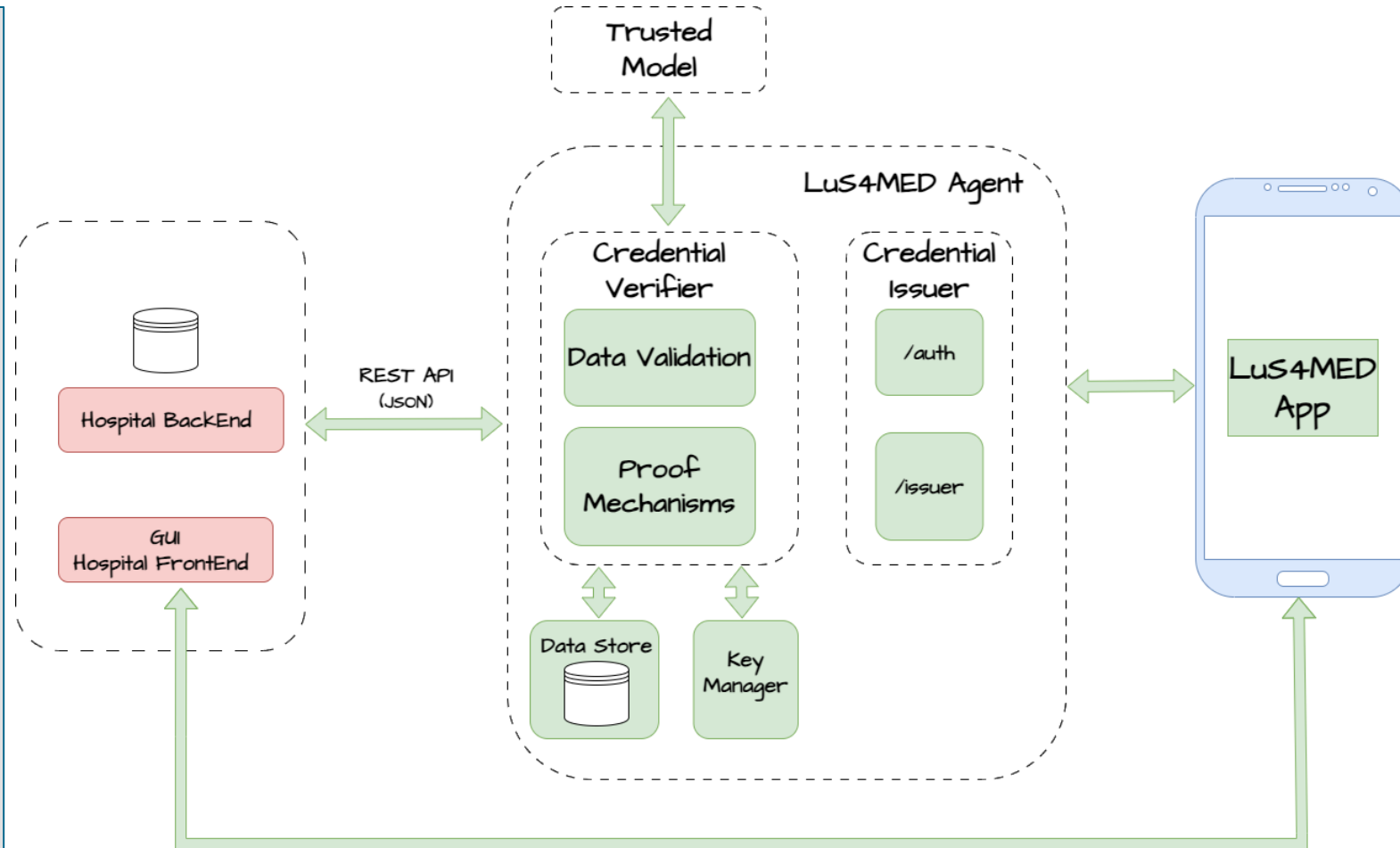




# LUS4MED: IDENTITY SSI SOLUTION

The **LuS4MED** tool is a decentralized solution based on the self-sovereign identity (SSI) paradigm **preserving the patient privacy and confidentiality of the sensitive data generated by the CMDs, preventing unauthorised access to the data.**

- Based on the **use of Verified Credentials (VC)** issued by trusted entities (hospital system).
- Comprise two components:
  - **uSelf Agent:** Issuing and validating VC. Integrated with SP
  - **Mobile app:** User interaction and VC storage

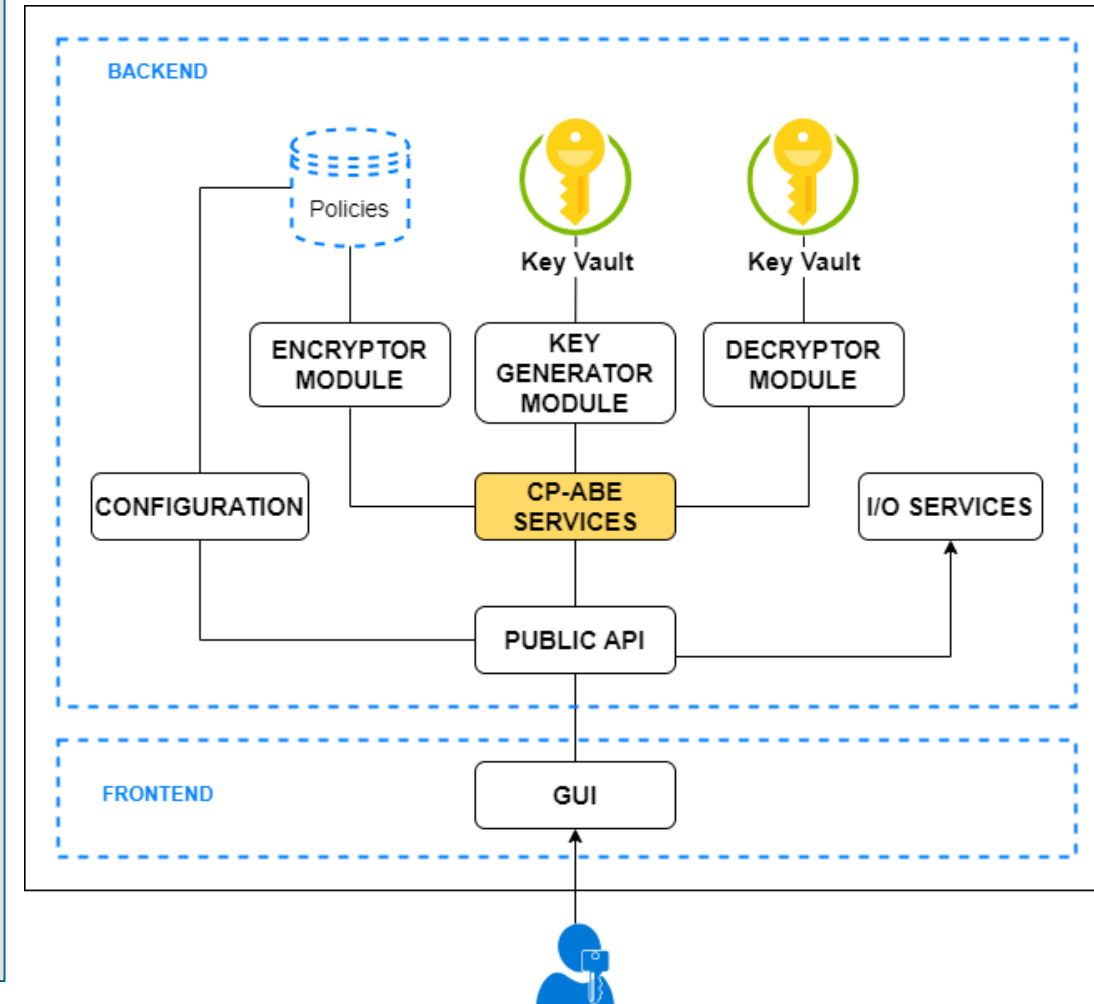


A stylized, light blue silhouette of a person's head and shoulders, positioned on the left side of the slide. The background is a solid blue color with a faint, repeating pattern of binary code (0s and 1s) and a large, semi-transparent white shape that resembles a stylized '4' or a similar character.

# FE4MED: DATA PROTECTION SOLUTION

## T5.3 DATA PROTECTION SOLUTION: FE4MED

- **FE4MED** is the **data protection** solution, based on the encryption of data generated by the CMDs, **complying** with the current **regulations** (GDPR), **secures data in transit and at rest, mitigating cybersecurity risks**.
  - Based on Ciphertext-Policy Attribute-Based Encryption (**CP-ABE**), encrypts/decrypts data using attributes-based access policies.
  - Ensure **data integrity and confidentiality**.
  - **Selective disclosure**: the encrypted data are only accessible to certain allowed users.
  - **Fine-grained Access control**.
  - Comprises **5 layers**:
    - **Encryption**: Key Generator, encryptor and decryptor modules.
    - **Storage** : Key vault for keys and DBs for policies and attributes.
    - **Support services**: Configuration and I/O services.
    - **Public API**: Accessing services.
    - **GUI**: User access

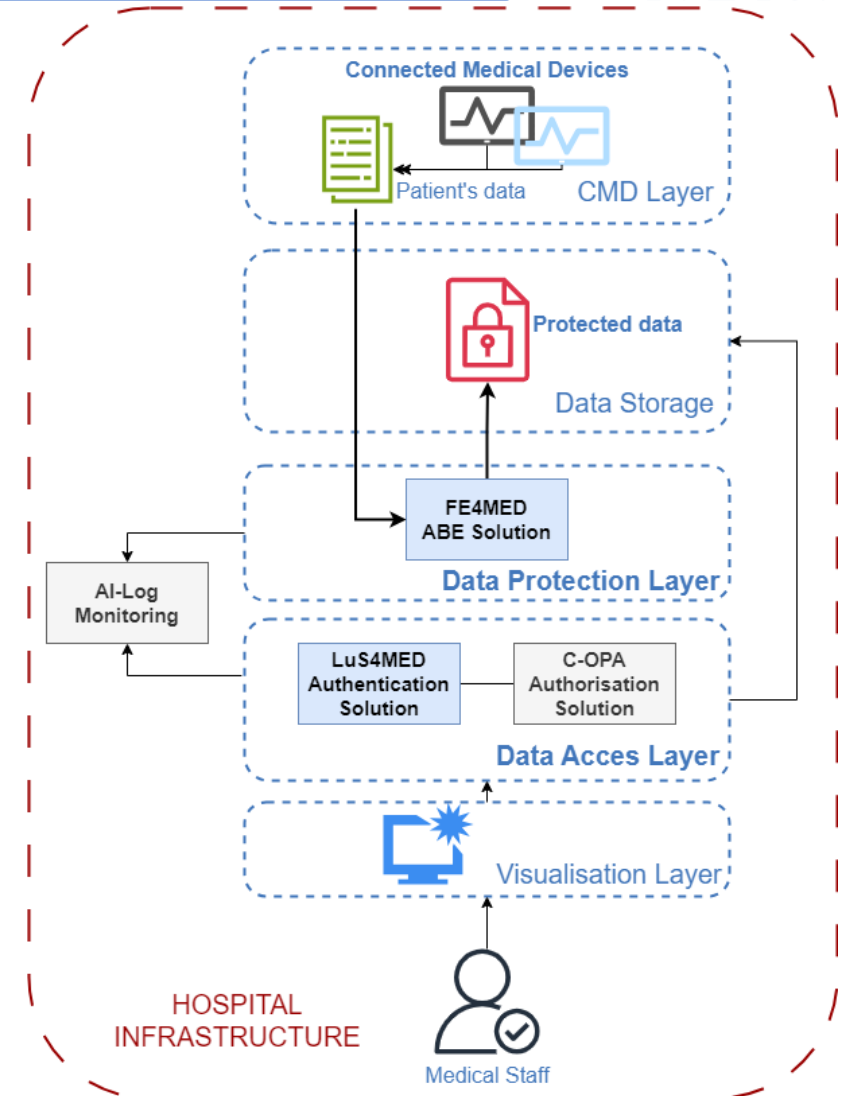




# INTEGRATION WITH CYLCOMED TOOLBOX AND PILOTS



- **FE4MED** and **LuS4MED** tools provide information to AI-Log monitoring tool (**LOMOS**) for **detecting malicious behaviour**.
- **LuS4MED** tool authenticates the user and provides a token to the **C-OPA** authorization tool for granting **access to the data**.





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THANK YOU FOR YOUR ATTENTION



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