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Abstract

MONNET is a visual surveillance system for tracking pedestrians over extended premises. The MONNET system is composed of intelligent nodes, which exchange information on the individually tracked pedestrians in an asynchronous manner. Each node in MONNET builds an appearance model for every observed pedestrian and compares it with models received from other nodes. The compact appearance models based on colour cues and face biometrics are stored locally on each node. The system is dynamically reconfigurable since its design allows for adding/removing nodes in a simple manner, comparable to the ‘plug and play’ technology. MONNET also contains an optional ‘observer’ node for interactive data visualization. This node displays a user interface which allows a human operator to observe and to interact in real-time with the distributed tracking process. MONNET was extensively tested with and without user input, and it is able to function correctly in both modes.