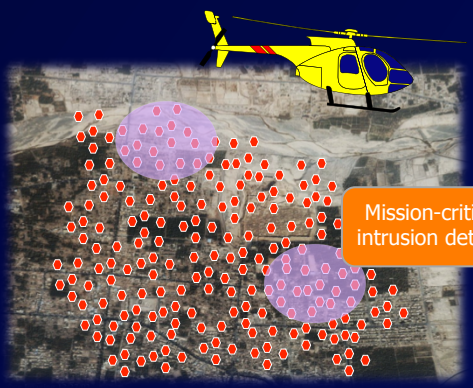
BUILDING MULTI-CAMERA SYSTEM FOR VISUAL SURVEILLANCE APPLICATIONS



Mission-critical application such as intrusion detection or search&rescue

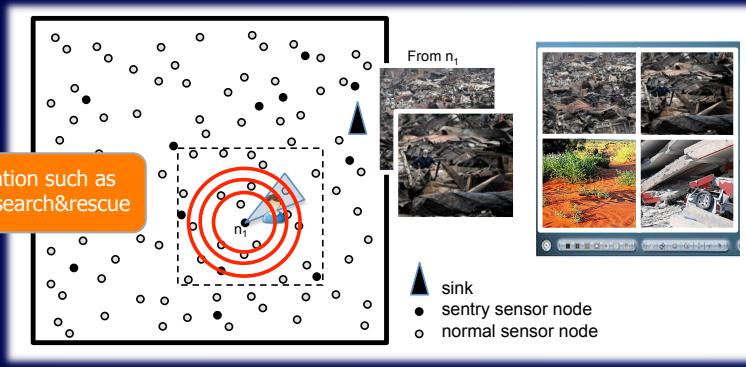
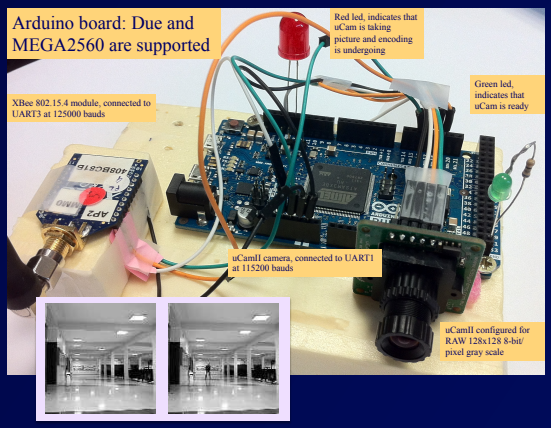


Image sensor built with off-the-shelves components: Arduino Due/MEGA & uCamII



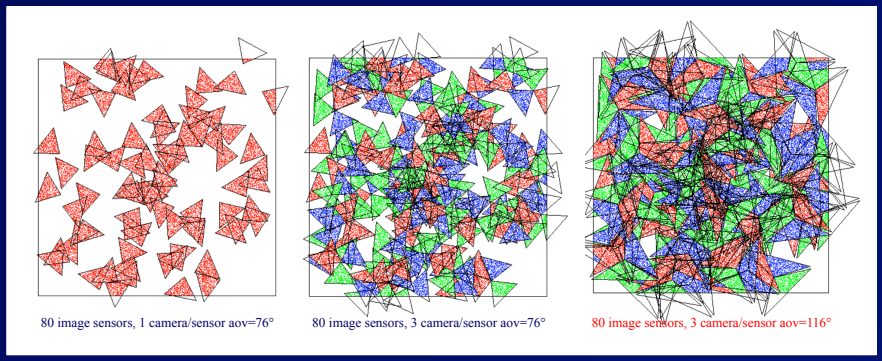
Performance measures for an 128x128 image

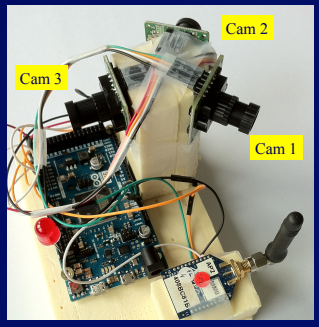
		N	R	A	B = D - A`	C = B / N	D
Quality Factor Q	size in bytes (MSS=90)	Number of packets	time to read data from ucam	global encode + pkt time (measured)	global transmit time (computed)	transmit time/pkt (computed)	global encode + pkt + transmit time (measured)
100	9768	158	1.512	1.027	1.064	0.0067	2.091
90	5125	70	1.512	0.782	0.539	0.0077	1.321
80	3729	48	1.512	0.704	0.384	0.0080	1.088
70	2957	37	1.512	0.686	0.304	0.0082	0.99
60	2552	32	1.512	0.662	0.263	0.0082	0.925
50	2265	28	1.512	0.646	0.233	0.0083	0.879
40	2024	25	1.512	0.657	0.207	0.0083	0.864
30	1735	21	1.512	0.649	0.177	0.0084	0.826
20	1366	17	1.512	0.638	0.14	0.0082	0.778
10	911	11	1.512	0.628	0.093	0.0085	0.721
5	576	7	1.512	0.624	0.058	0.0083	0.682

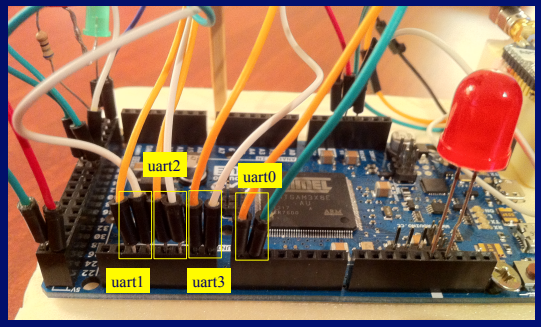
Multi-camera system for better coverage at very low cost

- Arduino MEGA or Due have 4 UART ports: 3 UARTs can be used to connect 3 uCamII cameras
- 76° and 116° lenses can also be mounted on the uCamII. Using 116° lens can provide quasi-omnidirectional coverage with 3 cameras

- Cameras are activated in a cyclic manner for intrusion detection
- Much more efficient than having denser single-camera system
- Can reduce the intrusion detection time by a factor of 10!







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