Project Title: ImageSense: an autonomous intelligent camera platform for environmental and marine monitoring

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Project Summary: Existing deployments for monitoring water quality are typically based around in-situ sensor units that are placed in rivers or marine locations that can sample and analyse automatically, sending their findings back to a central server over an internet connection. Within the ImageSense project, we would like to be able to locate a CCTV-like camera along-side such sensing sensing units at a given monitoring site for a variety of reasons. For example, the video data could then constitute a visual record of a pollution event signaled by the in-situ sensors. Alternatively, image processing of the scene could be used to recognise unusual events (increase in water levels, foreign matter on the water surface, etc) and act as an additional source of information. Thus, the ImageSense project is building a self-powered internet-enabled intelligent camera that can be placed out in the environment. We are in the process of designing the architecture of the prototype image capture platform, putting in place the software middleware & application layer and developing an image processing approach for abnormal event detection. The goal of this internship project is to work alongside the PhD student developing the platform, with a view to having a prototype unit to deploy by the end of the Summer. It would suit an engineering/computing student with an interest in both hardware and software who is comfortable putting together prototype systems. Interest in image processing or computer vision would also be useful.