



VVT en kansen in AI

Group: Ehv-S-A-RB04, Semester 7, Advanced Software

Project name: Automating AI workflows for healthcare institutions

Stakeholders: Fontys ICT (Robin den Oudsten, Richard van der Veen)

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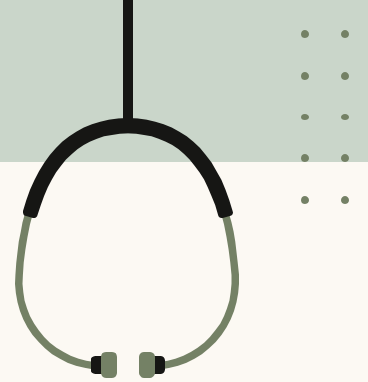
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01

Team and Stakeholders

Introduction of the team, stakeholders and the roles we took upon the team



Team



Jakub Jelinek



Nick Welles



Joery van Gerven



Ariel Clarence



Kaan Gögcay





Stakeholders

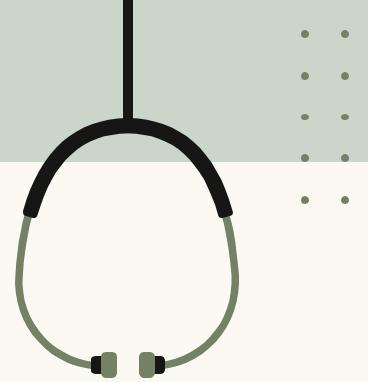


Robin den Oudsten



Richard van der Veen





02

Context and Purpose

Overview of the context, purpose, target audience, value, flow, and expected outcomes



Context 1/2

ECD Data and Its Importance

Care homes rely on systems to record and analyze patient data (ECD) for health assessment. This data helps care-takers predict health threats and improve patient well-being.



Challenges in Current Practices



Manual processes require significant time, staff, and patient sessions. Rising costs and demand necessitate automation to improve efficiency.



The “VVT en de Kansen van AI” Initiative

Collaboration between Fontys ICT, Tilburg University, Mindlabs, healthcare institutions, and Province of Brabant.

Project launched in 2022 to innovate healthcare using AI technology.



AI in Healthcare



AI models trained on data from care homes (e.g., Groenhuysen and Mijzo) to predict patient health threats.

Focus on using AI to assist care-takers in decision-making processes.



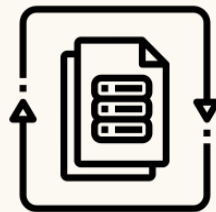
Context 2/2

Data Access and Structure Challenges



Patient data is highly protected, making access complex.

Lack of a generic format for storing data across care homes leads to inconsistencies.



Our Role in the Project

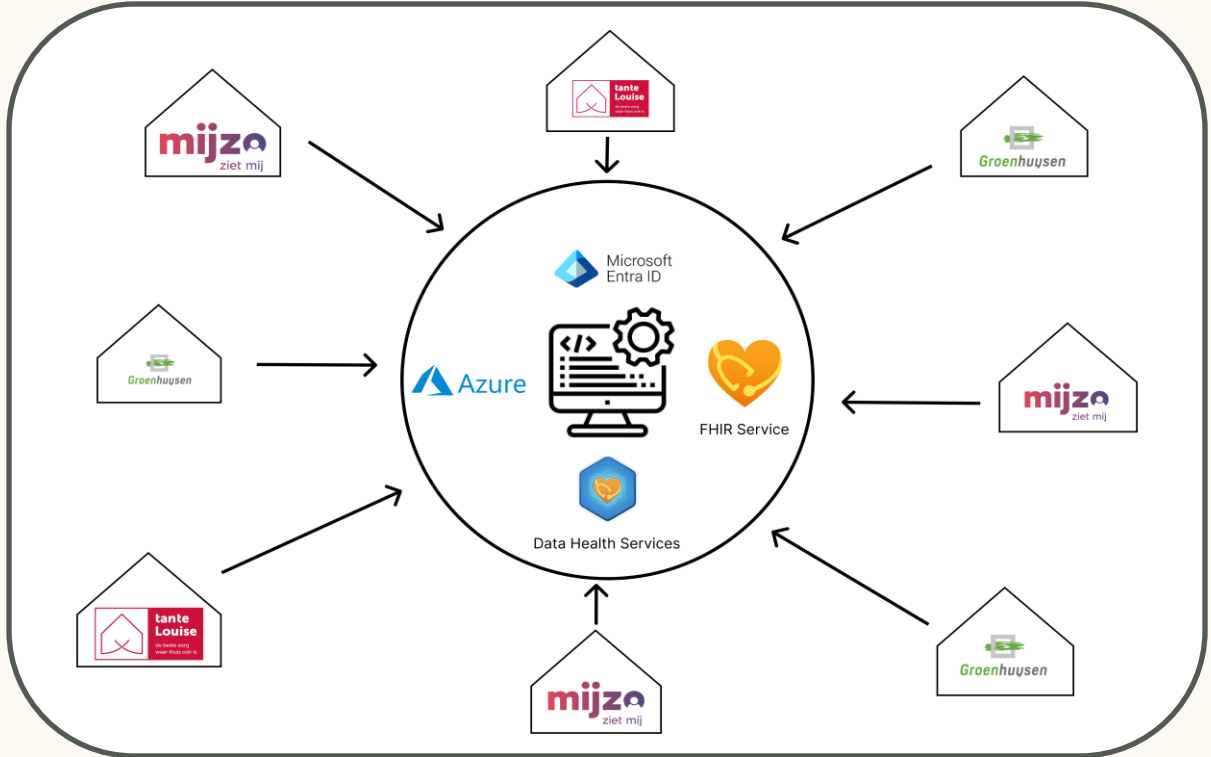
Securely obtain, process, and standardize data for use in AI models.

Deliver AI-generated insights back to care homes, ensuring authorized access for relevant staff.



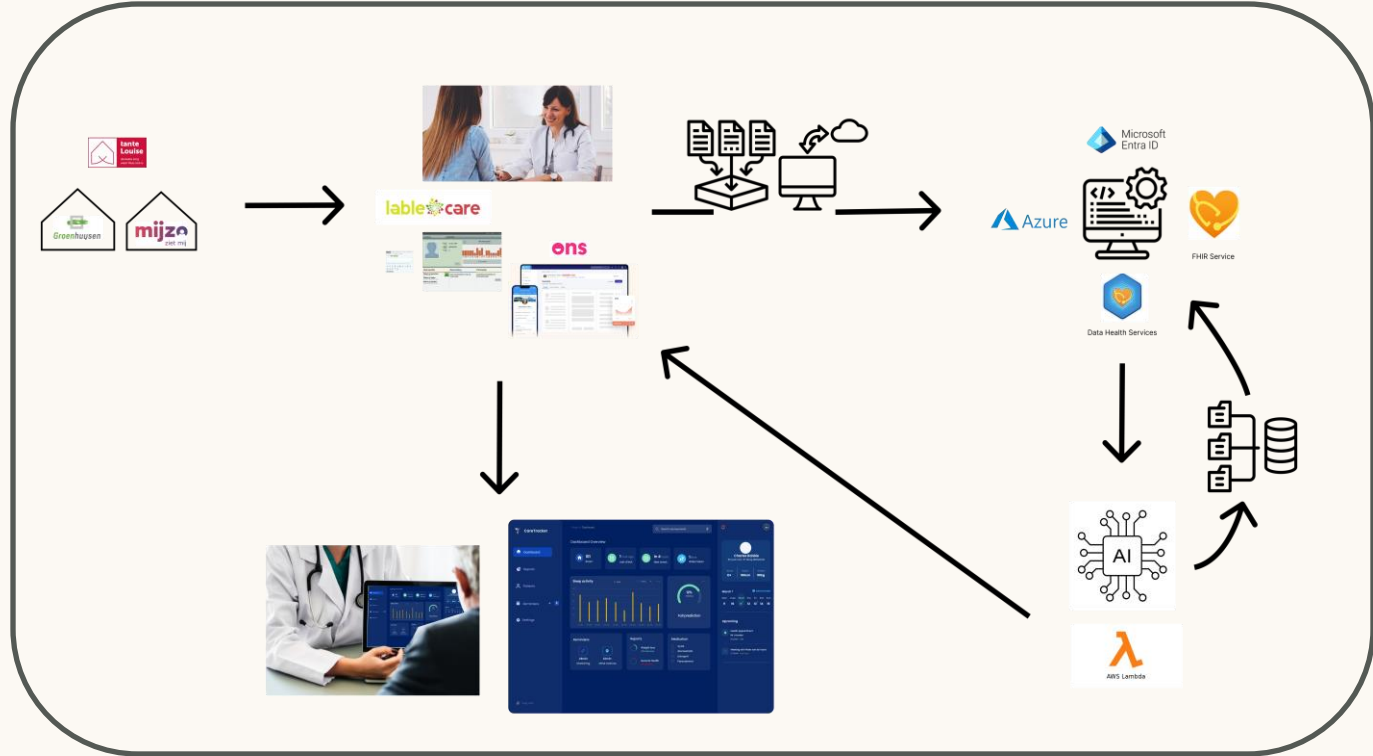


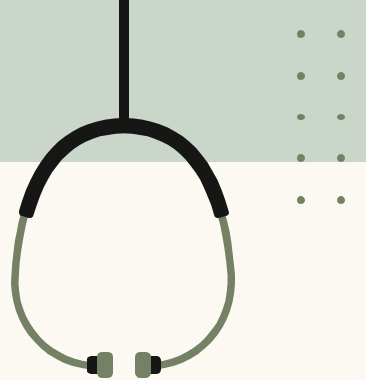
Desired product





Flow of our system usage





03

Progress and Research

Overview of completed milestones and current status



Progress and Research



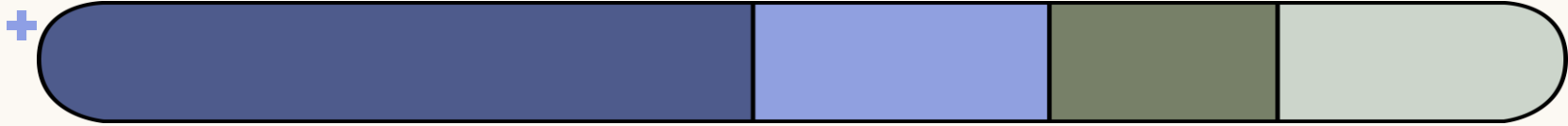
Research

Azure environment, FHIR vs HL7,
Data Lake vs Data Warehouse ->
Lakehouse, GDPR, Data Factory,
openEHR, KIK-V, Coding
language

Implementation

Custom FHIR running in DF
pipeline, FHIR Service, Storage
Solution

Progress and Research



Research

Azure environment, FHIR vs HL7, Data Lake vs Data Warehouse -> Lakehouse, GDPR, Data Factory, EntraID (Active Directory) vs OAuth?

Research to be done

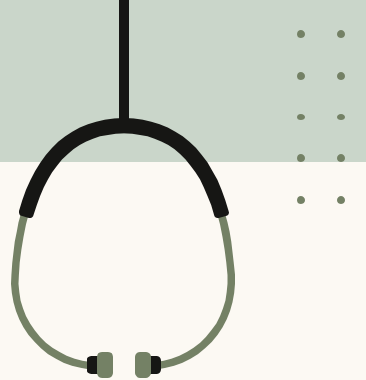
EntraID (Tenant and multiple organizations)

Implementation

Custom FHIR running in DF pipeline, FHIR Service, OAuth?

Implementation to be done

EntraID setup and configuration, Pipeline trigger, Upload data system



04

Advice and Reflection

Advice for next iterations



Advice and Reflection

1. Planning with Azure requires allocating more time than anticipated
2. Follow Microsoft documentation
3. Request access to Microsoft Azure Entra ID
4. Field research on “Distinction between care homes requirements” to evaluate whether to pick ADF Custom pipeline or General FHIR Service provided by Data Health Services

