Company purpose

IDOVEN is a health technology company advancing early diagnosis and intervention for cardiovascular diseases.

Our mission is to **preserve human life** by enabling a healthier world in which no cardiovascular disease goes undiagnosed or untreated.

We have created an **AI-powered, cloud-based electrocardiogram (ECG) analysis software.**

GAME CHANGER

"Give us an electrocardiogram, and our artificial & cardiologic intelligence will turn it automatically *without supervision* into a medical diagnosis"

IDOVEN
artificial & cardiologic intelligence

The Solution

A SaaS Medical Platform powered by AI that analyses Electrocardiograms and Holters
of any duration, from any wearable or medical device, to diagnose at cardiologist-level accuracy

The solution: Willem. How our platform works

Our cloud-based Artificial Intelligence Medical Platform for electrocardiograms analysis that detects and classifies arrhythmias at a cardiologist level in real time

Raw ECG
Signals of any
duration, from any
device (ECG,
holter, wearable,
implantable)

AI algorithms in
the cloud
process the
signal

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ECG Report

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ECG: Electrocardiograms

The Solution

How our platform works

ECG signal captured anywhere	AI algorithms in the cloud process the signal	Medical-grade diagnostic report	Supervision and certification by a cardiologist (if required)	Diagnostic report ready for review by any physician/patient
ECG of any duration, from any device (ECG, holter, wearable, implantable)	>90% global accuracy in 86 classified arrhythmias	Delivered in real-time anywhere for short ECGs, <7.5 min for long duration ECGs	A cardiologist can confirm the AI-generated diagnosis	Over 11,200 combinations of common and rare arrhythmias can be detected

The Solution

6 ways Willem™ represents a breakthrough in diagnostic technology

Most comprehensive diagnostic solution: Willem standardizes the diagnosis of the 84 most frequent cardiac patterns, affecting 90% of the global population.

Cardiologist-level accuracy: Willem aids physicians to make an accurate diagnosis for every patient, every time, from anywhere (in the hospital, at home or on the move). Willem operates at 95% sensitivity and 96% specificity.

Delivery in seconds/minutes, not hours/days: Willem can deliver a diagnosis in:
- real time for short-duration ECGs (vs. 1-5 minutes for a cardiologist, if available);
- less than 2.5 minutes for 24-hour ambulatory ECGs (vs. 20-40 min for a cardiologist); and
- less than 7.5 minutes for 7-21 days long-duration ambulatory ECGs (vs. 2-8 hours for a cardiologist).

Prediction of atrial fibrillation: Our AI models can predict the evolution of atrial fibrillation for a patient within the next 6 months, even for patients with no prior history, with just physiological data.
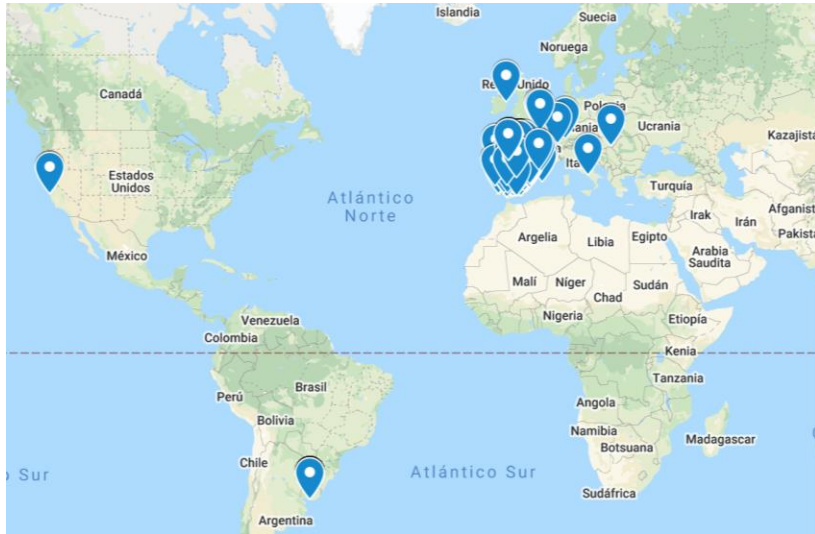
Device-neutral approach: Through APIs, Willem can integrate with any existing ECG hardware, hospital system or electronic health record (EHR). Our AI platform can read any ECG signal format (JSON, DICOM, EDF, CSV among others).

Highest safeguards for quality management and patient data: We are certified for the highest internationally-recognized standards for information security management systems (ISO 27001, 27017, 27018, 27701) and quality management system (ISO 13485). Our analysis is performed on de-identified studies and anonymized/pseudo anonymized patient data.

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Easily scalable B2B SaaS model for ECG analysis

We have not only been able to **create** a product associated to a service, but we are also being able to **distribute** it
18 commercial agreements, some of them with market leaders

Rapid internationalization

Big health Entities & Health Digital Platforms

to boost recurrence

IDOVEN
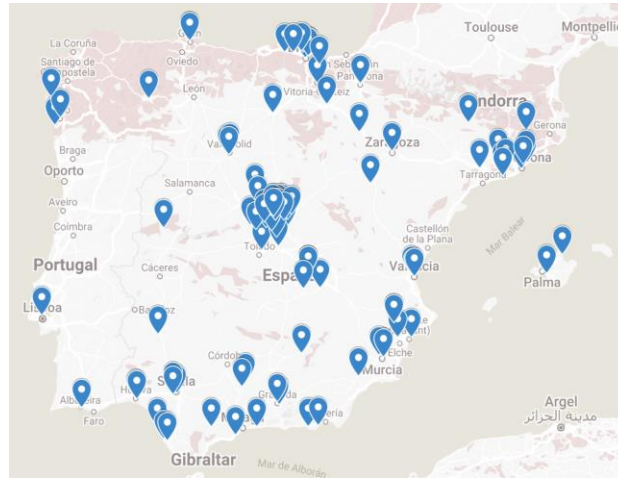artificial & cardiologic intelligence

Telerehabilitation challenge

We have sent our services to **11 countries** where we have monitored patients without needing to travel to the nearest healthcare provider centre.
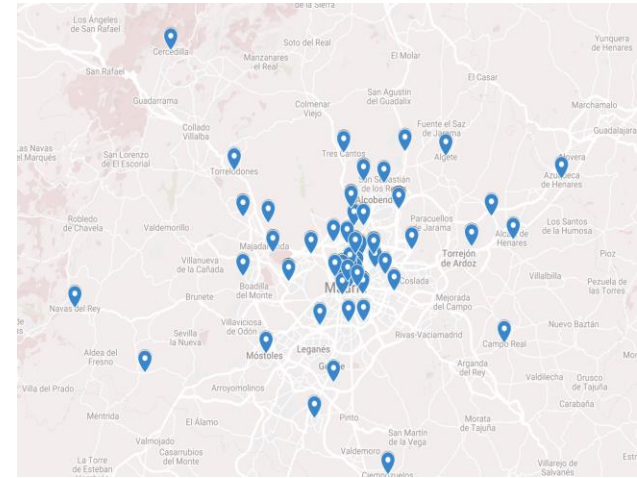
11 countries:
Spain
Portugal
France
Italy
Finland
Ireland
Switzerland
Hungary
USA
Mexico
Uruguay

Spain & Portugal

Madrid Community

Grouped by postal code

Social & Economic impact

For each **1,000 patients** we analyze...

+350

are early diagnosed in a subclinical state

+230

do not need to be admitted at the hospital due to early treatment

+15

will not die from undiagnosed cardiovascular diseases

Translating this to the **2.5 million heart patients** over the next **5 years**...

+€9bn

cost reduction for Healthcare systems for the treatment of Cardiovascular Diseases

Plus knowledge contributions to the scientific community with 3 peer-reviewed publications each year and scientific collaborations with Spanish Society of Cardiology, Libin Cardiovascular Institute (Canada) and Stanford University (USA)

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Grants & Awards

€250,000

Rank
nº1 HealthTech Project in Spain

EIT Health is supported by the EIT, a body of the European Union

€75,000

Living Labs and Test Beds
Headstart
Bridgehead Europe

European Commission

SEAL OF EXCELLENCE

Emprendedor XXI Award, Everis Awards, Forbes list, Healthy Longevity Catalyst Award (U.S. National Academy of Medicine), and 3 acceleration programs from **Google for Startups, Emprende InHealth (UnLtd & Lilly), Scaleup Spain**

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Grants, Awards and Partners

€14M

Partner at MAESTRIA
Consortium (H2020 Project)
IDOVEN Budget €488,000

€6.5M

EIC Accelerator Programme
IDOVEN Budget
€2.5M Grant + €4M Equity

Leadership team

Manuel Marina Breysse, MD. MsC.
Cardiologist & CEO

- +10 years scientist (data pipelines)
- +10 years cardiology experience
- Master's degree in Statistics
- 20 scientific publications
- Executive Education at ESADE and Singularity University (USA)

Linkedin
Scientific work

José María Lillo, PhD.
Telecommunication engineer & CTO

- +10 years scientist (big data)
- +10 years AI experience
- Master's degree Biomedical Engineering
- 11 scientific publications
- PhD on Machine Learning applied to cardiology (signal processing)

Linkedin
Scientific work

Rika Christanto, MBA, Harvard.
Serial entrepreneur & COO

- Co-Founder, ex-COO/CFO at Ontruck (AI startup in logistics)
- +€60M from VC
- Leading teams >200 people
- Angel Investing at Accel
- Ex-McKinsey, Ex-Morgan Stanley
- MBA, Harvard Business School

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Closing note

The importance of early detection

"A year ago I suffered a heart attack and was forced to retire from elite football. Suddenly my life changed completely and I found myself re-evaluating my priorities. What happened to me can happen to anyone.

In my pursuit for solutions on how to address this problem, I spoke with experts, physicians and researchers. I learned that early detection and healthy lifestyle habits are two of the key components in the response to cardiovascular diseases".

This is exactly what IDOVEN does, a pioneering Spanish startup that detects cardiovascular diseases early through the use of artificial intelligence. They are automating the analysis of electrocardiograms (ECGs), the predominant tool used worldwide to diagnose heart diseases. This technology is a huge breakthrough in the early diagnosis of cardiovascular diseases, which are then treated in time before they lead to situations such as heart attacks (infarction or sudden death), cardiovascular accidents, heart failure and other complications.

I decided to join as an investor and ambassador to do my bit for this problem that affects so many people".

Iker Casillas, IDOVEN investor & ambassador.

United Nations Development Programme (UNDP) Ambassador. World Cup, ex-footballer at Real Madrid, Porto and Spanish National team.

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Data Saves Lives **#donateyourheartbeats**