

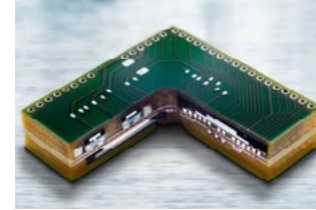


FRAUNHOFER PORTUGAL AICOS

Research Center for Assistive Information and Communication Solutions
APPLIED SCIENCE BY FRAUNHOFER – MADE IN PORTUGAL

Fraunhofer Portugal

Fraunhofer – Gesellschaft



- Innovation Research
- Information and Communication Technology
- Life Sciences
- Light & Surfaces
- Microelectronics
- Production
- Defense and Security
- Materials and Components

72 Institutes

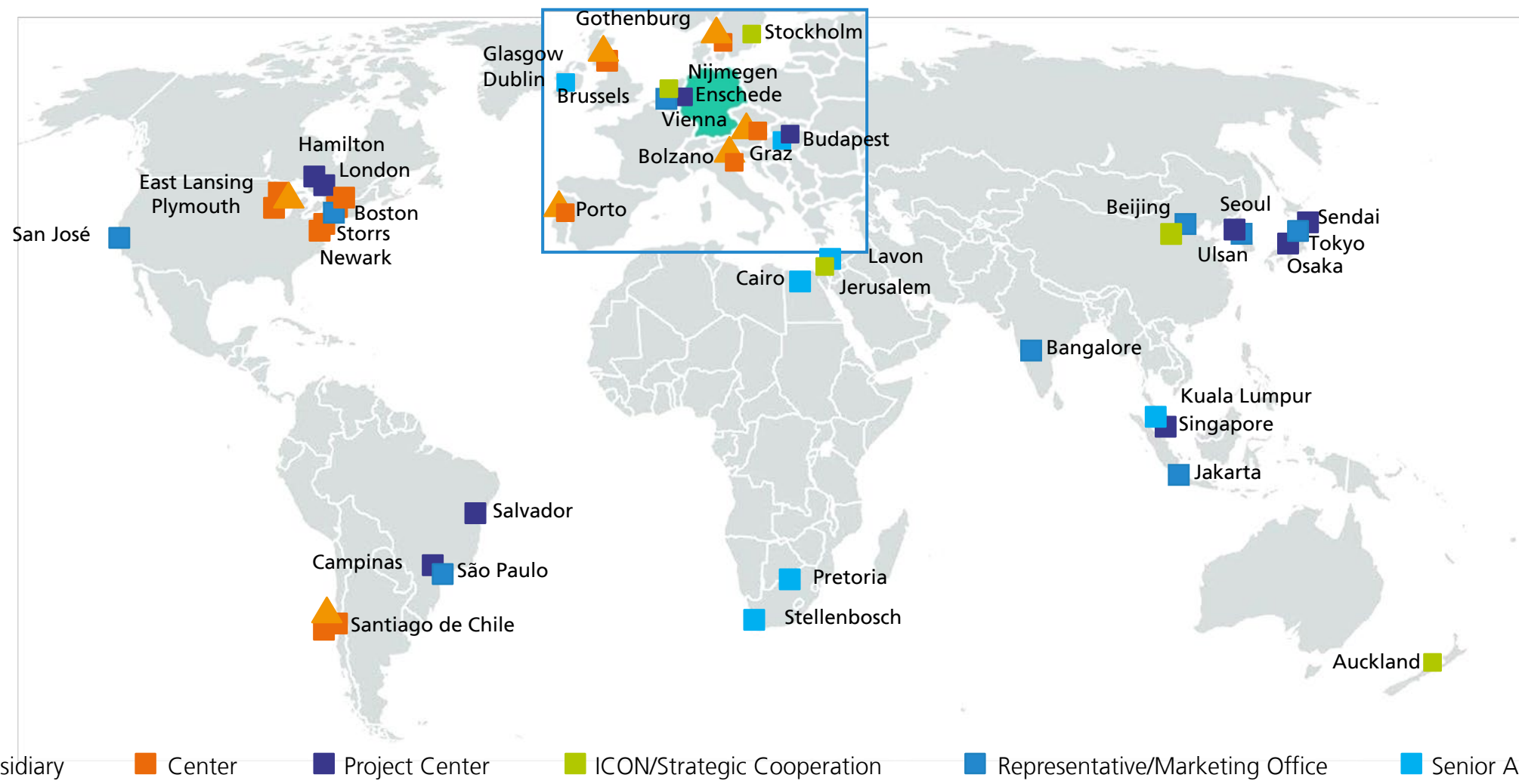
> 80 Research Units

~ 25,000 Employees

> € 2.3 billion R&D Budget
(€ 2 billion contract research)

Fraunhofer Portugal

Fraunhofer – Gesellschaft



Fraunhofer Portugal

Institutional Background

ASSOCIAÇÃO FRAUNHOFER PORTUGAL RESEARCH



**FOUNDING
ASSOCIATES**



**RESEARCH
CENTRES**

AICOS

AWAM

...

2008 | Non-Profit
Research Institution of
Public Common Interest

Fraunhofer Portugal

Fraunhofer Operational Model and Technology Transfer

BASE FUNDING

~1/3 Revenues

DIRECT INDUSTRY CONTRACTS

~1/3 Revenues



NATIONAL / INTERNATIONAL R&D PROGRAMMES

~1/3 Revenues

Fraunhofer AICOS

Vision and Mission

We create cutting-edge innovation based on end-user insights.

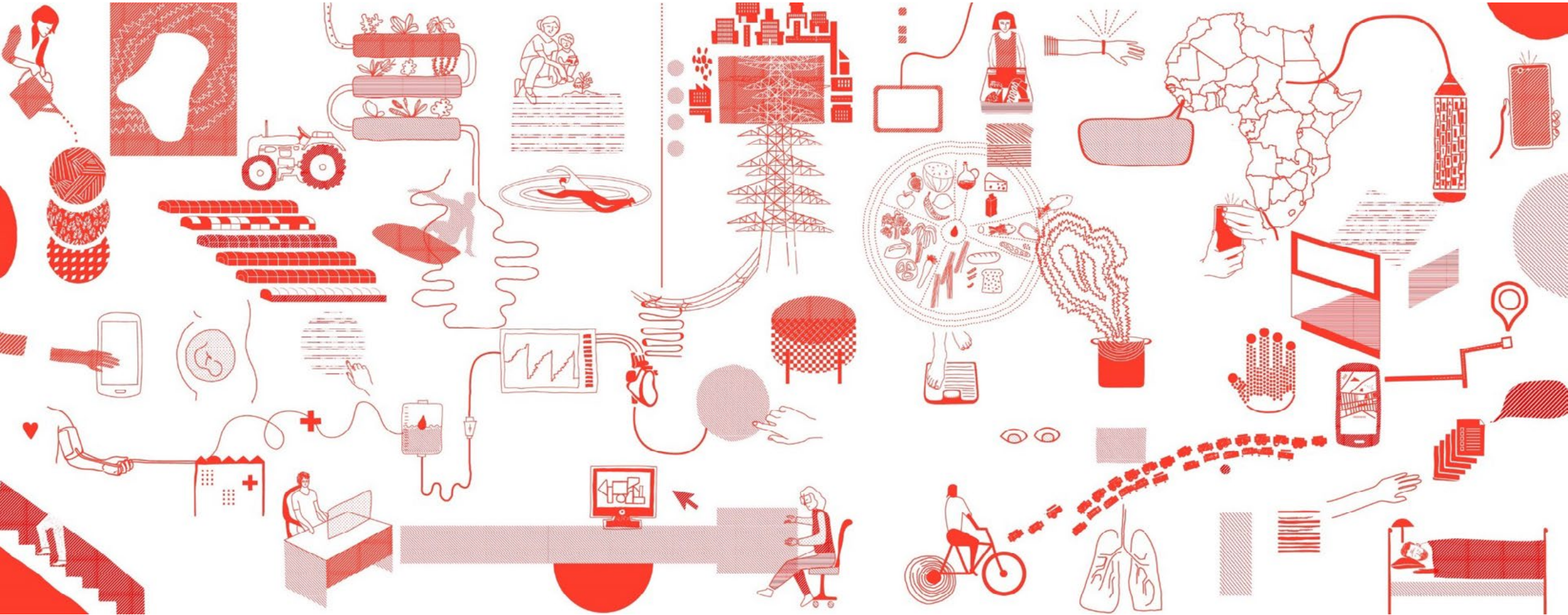
**PROPOSING FUTURES.
IMPACTING LIVES.**

**REMARKABLE TECHNOLOGY,
EASY TO USE**

As a leading partner for industry, we create applied research solutions capable of contributing to the market success of our clients' products and services by focusing on the value for their customers.

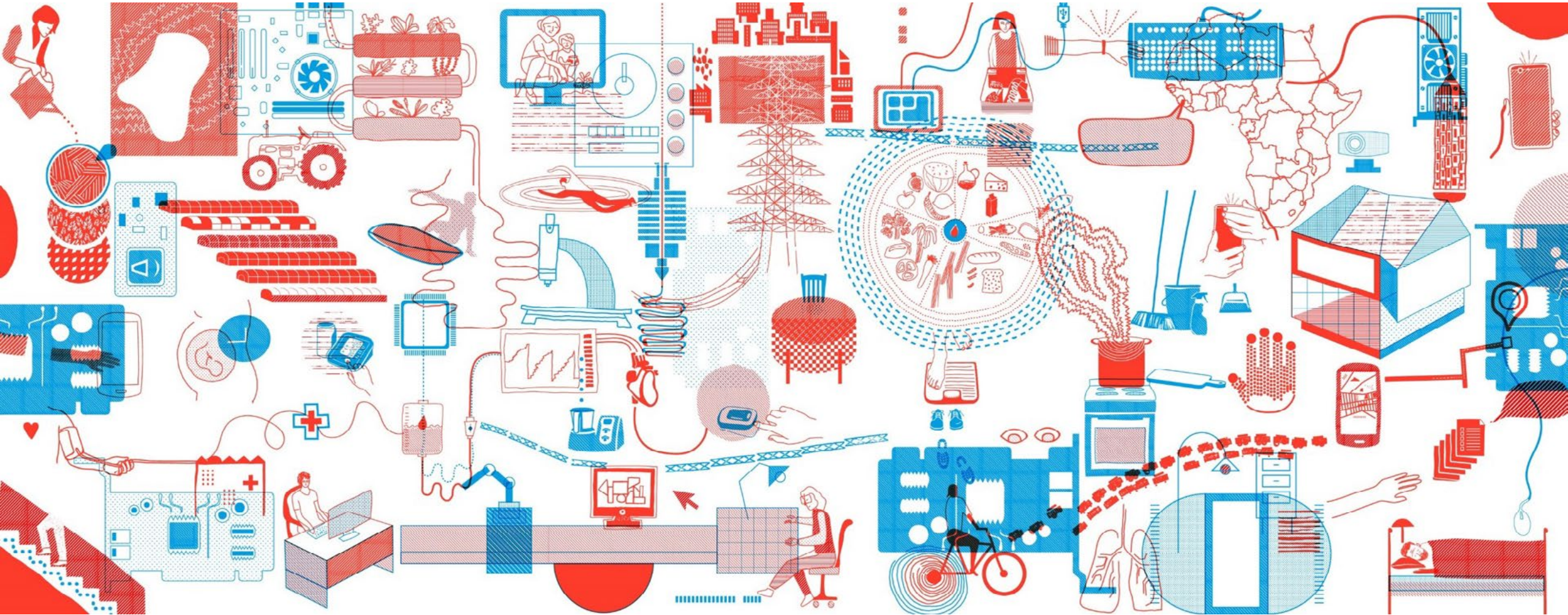
Fraunhofer AICOS

Our Approach – Combining three perspectives in every challenge: **People**



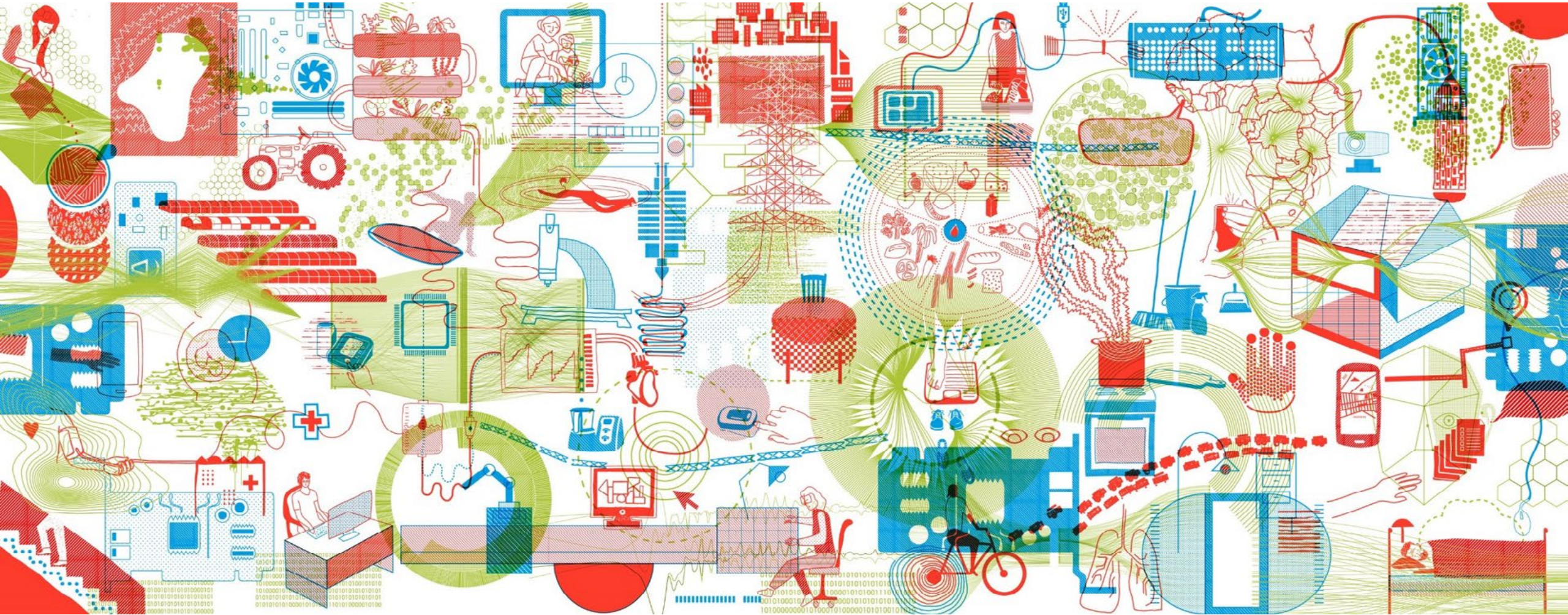
Fraunhofer AICOS

Our Approach – Combining three perspectives in every challenge: People, **Things**



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Our Approach – Combining three perspectives in every challenge: People, Things, **Intelligence**





ASSISTIVE INFORMATION AND COMMUNICATION SOLUTIONS

Understanding and supporting people in the fulfilment of their needs and aspirations

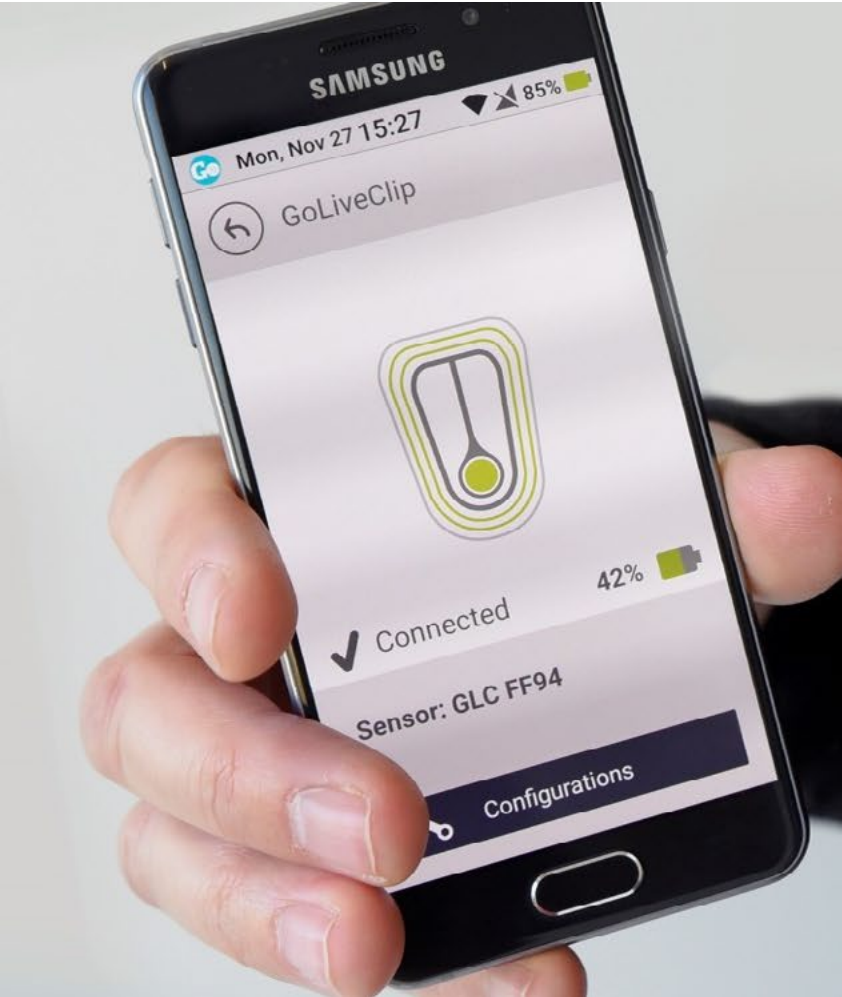


HUMAN-CENTRED DESIGN

- Understanding people in diverse settings
- Co-designing meaningful technologies
- Technology assessment in real life

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Purpose and Scientific Areas



ASSISTIVE INFORMATION AND COMMUNICATION SOLUTIONS

Relying on data and treating it intelligently to unveil hidden patterns and support decisions

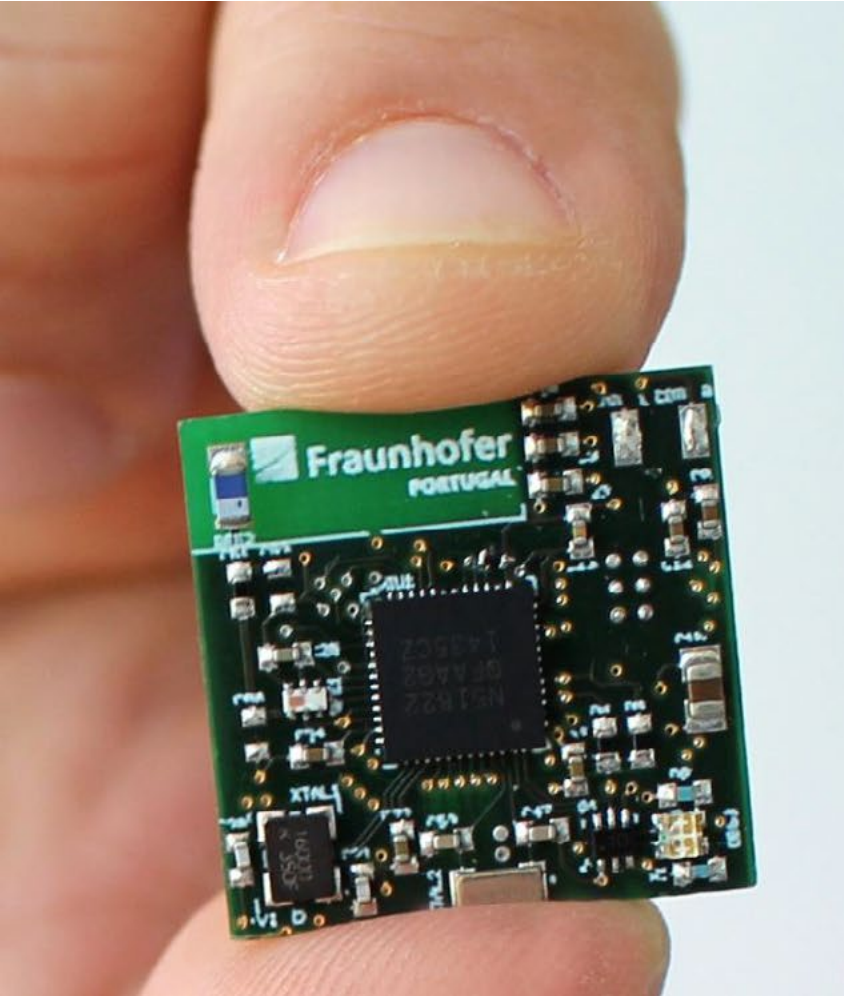


INTELLIGENT SYSTEMS

- Edge and Cloud Computer Vision
- Sensor Fusion & Embedded Intelligence
- Cognitive Systems & Deep Learning
- Predictive Modelling & Recommendation

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Purpose and Scientific Areas



ASSISTIVE INFORMATION AND COMMUNICATION SOLUTIONS

Enabling communication and supporting distributed systems through connected devices

CONNECTED THINGS

- Embedded Electronics
- Communication and Networks
- Edge and Cloud Computing
- Quality Assurance & Regulatory Pre-Compliance



ASSISTIVE INFORMATION AND COMMUNICATION SOLUTIONS

Applied research designed to
bring value to businesses and
society, connecting:

PEOPLE | INTELLIGENCE | THINGS



COGNITIVE CONNECTED SOLUTIONS

- Letting everything sense
- Prediction and recommendation
- Natural user experience

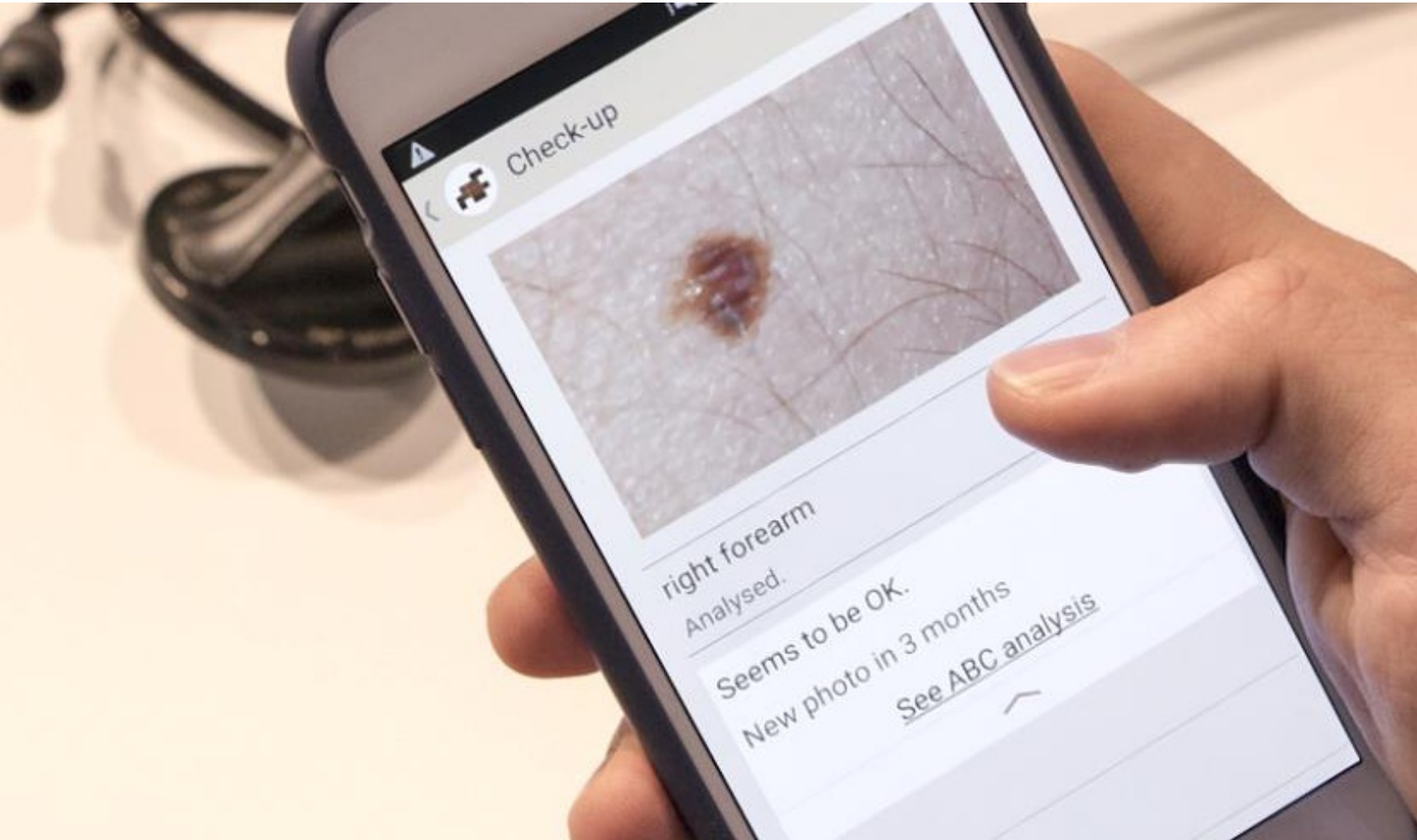




DIGITAL FARMING

- Decision support
- Mobile crowdsensing
- Efficient and self-managed networks





ACCOUNTABLE ARTIFICIAL INTELLIGENCE

- Explainability, transparency and bias
- Accountability and governance
- Fairness and inclusion through technology



DECENTRALISED HEALTH TECHNOLOGY

- Prevention
- Support to early intervention and diagnosis
- Self and informal care





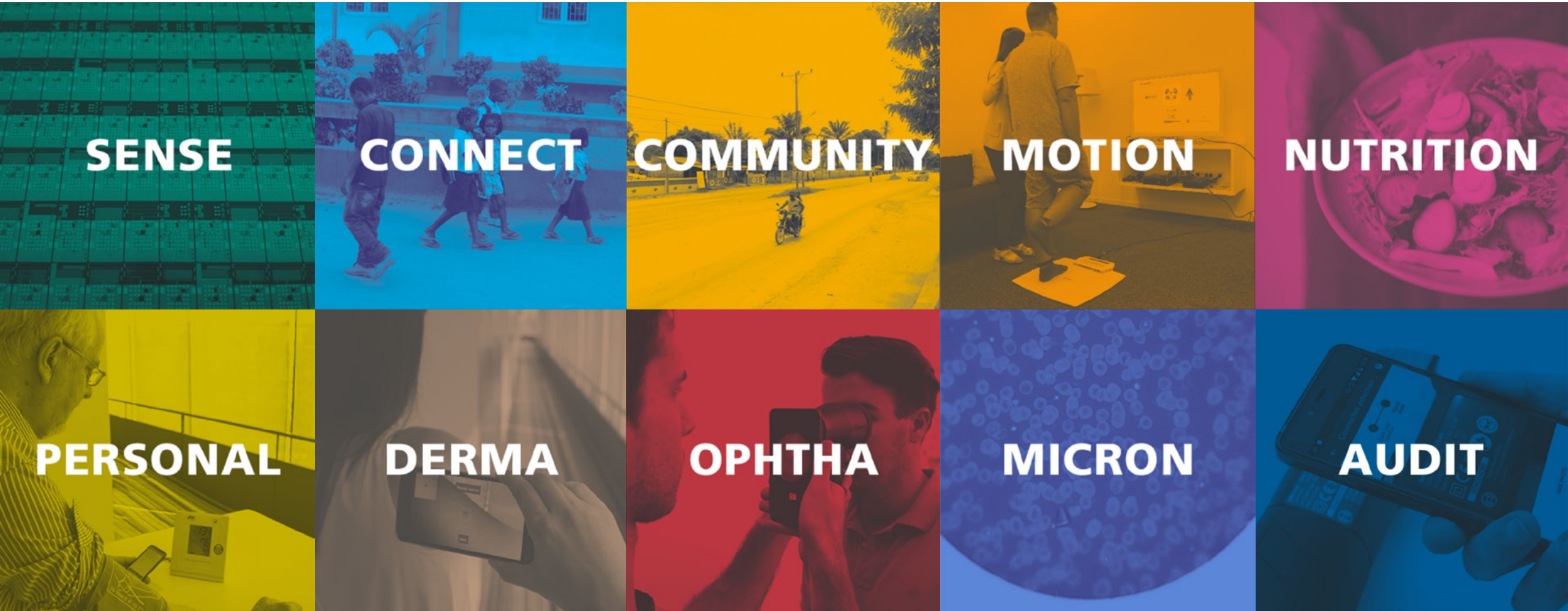
LIVING AND AGEING WITH DATA

- Personalised technology
- Socio-technical systems
- Technology design by non-technologists



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Portfolio



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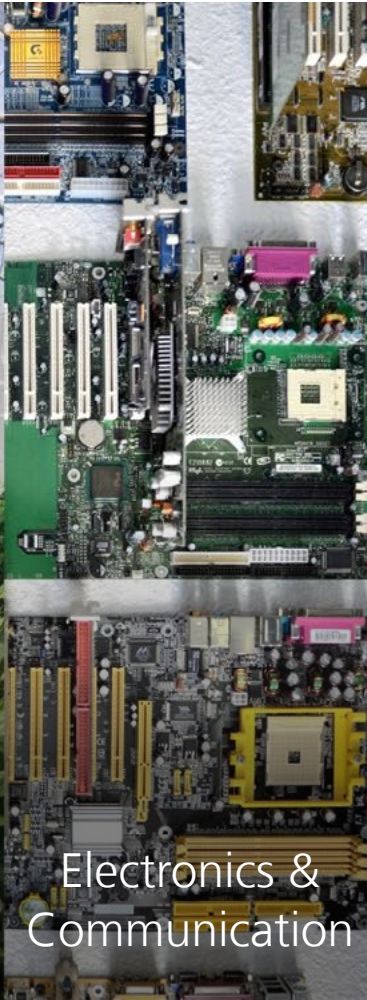
Customers & Industries



Healthcare



Wine &
Agrofood



Electronics &
Communication



Energy



Retail



eGovernment



Automotive



“

...I think you took a big step forward, especially for people of our age. I recommend it... and I've talked about it to many people!

António Vieira

Over **1,000** participants
66 projects supported
76 partner institutions
Over **2,800** research activities

Interviews, observations, focus groups, usability tests, ideation workshops, professional validation, human activity data collection, technology assessment...



“

I love going there. I'm always waiting to see when I'll be invited again!

Maria Carmen Carvalho

Fraunhofer AICOS

What can we do for you?

We support our partners in the early phases of innovation and technology strategy identification, and in the design and development of innovative solutions.

We offer technical knowledge at the highest levels of science and technology and wide-ranging expertise in the areas of Intelligence, Connectivity and Human-Centred Design.

Rapid Prototyping

- 3D Printing
- Applications
- Electronics
- Machine Learning
- Networks

Innovation Studies

- Custom-designed Studies
- State of Art
- Technology Assessment
- User Research

Education & Training

- Technical and Scientific Workshops
- Professional Training

Fraunhofer AICOS

What can we do for you?

R&D Consulting

We propose new solutions and ideas for evolving products and services;

Proofs of Concept

Initial implementation for proving that new ideas really work;

Prototype Implementation

Architectural specification; System implementation; System testing and validation;

Easy access to German Fraunhofer Institutes in other areas of competence;

8 Research Groups; More than 80 Research Units; 72 Institutes;

Member of National Scientific and Technology System

Eligible to participate in public incentive R&D programmes.



Fraunhofer AICOS

Key Figures

72

Industry Partners

80

Researchers &
Students

24

Achievements
Awards
(e.g. CES / Microsoft / Vodafone)
Honourable Mentions

199

Publications

+1,000

Research Participants

+130

Theses

Fraunhofer AICOS

Fraunhofer Portugal Challenge | 9th Edition

PROMOTE 'RESEARCH OF PRACTICAL UTILITY'

Among Portuguese university students and researchers

IDEA CONTEST FOR MSC AND PHD THESES

Already in its 9th edition, the Challenge is based on MSc and PhD theses from Portuguese Universities



SCIENTIFIC PRIZES FOR THE FOR THE BEST IDEAS

Winning participants are awarded monetary prizes and get media coverage of their work

PORTO – Headquarters

Address: **Rua Alfredo Allen 455/461**

4200-135 Porto | Portugal

Phone: **+351 220 430 300**

LISBOA – Branch Office

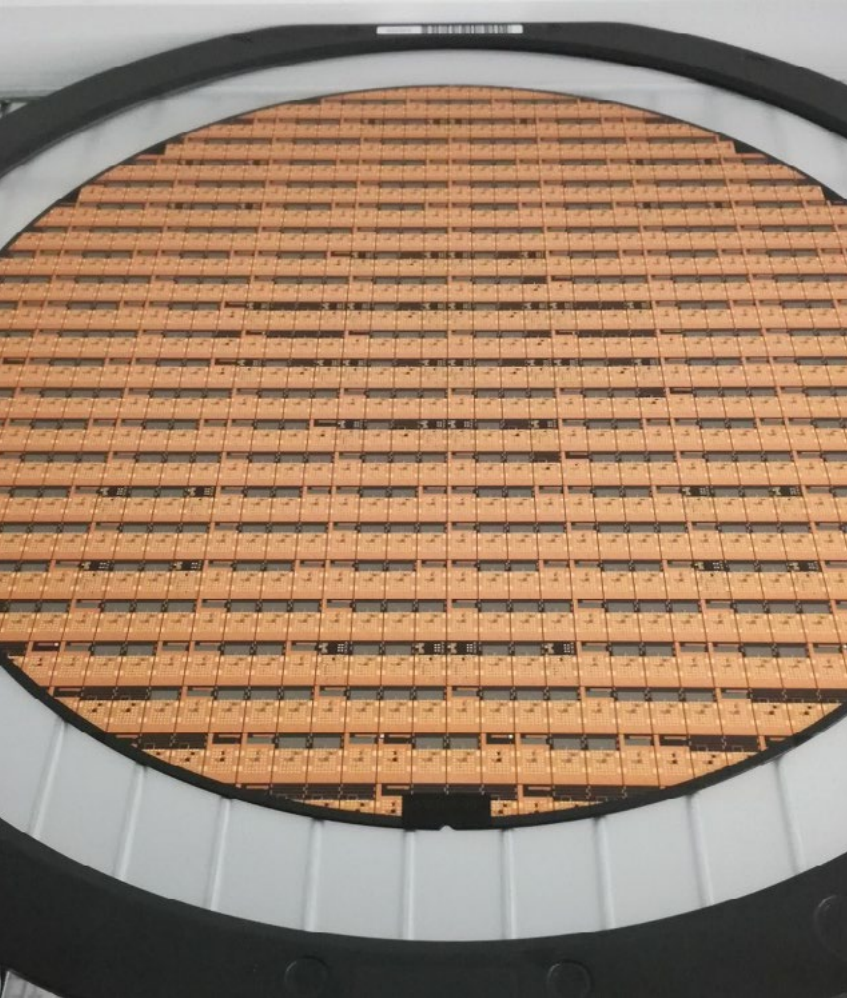
Address: **Avenida Prof. Gama Pinto 2**

1649-003 Lisbon | Portugal

Website: **www.fraunhofer.pt** | E-mail: **info@fraunhofer.pt** | Facebook: **facebook.com/fraunhoferportugal** | LinkedIn: **Fraunhofer Portugal**

Fraunhofer AICOS

Small, flexible, and modular cyber-physical systems



SENSE

Letting everything sense:
a small, easy deployable and
modular technology enabling
virtually any object to sense,
act and process data



Fraunhofer AICOS

Network infrastructures for the unconnected



CONNECT

Connect unconnected communities and things using low-cost network equipment and opportunistic communications



COMMUNITY

Developing inclusive tools focused on citizen empowerment, participatory monitoring, urban service delivery, and social equity



Fraunhofer AICOS

Understanding Human Movement



MOTION

Advanced inertial sensors data processing for recognizing human activities and characterizing movements



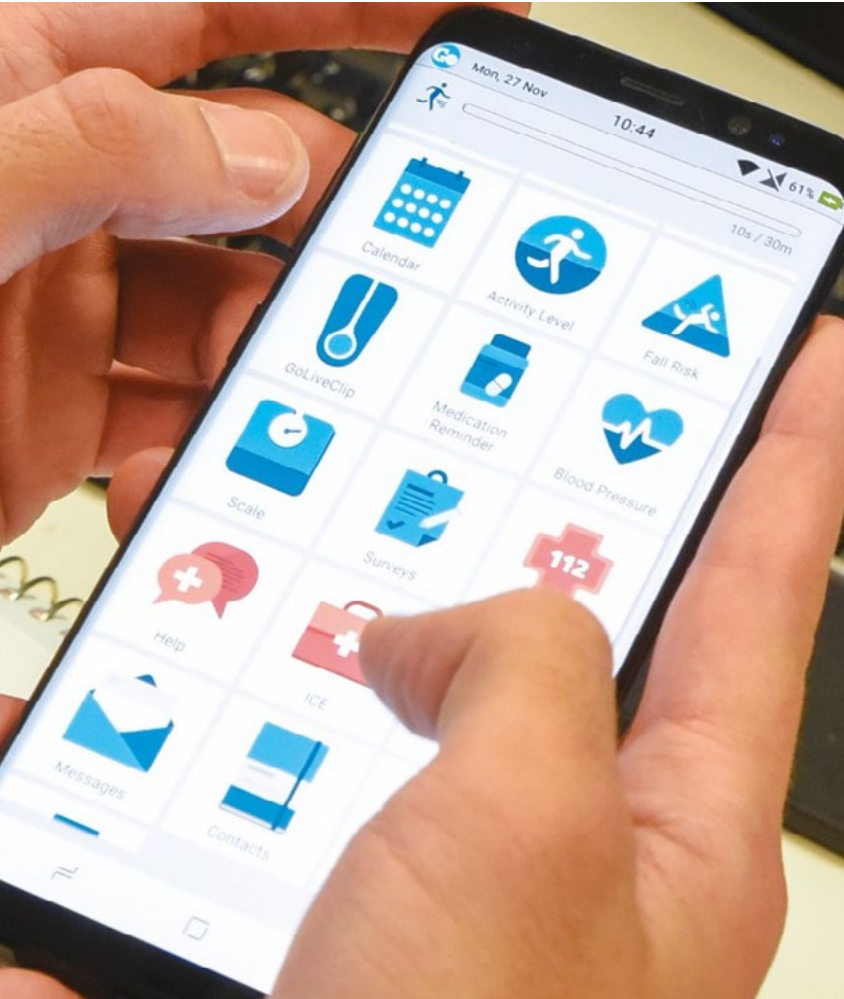
NUTRITION

Meal recommendations and shopping assistance balancing food preferences, nutrition and budget by combining information



Fraunhofer AICOS

Personalised technology for self-management of chronic disease and ageing



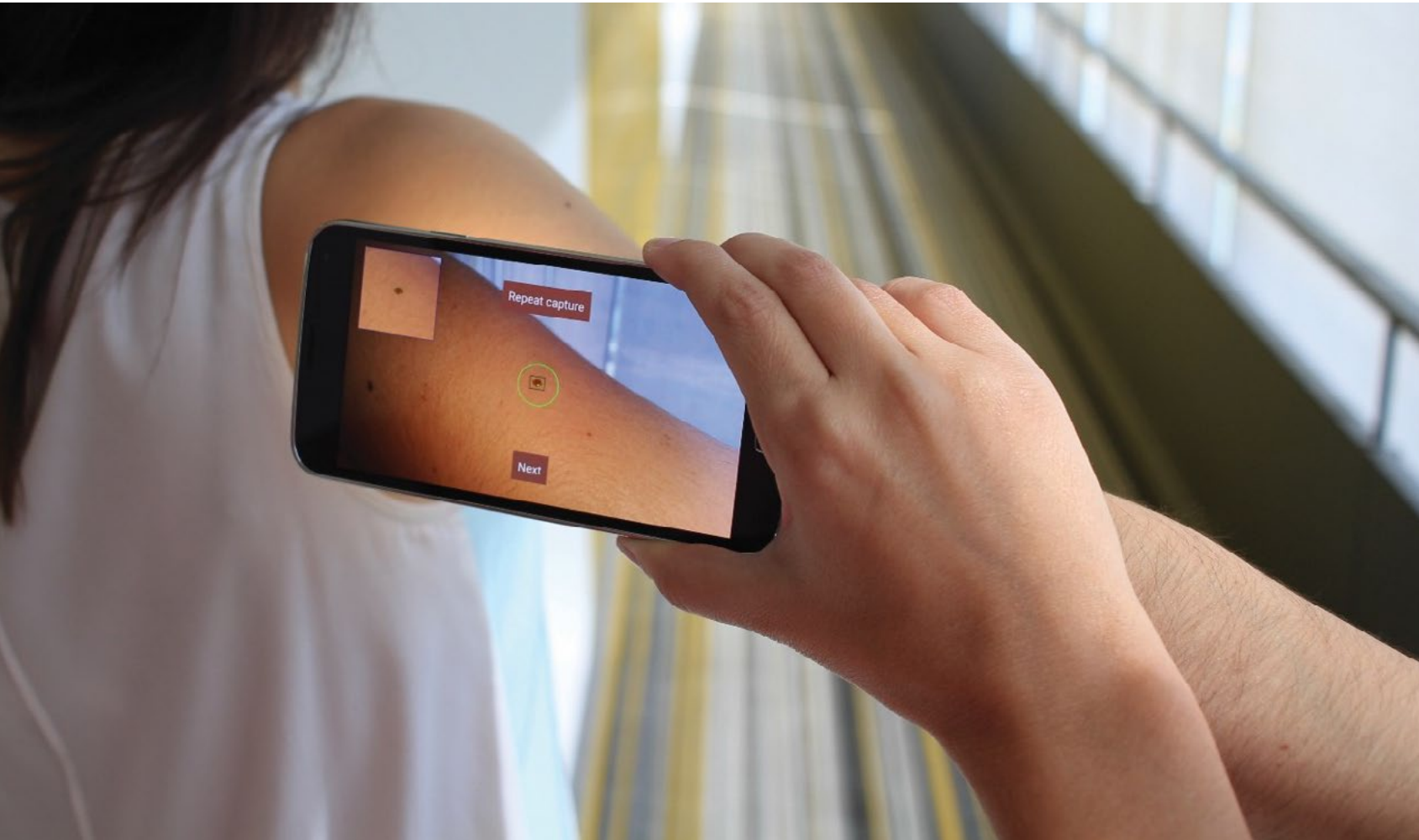
PERSONAL

Mobile devices connecting your customers to your services, backed by the science of how humans interact with technology



Fraunhofer AICOS

Decentralised screening in dermatology



DERMA

Mobile technology for healthcare professionals, validated as monitoring or referral solution for skin lesions

Fraunhofer AICOS

Decentralised screening in ophthalmology



OPHTHA

A smartphone-based handheld optical device that captures retinal images automatically, with intelligent guidance during acquisition. A Computer-Aided Diagnosis of eye diseases is available on-device, as part of the fundus camera

Fraunhofer AICOS

Affordable and automated mobile-based microscopy



MICRON

A affordable and automated alternative to conventional microscopes, tailored to effectively support microscopy-based diagnosis in areas with limited access to healthcare services



Fraunhofer AICOS

Automatic Visual Inspection and Validation



AUDIT

Computer Vision technology designed for high-level understanding of images or video frames, for quick, automated and recurrent auditing tasks, powered by Artificial Intelligence and Business Logic

