

Community of PTZ Sensors (CoPS)

A community of autonomous pan-tilt and zoom (PTZ) sensors is a flexible and increasingly cheap alternative to traditional fixed-camera CCTV installations for monitoring of public spaces. However designing scalable collaborative networks of PTZ cameras represents a significant challenge. A PTZ camera can adopt a variety of roles such as following targets, high-resolution zooming, or mimicking fixed view cameras. This project aims to develop the collaborative architecture, visual-ocular reflexes and cross-sensor competencies that will allow such a community to monitor wide-area scenes. Key issues that require addressing include:

To identify the wide-area monitoring tasks a collaborative community of PTZ cameras should provide including collecting mug-shots of individuals entering the scene, maintaining an awareness of the location of individuals, or tracking specific individuals over a wide area.

To develop the sensor-specific visual-ocular reflexes which directly link incoming video to the PTZ telemetry. These reflexes will include smooth pursuit of targets, attention to visual cues such as newly detected objects, saccade-planning, etc.

To develop the cross-sensor competencies underpinning the integration of these sensor activities such as the computation of optimal view-points; trajectory matching; and “easy to use” calibrations procedure to allow a community of PTZ sensor to share a common coordinate system.

Director of Studies: Professor Graeme Jones