



MAKING KNOWLEDGE WORK

## **STREP Proposal: Wireless Mosaic Eyes**

While intelligent robot research is primarily focused on development of a large and smart “brain” to gain autonomous abilities, such approach is facing a bottleneck due to the dynamic and unpredictable changes in the environment. Yet as a matter of fact, most applications of autonomous robots involve a deterministic environment such as homes, hospital, Brussels city, and those for ambient assisted living environments etc. To this end, we propose a mosaic eye approach consisting of wireless sensors to shift the massive intelligence from the centralised “brain” or systems to their environment, and deliver a demonstrable mosaic eye system for ambient assisted living for the ageing society.

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## Objectives

- To develop an new vision system with distributed wireless mosaic eyes to provide comprehensive, intelligent and autonomous navigation for ambient assisted living for the ageing society;
- To develop wireless mosaic eyes via low resolution CMOS visual sensors to achieve organization of an artificial nerve system and construct an intelligent environment rather than intelligent computerised brain;
- To develop video processing algorithms to extract sensor semantics to control the local environment associated with each individual eye within the overall system and provide navigational and controlling information for the robot;
- To construct a pilot demonstrator with a scenario of a wheelchair/robot moving inside a building autonomously.

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## Call for Partners

- User partners directly linking to the ageing society or applications of ambient assisted living technologies;
- Industrial companies specialising domestic robots or other relevant technologies.

Many thanks for your time. If interested, please contact Professor J. Jiang, [j.jiang1@bradford.ac.uk](mailto:j.jiang1@bradford.ac.uk)