

Astonish. Advancing Smart Optical Imaging and Sensing for Health

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Tecnología: Inteligencia Artificial

Descripción general:

The ASTONISH research program aims to develop innovative sensing and integrated read-out architectures for a new generation of medical diagnostic systems based on visible light, NIR sensing and hyperspectral imaging.

The overall idea for the ASTONISH project is to make things visible that cannot be made visible with existing systems or existing imaging modalities. For this, the project will focus on innovative optical filters, highly sensitive NIR sensors, automated multimodal and hyperspectral image analysis and advanced visualizations. The underlying concept for the project is captured in its acronym: Smart Optical Imaging and Sensing for Health. By optimally exploiting the spectral imaging properties of visible light and beyond, extra information is captured and combined in a smart way to deliver solutions that are less obtrusive, smaller, lower cost, more reliable and easier to use than state of the art systems.

It is clear that optical imaging is an emerging technology with great potential for improving disease prevention, diagnosis and treatment in the medical office, at the bedside or in the operating room. The project will address the following two technology tracks:

- Track 1: Unobtrusive health monitoring : The ASTONISH project combines electronic expertise, both at device and system level, and biomedical driven R&D activities dealing with functional imaging and diagnostic platforms for the central nervous system. ASTONISH will progress state-of-the-art by defining innovative combo PPG + ECG and Continuous Wave (CW)-NIR + EEG systems.

- Track 2: Minimally invasive diagnosis and treatment: The project will address the clinical drive for earlier detection of disease and minimally invasive treatment. A major effort towards this goal is the translation of emerging optical diagnostic imaging techniques into minimally invasive surgery and cancer screening.

Programa: H2020-ECSEL (692470)

Duración: 36 meses (2016 – 2019)

Presupuesto global proyecto: 18.334.603,75 €

Presupuesto Grupo Ayesa: 9 620.125,00 €