Health & Care Cluster
of Large Scale Pilots

RADICAL HEALTH FESTIVAL Helsinki
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AI in hospitals: are we ready for it?"
Challenges and opportunities of AI deployment in hospitals

Parkinson's disease is chronic, progressive disease without cure

Current follow-up: Visits every 6-12 months

Visit to the neurologist or GP

Well-being of the patient and accuracy of the treatment plan is evaluated based on physical examination and history told by the patient

Fluctuations and progression

Symptoms may fluctuate hourly or daily. Disease is proressing slowly.

The number of patients is increasing globally

Complexity of the disease demands high specialization of health care

Symptoms

New motor, non-motor and cognitive symptoms appear as the disease progresses

Adjustment of treatment

Detailed knowledge of patient symptoms is needed for timely and accurate adjustment of medication and implementation on device aided treatments

What if we could do the monitoring of the patients between the visits?

And AI would help analyzing the data?

Facts about AICCELERATE Parkinson-Pilot

AIM

To provide a decission support tool for a doctor to

- Anticipate the progression of the disease with prediction algorithms
- Monitor the symptoms between the visits

DATA SETS

For development

- Medical registry data for the development of prediction algorithms
  - 5100 patients in HUS
  - 1000 patients in UNIPD
- Prospective remote monitoring data for symptom follow-up
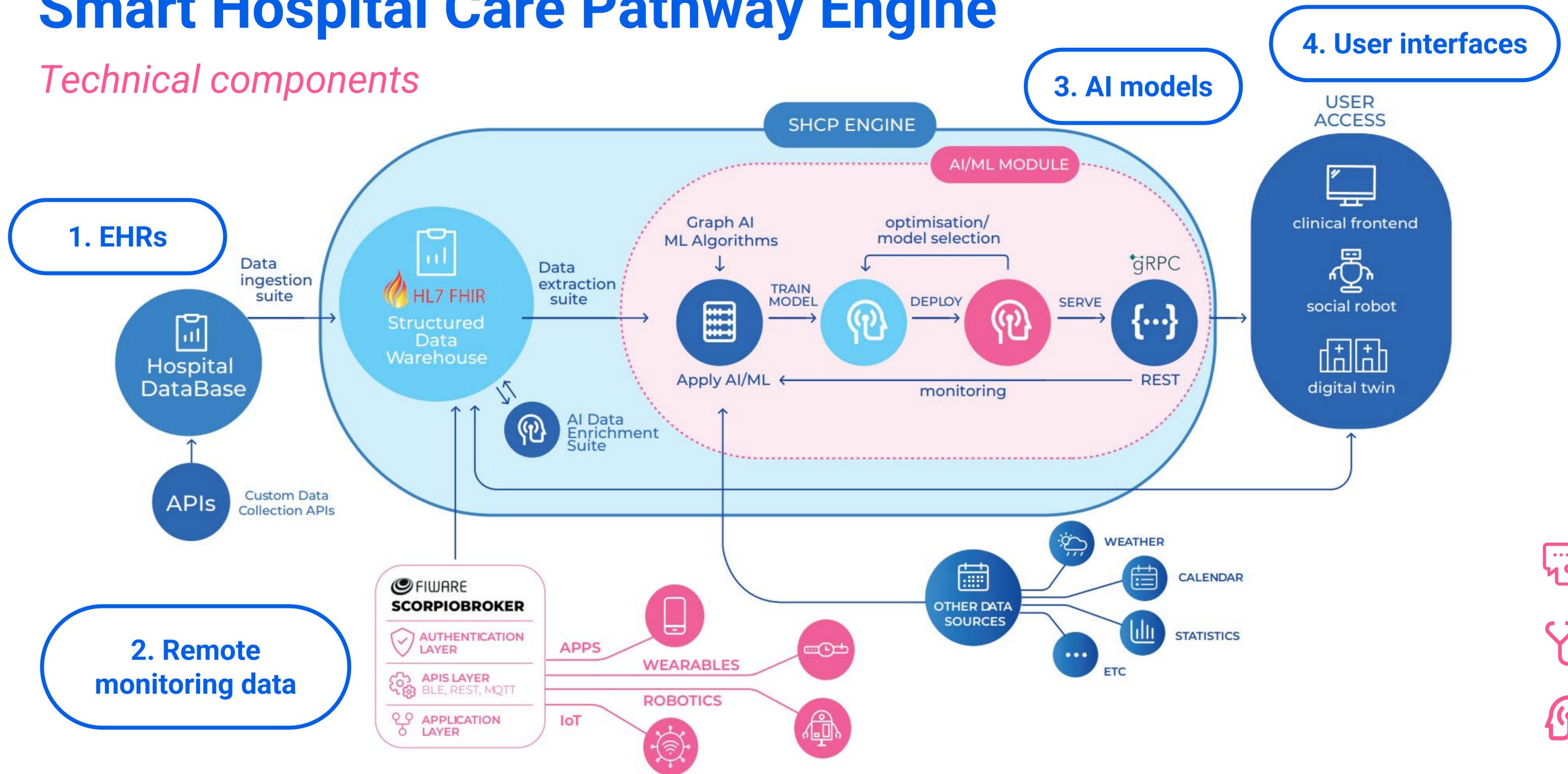- Cohort of 200 patients from HUS and UNIPD

DEVICES & APPS

For remote monitoring

- AI-enhanced motion capture and symptom diary (NeuroPath)
- Ignite2 wearable (Polar): mobility, sleep, heart rate
- Cognitive assessment app (UNIPD)
- Medicine dispenser robot (Evondos)
- MyPath digital service for patients (HUS)

Smart Hospital Care Pathway Engine

Technical components

1. EHRs

2. Remote monitoring data

3. AI models

4. User interfaces

SHCP ENGINE

AI/ML MODULE

USER ACCESS

Data ingestion suite

HL7 FHIR
Structured Data Warehouse

Data extraction suite

Graph AI ML Algorithms

optimisation/ model selection

gRPC

Hospital DataBase

AI Data Enrichment Suite

TRAIN MODEL

DEPLOY

SERVE

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Apply AI/ML

monitoring

REST

APIs

Custom Data Collection APIs

clinical frontend

social robot

digital twin

FIWARE SCORPIOBROKER

AUTHENTICATION LAYER

APIS LAYER
BLE, REST, MQTT

APPLICATION LAYER

APPS

WEARABLES

ROBOTICS

IoT

OTHER DATA SOURCES

WEATHER

CALENDAR

STATISTICS

ETC

Deployment enhancing elements in AICCELERATE

Modular structure of the Smart Hospital Care Pathway Engine allows local deployment with existing platforms and data processing solutions

Medical device regulation and CE-marking demands **integrated** to development plan from the beginning

Multidisciplinary development team (AI-experts, data analyst, IT-architects, clinicians, patients, lawyers, economists)

Doctors are interested in change, if technical tools are integrated to existing platforms and evidence-based.

Patients are ready to try AI and remote-monitoring, if they or their doctors benefit for it.

AI offers important new opportunities to improve care processes, quality of daily life and autonomy of Parkinson's Disease patients

AICCELERATE

smart hospital care pathway engine

www.aiccelerate.eu