

OmmatiDiag - A mosaiced detector for the GlobalDiagnostiX radiology project

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Approximately 4 billion people, about two-thirds of the world population do not have access to diagnostic imaging. First world countries try to solve this problem by donating old radiological equipment to hospitals in need. But, according to the WHO, about 70% of the more complex devices do not function when they reach their destination in developing countries [1].

As part of the GlobalDiagnostiX alliance, we are challenging existing systems for generating and detecting x-rays for the medical domain. A mosaiced setup of independent detector modules (each containing optics and a CMOS detector, thus an independent eye, much like the *Ommatidias* in insect eyes) images a scintillator converting the incoming x-rays to visible light. Image merging and processing will result in a standard-compliant *Diagnostic* image.

The performant, modular, cost-efficient and standard-compliant x-ray imaging device based on frugal engineering approaches is an integral part of the GlobalDiagnostiX radiology device. The combined effort of the alliance will culminate in an appropriate diagnostic x-ray imaging system, which is adapted to the context of resource-poor settings and can be sold to district hospitals in developing countries for an affordable price.

[1] First WHO Global Forum on Medical Devices: context, outcomes, and future actions. http://www.who.int/medical_devices/gfmd_repor

Primary author: Dr HABERTHÜR, David (TOMCAT, Swiss Light Source, Paul Scherrer Institut)

Co-authors: Dr HENRICH, Beat (Paul Scherrer Institut); Prof. STAMPANONI, Marco (Paul Scherrer Institut)

Presenter: Dr HABERTHÜR, David (TOMCAT, Swiss Light Source, Paul Scherrer Institut)

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