3.29 Multi-camera Detection and Tracking

**Keywords**

Multi-camera; pedestrian detection; surveillance; behavior analysis

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**Corporate Sponsorship Program**

See Section 4 of the present document

**File reference & version number:**

Software disclosure 7632

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**Functional description**

This technology allows the detection of pedestrians or vehicles from multiple synchronized video streams taken from calibrated cameras looking at a common area of interest. It can either perform the detection in real-time in separate frames, or process a batch of frames to exploit temporal consistency to increase the accuracy.

**Innovative aspects**

– Robust system with a limited number of parameters  
– Can handle very a degraded signal  
– Consistent estimates in case of occlusion  
– Meaningful probabilistic prediction

**Commercial application examples**

– Video-surveillance  
– Behavioral analysis  
– Crowd counting

**More information**


**Software & IPR status**

– An implementation of the tracker (“Multi-Tracked Paths”) is available under the GPL3 license: http://www.idiap.ch/scientific-research/resources/mtp  
– The algorithms were developed in collaboration with the CVLab at EPFL and are covered by two (EPFL) patents:
  
  • International patent WO2013072401 on “Tracklet-based Multi-Commodity Network Flow for Tracking Multiple People”.  
  • US patent US20130177200 on “A method and apparatus for multiple object tracking with k-shortest paths”.