Adhoc deployment of environmental monitoring networks

Includes robust and efficient image encoding scheme adapted to low-resource wireless sensor nodes and lossy radio channel. Adjustable Quality Factor to meet network conditions.

Intrusion detection applications

Simple and efficient intrusion detection mechanism based on simple-differencing

No additional cost for image processing: image data are read from camera and compared on-the-fly to reference image

Image capture frequency can be dynamically configured or can follow a criticality-based scheduling mechanism to provide maximum responsiveness

Images can be stored and timestamped on gateway, and synched in real-time with a smartphone through cloud apps such as DropBox

Contact: Prof. Congduc Pham - url: http://www.univ-pau.fr/~cpham

Image sensor performance measures, 128x128 gray scale

Comparison of RCV time & 1-hop latency

Traditional JPG compression can hardly support more than 20% packet losses

Scientific cooperation with V. Lecuire from CRAN laboratory for the optimized image encoding algorithm

Images can be stored and timestamped on gateway, and synched in real-time with a smartphone through cloud apps such as DropBox

Simple and efficient intrusion detection mechanism based on simple-differencing

No additional cost for image processing: image data are read from camera and compared on-the-fly to reference image

Image capture frequency can be dynamically configured or can follow a criticality-based scheduling mechanism to provide maximum responsiveness

Images can be stored and timestamped on gateway, and synched in real-time with a smartphone through cloud apps such as DropBox

Contact: Prof. Congduc Pham - url: http://www.univ-pau.fr/~cpham

Image sensor built off-the-shelves components: Arduino Due & uCamII

Includes robust and efficient image encoding scheme adapted to low-resource wireless sensor nodes and lossy radio channel. Adjustable Quality Factor to meet network conditions.

Intrusion detection applications

Simple and efficient intrusion detection mechanism based on simple-differencing

No additional cost for image processing: image data are read from camera and compared on-the-fly to reference image

Image capture frequency can be dynamically configured or can follow a criticality-based scheduling mechanism to provide maximum responsiveness

Images can be stored and timestamped on gateway, and synched in real-time with a smartphone through cloud apps such as DropBox

Contact: Prof. Congduc Pham - url: http://www.univ-pau.fr/~cpham

Image sensor performance measures, 128x128 gray scale

Comparison of RCV time & 1-hop latency

Traditional JPG compression can hardly support more than 20% packet losses

Scientific cooperation with V. Lecuire from CRAN laboratory for the optimized image encoding algorithm

Images can be stored and timestamped on gateway, and synched in real-time with a smartphone through cloud apps such as DropBox

Simple and efficient intrusion detection mechanism based on simple-differencing

No additional cost for image processing: image data are read from camera and compared on-the-fly to reference image

Image capture frequency can be dynamically configured or can follow a criticality-based scheduling mechanism to provide maximum responsiveness

Images can be stored and timestamped on gateway, and synched in real-time with a smartphone through cloud apps such as DropBox

Contact: Prof. Congduc Pham - url: http://www.univ-pau.fr/~cpham