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Glaucoma – Advanced, LAbel-free High resolution Automated OCT Diagnostics

GALAHAD

Deliverable D9.1

Project start press release

Technical Coordinator: Andrew Robertson
 Organisation: Gooch and Housego (Torquay)
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Leader in charge of deliverable: Bruce Napier
Vivid Components

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<i>Dissemination level</i>		
PU	Public	X
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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Change register

Version	Date	Author	Organisation	Changes
A_DRAFT	05-May-2017	Bruce Napier	Vivid Components	Initial
A	05-May-2017	Bruce Napier	Vivid Components	Added reviewer: no changes requested

Reviewed by:
Adrian Change

Gooch and Housego

A_DRAFT

05-May-2017

1. Statement of independence

The work described in this document is genuinely a result of efforts pertaining to the GALAHAD project: any external source is properly referenced.

Confirmation by Authors: Bruce Napier

Vivid Components

2. Executive summary

The following press release, prepared by G&H, was issued on the G&H website on 09-Dec-2017.
<https://goochandhousego.com/next-generation-oct-systems-glaucoma-diagnosis/>

It was picked up by a number of trade press and magazines, e.g.:

optics.org

<http://optics.org/news/7/12/13>

'Galahad' project to develop OCT for glaucoma diagnosis

BioOptics World

<http://www.bioopticsworld.com/articles/2016/12/european-project-to-develop-next-gen-oct-systems-for-glaucoma-diagnosis.html>

European project to develop next-gen OCT systems for glaucoma diagnosis

3. Press release

Next Generation OCT Systems for Glaucoma Diagnosis

UK-based Gooch & Housego has announced the start of work on the GALAHAD (Glaucoma – Advanced, Label-free High Resolution Automated OCT Diagnosis) project. The project, inaugurated in December and funded as part of the EU Horizon 2020 program, will develop and apply research into high resolution OCT for glaucoma diagnosis.



Ocular damage caused by glaucoma Image courtesy: Community Eye Health via Visualhunt.com / CC BY-NC

The project GALAHAD targets the critical need for better glaucoma diagnostic systems. Glaucoma is an age-related major cause of blindness. The eye disease is characterized by an irreversible damage to the optic nerve head caused by increased intra-ocular pressure. The current screening and basic diagnostics for the disease involve intra-ocular pressure measurement, visual field tests and detection of structural damage to the optic nerve head and retinal nerve fibre layer. Currently, methods have high rates of false positive or false negative results. This is due to the impossibility of in depth analysis of optical nerve head damage given the poor resolution of today's optical technologies.

A leading candidate for developing diagnostic techniques is [optical coherence tomography \(OCT\)](#). The challenge however is the required axial resolution is $\sim 1 \mu\text{m}$. Such a resolution is well beyond the 3-5 μm resolution of today's commercial systems. The GALAHAD project aims to develop a label free, compact and easy to operate high resolution diagnostic OCT system. The multiband and multimodal system will use submicron ultra-high resolution polarisation sensitive OCT (UHR PS OCT). The key breakthrough elements are:

- A revolutionary low cost multiband supercontinuum light source.
- Ground-breaking ultra-broadband photonic components required to exploit such a source.
- Automated glaucoma screening algorithms: using end user evaluation of cell and animal models and tissue samples, automated algorithms will be developed, trained and tested so that non-expert operators will be able to perform glaucoma screening.

The in depth glaucoma diagnostics after a positive screening that GALAHAD will provide should contrast with conventional methods. It is expected that false positive and false negative screening results will dramatically reduce, decreasing the number of patients suffering from glaucoma-related disability. The project is driven by world leading companies and manufacturers of OCT systems and guided by requirement specifications and validated by high ranking clinical and experimental ophthalmologists in their clinical settings. G&H's standing as pioneers in the development of both SLED and swept source OCT systems makes us an ideal partner for this project.

GALAHAD project partners are:

1. Gooch & Housego (Torquay) Limited United Kingdom
2. Optos plc United Kingdom
3. NKT PHOTONICS A/S Denmark
4. IBSEN PHOTONICS AS Denmark
5. VIVID COMPONENTS LTD United Kingdom
6. DANMARKS TEKNISKE UNIVERSITET Denmark
7. UNIVERSITAT POLITECNICA DE VALENCIA Spain
8. GLOUCESTERSHIRE HOSPITALS NHS FOUNDATION TRUST United Kingdom
9. WESTFAELISCHE WILHELMS-UNIVERSITAET MUENSTER Germany
10. REGION HOVEDSTADEN Denmark

For more information on OCT systems and components and its application, [email us at info@goochandhousego.com](mailto:info@goochandhousego.com).

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