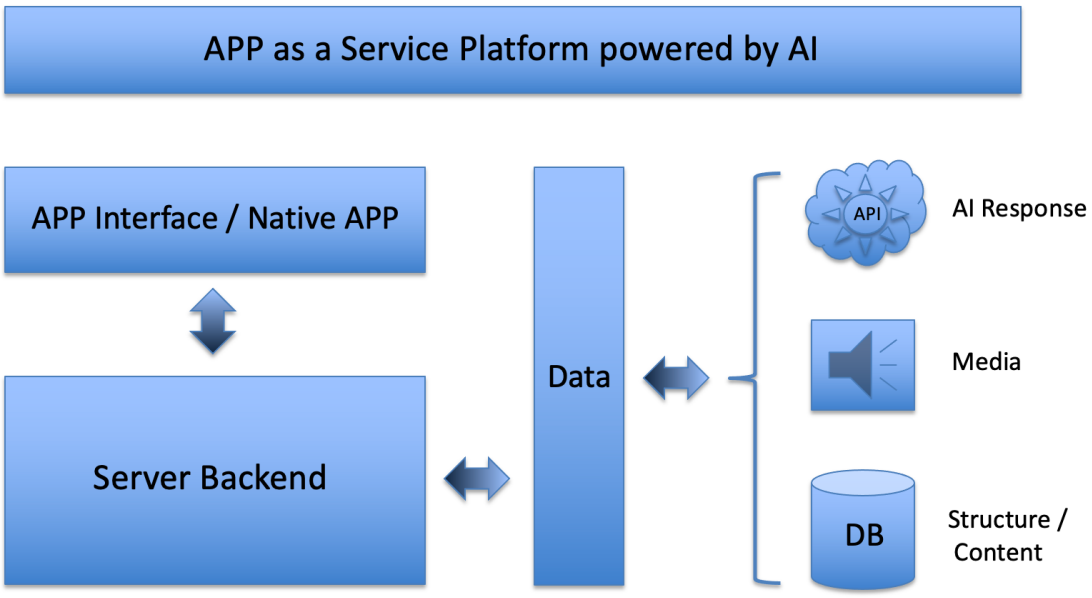
AI-Deputy 1.0 APP: Technical Architecture Summary

- strictly confidential -

1. Introduction

AI-Deputy is a cutting-edge **AI-powered therapeutic platform** designed to orchestrate **personalized therapeutic interventions** at scale. Unlike traditional mental health apps, AI-Deputy leverages a **cloud-based hybrid, App-as-a-Service model** that dynamically adapts to user interactions, using AI to personalize therapeutic content based on real-time data. The platform integrates backend AI orchestration, real-time media delivery, sensory hardware, and cloud storage into one modular ecosystem that ensures **scalability**, **data integrity**, and **compliance** with global standards.

Technical Foundation & Architecture



Hosted in Europe – Fully GDPR Compliant

2. System Architecture Overview

AI-Deputy's architecture is **modular**, with four core interacting layers that work together seamlessly:

1. **Client Layer (Web & Mobile)**:
   This layer provides the **user interface**, including interactive **voice guidance**, visual prompts, and exercise flow. The app can connect to **wearables** (e.g., haptic bands, scent emitters) to provide multisensory interventions (audio, haptic feedback, scents).

2. **Application Layer (Backend Services)**:
   The backend is responsible for **AI orchestration**, **session logic**, and **personalization**. It dynamically selects prompts and interventions based on user responses and tracks progress.

3. **Data Layer (Database & Cloud Storage)**:
   AI-Deputy uses a **multi-tenant database** to store data on users, sessions, cases, and prompts.

4. **(Compliance & APIs)**:
   This layer ensures that AI-Deputy adheres to **GDPR** and other data protection regulations. It provides **API interfaces** for integration with other systems, and will provide **dashboards** for therapists.

3. Connectivity and Resilience (No Offline Sessions)

AI-Deputy requires an **active internet connection** to start and maintain therapeutic sessions. This is critical for **AI integration**, **session orchestration**, **safety monitoring**, and **data audit**. The platform does not support a fully offline mode, as the AI relies on real-time data processing and user-specific adaptations.

- **Why connection is required**:
  - **AI-API connectivity**: Essential for therapeutic fidelity, prompt selection, and session logs.
  - **Compliance & safety**: Real-time supervision is needed for distress flags, ratings, and escalation pathways.
  - **Device control**: Haptic and olfactory devices are orchestrated via **server-issued commands**.

While an **active connection** is required, the system is designed for **low-bandwidth environments**, with fallback mechanisms in case of connectivity issues. For instance, if

the network drops mid-session, the app will show a “Reconnecting…” banner and continue the current step without advancing to the next.

4. Core Components

AI-Deputy’s architecture incorporates several core components that enable the therapeutic process:

1. **Database Layer**:
    - **Multi-tenant architecture** to isolate data between different users and institutions (e.g., clinics, therapists).
    - **Relational database** that stores sessions, cases, prompts, and therapeutic content. Each **session ID** is linked to a **user** to maintain data integrity.
2. **Backend Services**:
    - **AI orchestration engine** to dynamically select and sequence therapeutic content (audio, haptic feedback, etc.) based on user responses.
    - **Session logic** to track progress, trigger interventions, and manage transitions between steps in the therapeutic process.
3. **Media Layer**:
    - The **media pipeline** handles the delivery of **audio guidance**, **haptic feedback** and **cues**. It must support **low-latency synchronization** between media types (e.g., haptic pulse and audio tone).
4. **AI Module**:
    - The AI functions as a **Deputy Psychologist**, selecting from a library of predefined therapeutic prompts.
    - The AI is **protocol-bound** and does not improvise; it adapts based on **real-time user input**, ensuring a structured yet personalized experience.

5. Sensory Integration

AI-Deputy is designed to integrate multiple sensory systems to provide a **multimodal therapeutic experience**. It is planned to integrate **Haptic Systems**.

6. Compliance and Regulatory Framework

AI-Deputy is designed with compliance in mind. The platform follows **GDPR** principles for data protection, ensuring that sensitive user data is handled responsibly:

- Data minimization: Only essential data is stored to support therapeutic progress.

- Informed consent: Users must explicitly agree to the collection and processing of their data.
- Right to be forgotten: Users can request the deletion of their data at any time.
- End-to-end encryption ensures that all data transmitted between the app and servers is secure.
- The system minimizes identifiable and personal data.
- Ethical AI design: The AI's decision-making is protocol-bound.

7. Scalability and Infrastructure

AI-Deputy is built as a cloud-based hybrid APP as a Service model. It can run as a Web-App with an URL or as a native APP connected to the internet.

The architecture allows the system to scale efficiently, supporting thousands of sessions simultaneously:

The system also supports **multi-tenant architecture**, allowing different parties to use the platform as base for their custom designed APP.