

# GENOMED4ALL

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Genomics and Personalized Medicine for  
all through Artificial Intelligence in  
Hematological Diseases



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We are the **European initiative** to transform  
the response to **Hematological Diseases**  
by seizing the power of **Artificial Intelligence**

# Our vision

An **open hub** for **clinicians** and **researchers** to work together **defining, developing** and **validating AI models** to improve the way we currently **diagnose** and **treat** hematological diseases



Our **privacy-by-design** approach relies on a **Federated Learning** framework to ensure that no patient data ever leaves clinical sites



A new paradigm built on **robust, ethical agreements** to bring **community** members together through explainable AI

# Our value proposition

## For clinicians

A local **decision-support system** to input new prospective and retrospective patient data, extracting insights from an ever-learning model



## For researchers

An **AI workplace** to explore datasets, develop, test and train new models on real-world data using our Federated Learning environment

# Unleashing the power of AI



## Diagnosis

AI algorithms for early identification of high-risk individuals



## Prognosis

Predictions for insight on disease development



## Treatment

Clinical decision support models for risk stratification

# The context



**Most hematological diseases have a genetic background**

There are up to 450 variants (oncological and non-oncological)



**They represent a growing public health challenge**

They account for 5% of cancers, most can cause chronic health issues and many are life-threatening conditions



**EU repositories are unconnected**

The number of available samples remains small and there are no centralized Big Data repositories

# Our ambition



86%

Clinical repositories with genomics data connected across 15 EU countries



15%

Accuracy improvement in specific genomic markers for prognosis and treatment



20%

Boost in the adoption of open standards for -omics data at clinical sites



80%

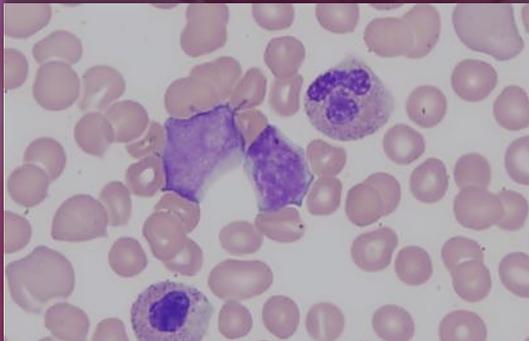
Time reduction in AI analysis and model training through supercomputing

# Our use cases

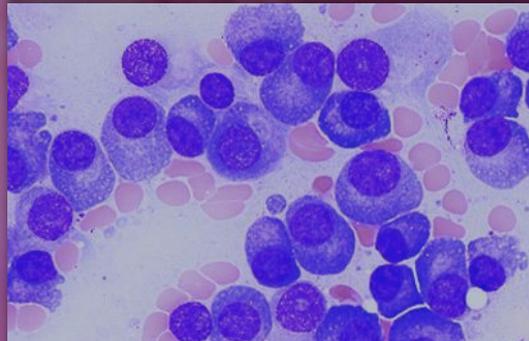
## Validating AI in Hematological Diseases

White box AI models for common and rare oncological and non-oncological hematological diseases

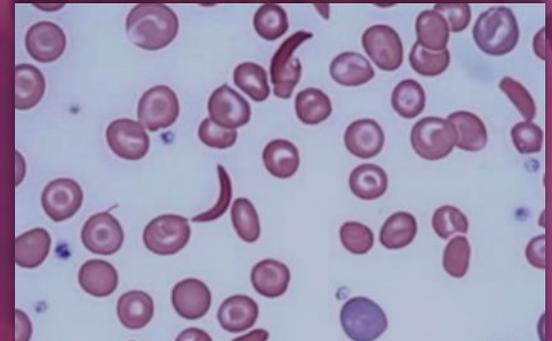
Myelodysplastic  
Syndromes



Multiple  
Myeloma



Sickle Cell  
Disease



# Meet the Team!

23 organizations from 8 EU countries

Experts from the healthcare sector, regulatory and ethics research, academia, disruptive tech and digital service provision



ThermoFisher  
SCIENTIFIC



Datawizard



HUMANITAS  
RESEARCH HOSPITAL



ASSISTANCE PUBLIQUE HÔPITAUX DE PARIS



ESIEE  
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CINECA

Endorsed by ERN-EuroBloodNet

The European Reference Network for oncological  
and non-oncological rare hematological diseases



10 clinical partners onboard!



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