2026 年 11 月 6 日

人とヒューマノイドのコミュニケーションを支援する AI プラットフォーム「ETHEA」 協力パートナー募集

ETHEA は、ハンガリーの Pannon Business Network（PBN）が開発した、人とヒューマノイドロボットとのコミュニケーションを支援する AI プラットフォームです。AI 専門家、エンジニア、心理学者、行動研究者、社会福祉分野の専門家が参画し、2 年以上にわたる応用研究をもとに開発されました。

ETHEA は、さまざまなヒューマノイドロボットに統合可能なハードウェア・ベンダー非依存型のプラットフォームであり、利用者に応じたコミュニケーションの最適化や行動・会話シグナルの分析を通じて、人とロボットとのより有意義な相互作用の実現を目指しています。

現在、同プラットフォームの実証・活用に向け、日本における協力パートナーを募集しています。協力分野としては、高齢者向け「ETHEA Social Companion」の実証試験、既存ヒューマノイドロボットへの統合、共同研究・実証活動、日本市場向けローカライズ、医療・介護・教育・メンタルヘルス分野での新たな応用開発などが挙げられています。

詳細は次ページ以降の資料をご参照ください。
ご関心をお持ちの方は、駐日ハンガリー大使館までお問い合わせください。

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Szombathely, 13 July 2026

Request for Support in Identifying Japanese Partners for the Hungarian-Developed ETHEA Platform

To whom it may concern,

I would like to introduce **ETHEA**, a Hungarian-developed Human–Humanoid Interaction Intelligence Platform, and kindly request your support in identifying potential strategic partners in Japan.

The platform has been developed by the Hungarian **Pannon Business Network**, based on more than two years of multidisciplinary applied research involving AI specialists, engineers, psychologists, behavioural researchers and social professionals.

To support international commercialisation and integration into regional innovation ecosystems, Pannon Business Network has also established **PBN Germany GmbH**, its German subsidiary. The role of the German entity is to facilitate international cooperation, market access and the development of partnerships with robotics companies, research organisations and end users.

Over the past two years, our research team has conducted extensive applied research using the **Ameca humanoid robot** as a research platform. The objective of this work has been to understand how humanoid robots can communicate with people in an ethical, transparent, personalised and socially beneficial manner.

The result of this research is **ETHEA**, a hardware- and vendor-independent intelligence platform that can be integrated into different humanoid robot systems. ETHEA enables robots to adapt their communication to the individual user, analyse behavioural and conversational signals, and support meaningful and measurable human interaction.

Our first application, **ETHEA Social Companion**, focuses on reducing loneliness and social isolation among older adults.

Unlike conventional companion technologies, ETHEA is not intended to replace human relationships or create dependency on technology. Its purpose is to **help older people reconnect** with their families, friends, neighbors and wider communities. The platform also applies scientifically developed social and behavioural indicators to measure changes in social engagement and wellbeing.

Japan is one of the world's leading countries in robotics and is also addressing major demographic and social challenges related to ageing. We therefore see strong potential for cooperation with Japanese organisations in the fields of **social robotics, elderly care, healthcare and human-centred artificial intelligence**.

We would be grateful for your assistance in **identifying Japanese partners** that may be interested in:

- testing ETHEA Social Companion with older adults,
- integrating ETHEA into existing humanoid robot platforms,
- conducting joint research and validation activities,
- supporting the localization of the platform for the Japanese market,
- and jointly developing further applications in healthcare, rehabilitation, education, mental health and other human-centred fields.

Potential partners could include humanoid robot manufacturers, universities, research institutes, elderly care providers, hospitals, municipalities, living labs and innovation organisations.

We would be pleased to provide a more detailed presentation of the platform and to participate in introductory meetings with organisations identified through the Embassy's and the foreign trade network's contacts.

Thank you very much for your consideration and for your support in strengthening the international visibility and commercialisation of Hungarian innovation.



Balázs Barta
Managing Director

PBN GERMANY - ETHEA PLATFORM

ETHEA Social Companion

The Sovereign European Intelligence Platform for Social Humanoid Robots.

ETHEA is the intelligence layer that transforms a humanoid robot from a machine into a trusted social companion.

Humanoid robots are the body.
ETHEA is the mind.

01. EXECUTIVE SUMMARY

ETHEA is the **intelligence** that makes a robot worthy of trust.

A hardware-independent AI platform for social humanoids

ETHEA is a hardware-independent artificial-intelligence platform developed specifically for social humanoid robots. The humanoid provides the physical interface; ETHEA provides the intelligence behind it.

It enables robots to understand emotions and context, remember the people they cooperate, communicate naturally, and build long-term trusted relationships – supporting healthy ageing, reducing loneliness and measurably improving wellbeing.

02. WHY ETHEA

Three principles, engineered from the ground up.

Human-Centered AI

Emotion-aware, context-sensitive interaction designed around the person - not the machine. Diginity, warmth and genuine understanding come first.

European Sovereignty

Engineered around European technological sovereignty - GDPR-compliant, AI Actaligned, transparent and explainable, with meaningful human oversight throughout.

Hardware Independence

One platform, many bodies. ETHEA deploys across multiple humanoid platforms, protecting public investment from single-vendor dependency.

03. PLATFORM ARCHITECTURE

The body performs. The intelligence undeerstands.

Humanoid Robot
The physical interface

ETHEA Platform
The intelligence layer

Trusted Relationship
The human outcome

04. CAPABILITIES & DIFFERENTIATORS

What the intelligence layer delivers.

- Understands emotions
- Understands context
- Remembers people
- Communicates naturally
- Builds long-term rust
- Supports healthy ageing
- Reduces loneliness
- Scientifically validated
- ✓ Hardware-independent
- ✓ Built for social humanoids
- ✓ Emotion-aware
- ✓ Human-centred interaction
- ✓ Ethical
- ✓ European
- ✓ Sovereign
- ✓ GDPR compliant
- ✓ AI Act aligned
- ✓ Scientific validation
- ✓ Human-Humanoid Research Infrastructure
- ✓ Multidisciplinary development

05. BUSINESS MODEL

There is more than one way to work with us.

1

Platform Licensing

For partners aiming to integrate a validated software platform into the operating system of their humanoid robot - transforming it into a valuable social companion.

2

Joint Development & Testing

For partners open to joint development and testing of further application areas of their humanoid robot.

THE CASE FOR ETHEA

The future of humanoid robotics will not be defined by hardware alone. Its real value comes from intelligent AI that enables robots to understand people, communicate naturally and create measurable societal impact. PBN Germany provides, through ETHEA, the sovereign European intelligence layer that makes this possible.

ETHEA
PBN Germany GmbH - The Sovereign European Intelligence Platform for Social Humanoid Robots
www.pbngermany.de | +49(0) 176 55061866 | Seyfferstraße 34, 70197 Stuttgart

PBN. making an impact.

Pannon Business Network

Numbers behind the results.

16,8 mio €

Cumulated project income since 2006.

80% originating from EU and other international funds

120+

European R+D projects

Quantifiable, audited results; each project has a direct impact on the local ecosystem

2 M€+

Cascaded funds to regional SMEs

Direct financial and technological transfer to local companies, in the recent two years.

500+

International partners

Relationship capital developed in two decades.

18

Partner universities and research centers in 4 countries

Integration into the European knowledge community.

first DIH

European No.1. Digital Innovation Hub - 2020

Among the first ones in Europe to establish digital innovation hub, and still pioneering in this field.

Largest cross-border income gap in Europe

R+D in % of GDP

4,1%
Vas county (1989)

0,4%
Vas county (2023)

2,2%
EU average (2023)

Net median personal income

1.100€
Vas county

2.200€
Burgenland (across the border)

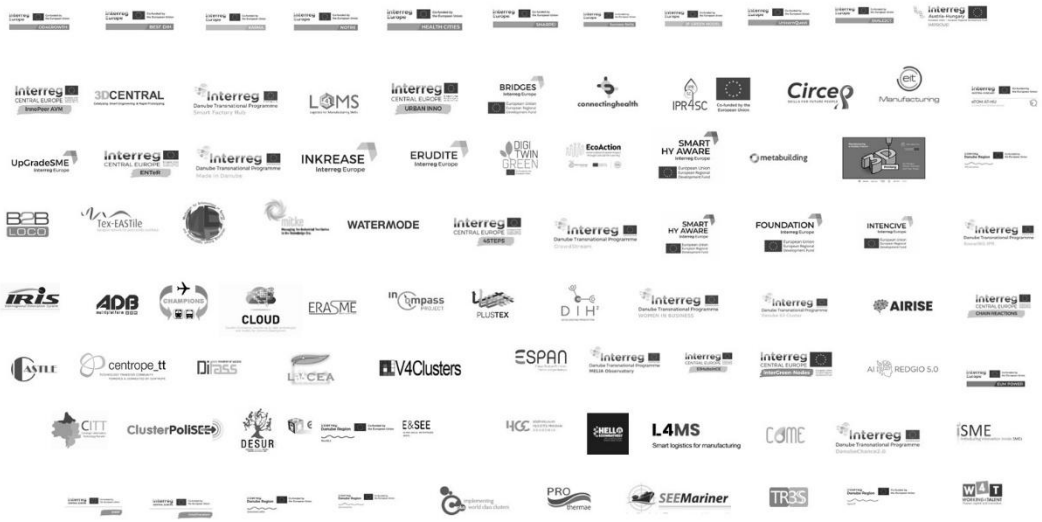
THE CHALLENGE

How to close the gap, when there is a 50% income and 5-times R&D spending difference?

PBN focuses on it, in international partnership.

PBN. 2006-2026.

Research-and-development and partnership projects

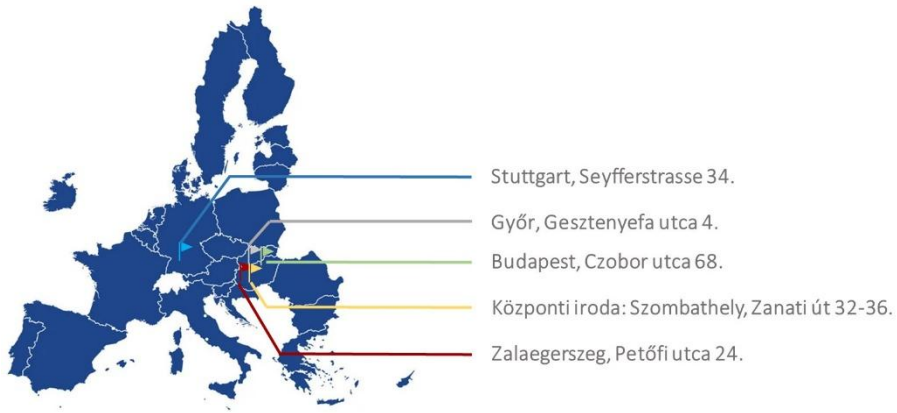


European partner network

120+ projects - Interreg, Erasmus, EIT, Horizon, AAL, V4
Exclusively in the field of research-and-development and innovation.

German daughter company

Integrated into the most advanced ecosystem of Europe



PBN Development Kft. | PBN Egyesület | PBN Germany GmbH | PBN Germany gGmbH

Concrete, measurable outputs



Autonomous production system

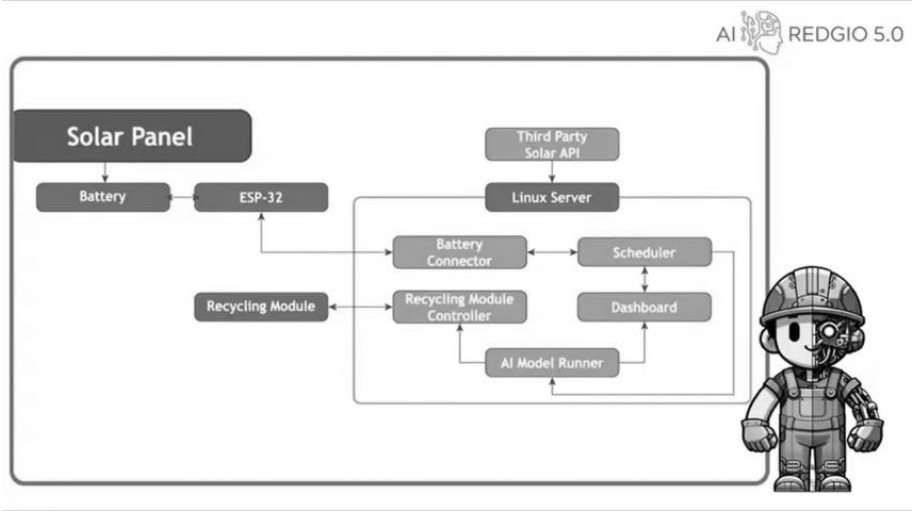
One-batch-size production simulating physical infrastructure, with open platform for high-value digital and AI-driven applications.











Concrete, measurable outputs



Intelligent senior care

Silver Club test environment, continuous product validations, humanoid robot research, start-up developments.











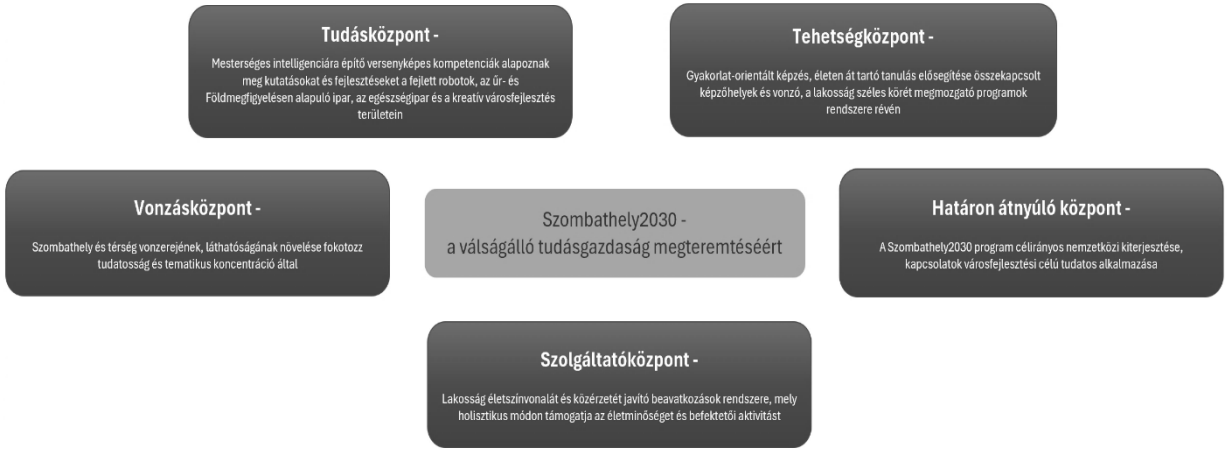
Ecosystem development





Szombathely2030

Initiated in 2019, a structured, systematic, cross-border agenda.



18 organizations

120 development projects

PBN. 2026-2028.

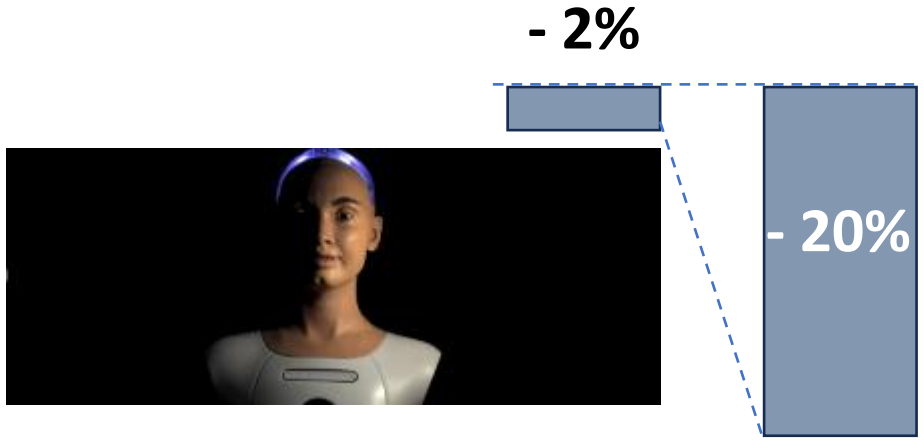
SECTORIAL FOCUS 01

Humanoid robotics

Pioneer position in a 100+ billion USD industry

The maturity of the industry has turned towards application orientation.
Hungary has perspectives in regu**lation, software development, testing and production**.

2% decrease in loneliness leads to
20% decrease in social costs



100 mio pcs Global humanoid market forecast by 2036

55 billion $ Market size by 2030 (2024: 3,5 billion USD, that equals 16 times growth rate)

2 mio € Investment of PBN with a multidisciplinary qualitative researcher team, for over 2 years. Ethical, transparent and efficient software.

NATIONAL ECONOMY RELEVANCE

Integration into international R&D value chain.

Humanoid robot software direct customer negotiations

Humanoid sandbox design.

Ukrainian war veteran programme.

Humanoid robot manufacturing FDI.

SECTORIAL FOCUS 02

Health and Life Sciences






Knowledge-oriented development with translational capacity

Reinforcing health industry with locally embedded, **cross-border R&D and clinical validation capacity**.

1 mio patients	High number of in- and outpatients in broad department portfolio
400 mio €	Investment of Austrian partners (new hospital + medical uni), strong synergy
350+ hectares	High FDI potential with investment promotion office, in local partnership
ISO 7	Clean room and biomedical laboratory, in close cooperation with the regional Markusovszky hospital

NATIONAL ECONOMY RELEVANCE

Western Transdanubian, cross-border and translational oncological, rehabilitational and health innovation ecosystem.

Advanced biobank and integrated clinical data infrastructure

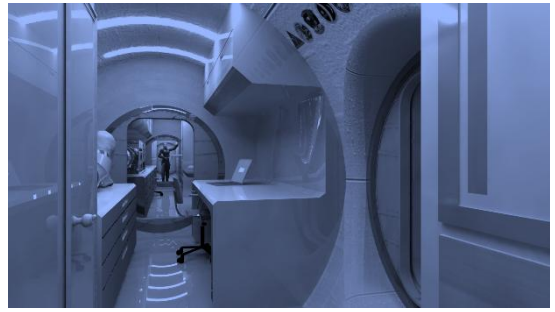
Smart hospital – AI and humanoid, robotics environment

Immersive anatomy institute – medical uni cooperation

Manufacturing – pharma factory and robotics factory

SECTORIAL FOCUS 03

Astro-wellbeing and space industry



Multiplicator-project: organic integration of multiple disciplines. Unique regional positioning.

The only such integrated programme, that connects simulation, robotics, psychology, nutrition and AI with the space industry.

30+ m²	Fully automated, robotized research infrastructure lab with immersive technologies
2.	International research projects to reveal relevant target segmentation and supplier market
3+	ESA, EU health, EIC calls, together with ELTE Gothard Observatory and Markusovszky hospital

NATIONAL ECONOMY RELEVANCE

Unique entry point into a fast growing market both in Europe and globally.

Space industrial logistics and robotics competence center

Space supplier development market entry point

Researcher and PhD test and experimentation facility

Three industrial pillars — one regional platform

The four components create one coherent structure: three sectorial focuses and the Szombathely 2030 platform, which ensures the strategic framework.

01

Humanoid robotics

message

Early-mover position

Sustainable positioning on a 100 billion USD market.

02

Life Sciences and Health

message

Strategic diversification

Automotive capacity exploited for robot production. Pharma industry based on local ecosystem.

03

Astro-Wellbeing

message

Multiplicator project

Entering a dynamic and high potential industry with unique infrastructure and positioning.

PLATFORM

Szombathely 2030

Strategic operational framework — 18 partner organizations, 120 complementary projects

It ensures the proper institutional anchor, the partner network and the coordination – in one city, on one platform.

PBN. making an impact.

www.pbn.hu
www.am-lab.hu
www.at-home.hu
www.pbngermany.de



