Multi-modal, multi-scale retinal imaging

Fact Sheet

Project Information

MERLIN
Grant agreement ID: 780989

Funded under
INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies - Information and Communication Technologies (ICT)

DOI
10.3030/780989

Total cost
€ 5 678 335

EU contribution
€ 4 867 660

Closed project

Start date
1 December 2017

End date
31 August 2021

Coordinated by
IMAGINE EYES SA
France

Objective

The ambition of the MERLIN project is to improve in-depth diagnosis and therapeutic follow-up of diseases that impact the eye’s retina. To do so, the MERLIN partners will deliver a novel medical imaging device able to detect pathological alterations in the retina with highly enhanced sensitivity and specificity.

The medical applications of this device encompass a wide range of retinal pathologies, including age-related macular degeneration (AMD), as well as chronic vascular conditions, including diabetes. AMD and diabetic retinopathy (DR) are the leading cause of blindness worldwide in people over 55 years of age. Such diseases slowly develop at the microscopic scale in the retina. Using current imaging techniques, it is difficult to detect them at early stage, and it often takes months to assess the effects of treatments. These limitations hinders both the clinical
management of patients and the investigation of new therapies.
In order to overcome these issues, the device developed in MERLIN will for the first time enable doctors to examine the retina with multiple imaging modalities at both the macroscopic and microscopic scales. Modalities will include ultrafast scanning laser ophthalmoscopy (SLO), optical coherence tomography (OCT) and OCT angiography (OCT-A), while ultrahigh resolution will be provided by adaptive optics technology. This unique combination will reveal previously invisible cellular and microvascular retinal detail in 3 dimensions. The project partners will also develop advanced image processing software for the visualization and quantitative analysis of microscopic structures, and conduct experimentations to optimize and validate performance in AMD and DR patients.
As the feasibility of this diagnostic approach has previously been demonstrated in another European R&D project (FP7 FAMOS, 2012-2017), MERLIN will translate the technology from a preexisting laboratory prototype to a nearly commercial device usable in clinical trials.

**Fields of science**

natural sciences › chemical sciences › analytical chemistry › **quantitative analysis**
medical and health sciences › clinical medicine › endocrinology › **diabetes**
medical and health sciences › basic medicine › **pathology**
medical and health sciences › clinical medicine › ophthalmology › **retinopathy**
social sciences › economics and business › economics › **sustainable economy**

**Programme(s)**

H2020-EU.2.1.1. - INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies - Information and Communication Technologies (ICT)  

**Topic(s)**

ICT-30-2017 - Photonics KET 2017

**Call for proposal**

H2020-ICT-2016-2017

See other projects for this call

**Sub call**
H2020-ICT-2017-1

Funding Scheme

IA - Innovation action

Coordinator

IMAGINE EYES SA
Net EU contribution
€ 1 891 575,00

Address
Rue Charles De Gaulle 18
91400 Orsay
France

Region
Ile-de-France > Ile-de-France > Essonne

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Contact the organisation
Website
Participation in EU R&I programmes
H2020 collaboration network

Non-EU contribution
€ 810 675,00

Participants (6)

MEDIZINISCHE UNIVERSITAET WIEN
Austria
Net EU contribution
€ 588 025,00

Address
Spitalgasse 23
1090 Wien

Region
Activity type
Higher or Secondary Education Establishments

Contact the organisation Website Participation in EU R&I programmes H2020 collaboration network

Non-EU contribution
€ 0,00

FUNDACIO INSTITUT DE CIENCIAS FOTONIQUES
Spain
Net EU contribution
€ 522 500,00

Address
Avinguda Carl Friedrich Gauss 3
08860 Castelldefels

Region
Este > Cataluña > Barcelona

Activity type
Research Organisations

Contact the organisation Website Participation in EU R&I programmes H2020 collaboration network

Non-EU contribution
€ 0,00

ERASMUS UNIVERSITAIR MEDISCH CENTRUM ROTTERDAM
Netherlands
Net EU contribution
€ 1 072 825,00

Address
Dr Molewaterplein 40
3015 GD Rotterdam

Region
West-Nederland > Zuid-Holland > Groot-Rijnmond

Activity type

Higher or Secondary Education Establishments

Contact the organisation [Website]
Participation in EU R&I programmes [Website]
H2020 collaboration network [Website]

Non-EU contribution

€ 0,00

REGION HOVEDSTADEN

Denmark

Net EU contribution

€ 361 735,00

Address

Kongens Vænge 2
3400 Hillerød

Region

Danmark > Hovedstaden > Nordsjælland

Activity type

Public bodies (excluding Research Organisations and Secondary or Higher Education Establishments)

Contact the organisation [Website]
Participation in EU R&I programmes [Website]
H2020 collaboration network [Website]

Non-EU contribution

€ 0,00

INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE

France

Net EU contribution

€ 431 000,00

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THIRD-PARTY

CENTRE HOSPITALIER NATIONAL D'OPHTALMOLOGIE DES QUINZE-VINGTS

France

Net EU contribution

€ 0,00

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