

ACTIVITÉS AUTOUR DES CAPTEURS SANS FIL

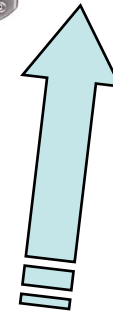
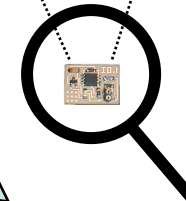
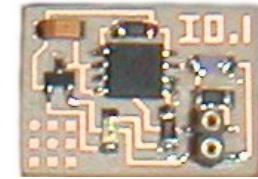
JOURNÉE LIUPPA-MIRA
LUNDI 29 JUIN, 2011
IUT ANGLET, MONTAURY



PROF. CONGDUC PHAM
[HTTP://WWW.UNIV-PAU.FR/~CPHAM](http://www.univ-pau.fr/~cpham)
UNIVERSITÉ DE PAU, FRANCE



WHAT'S MISSING?

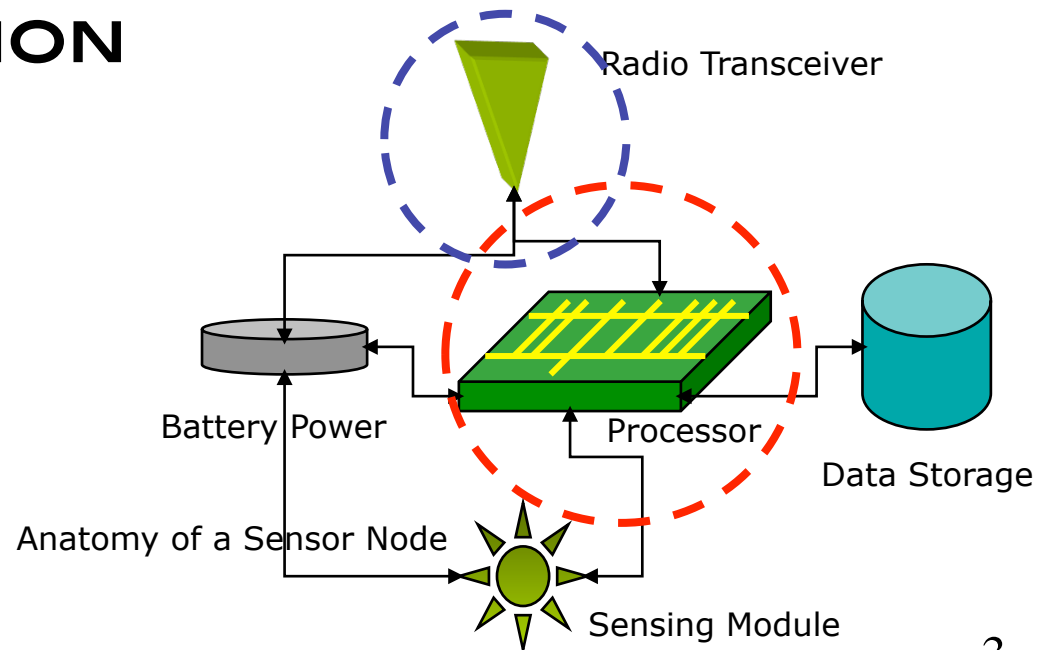
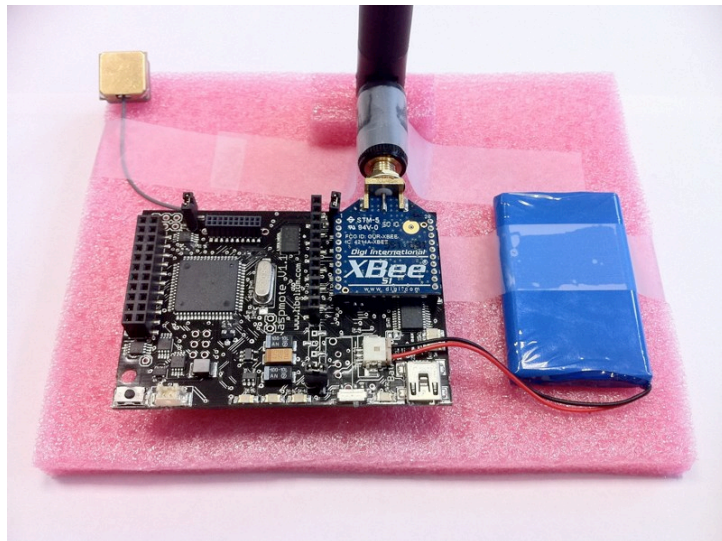


Between the PDA and the RFID tag of Internet-0, is the wireless autonomous sensor



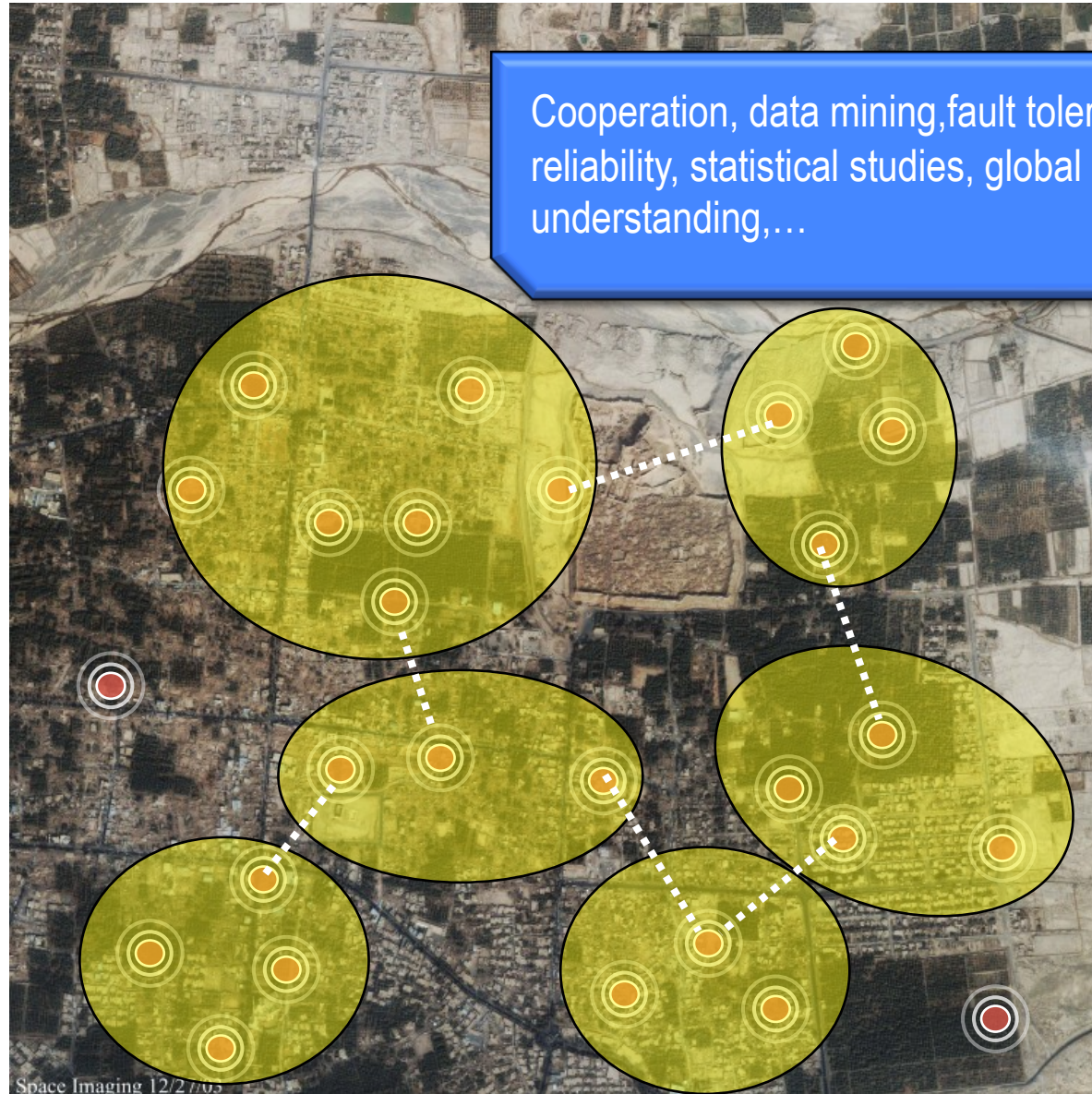
WIRELESS AUTONOMOUS SENSOR

- IN GENERAL: LOW COST, LOW POWER (THE BATTERY MAY NOT BE REPLACEABLE), SMALL SIZE, PRONE TO FAILURE, POSSIBLY DISPOSABLE
- ROLE: SENSING, DATA PROCESSING, COMMUNICATION

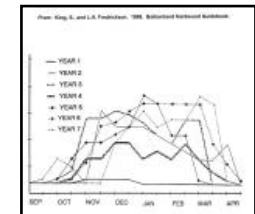
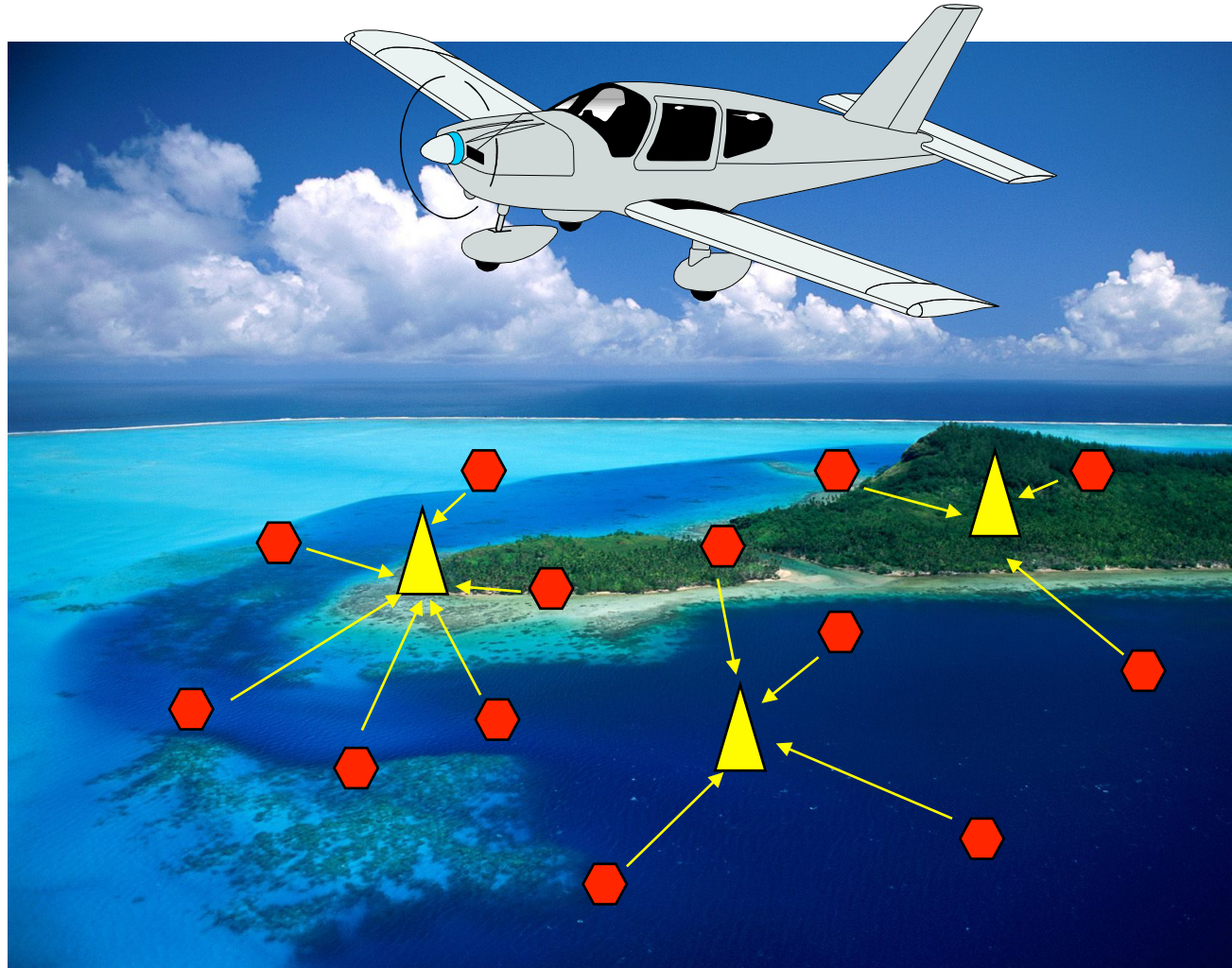


SENSOR NETWORKS

Cooperation, data mining, fault tolerance, reliability, statistical studies, global understanding,...



ENVIRONMENTAL APPLICATIONS

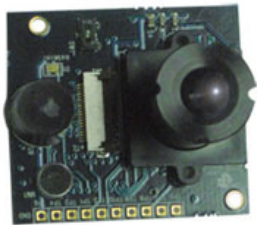


On-the-fly deployment of environmental monitoring's network

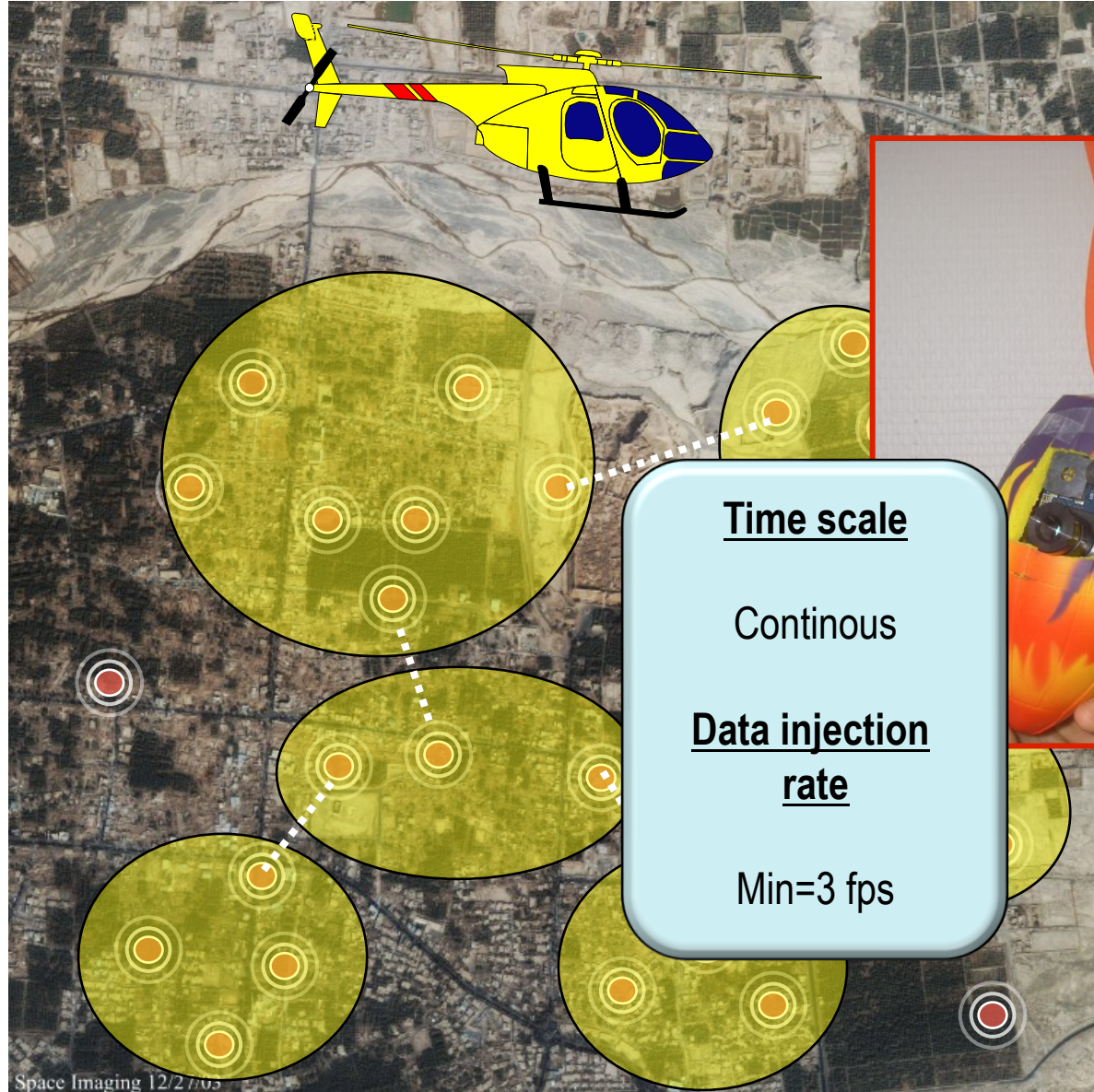
URGENT DISASTER RELIEF



Imote2



Multimedia board



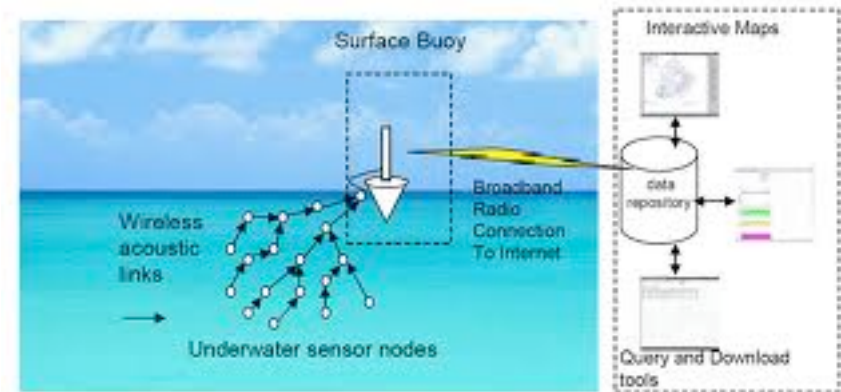
Time scale

Continuous

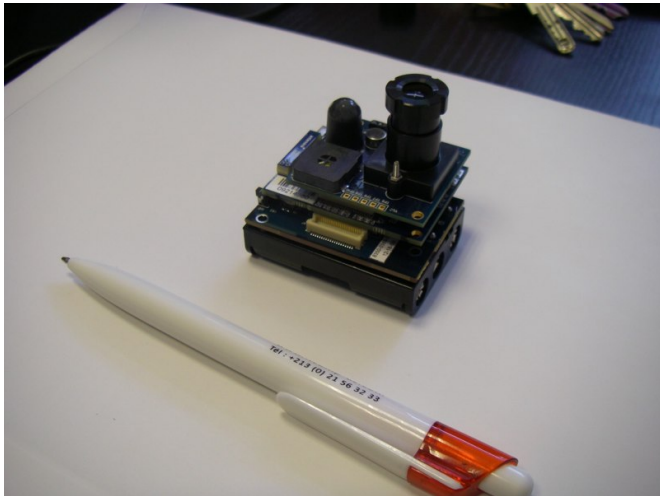
Data injection rate

Min=3 fps

OTHER APPLICATIONS



WIRELESS VIDEO SENSORS (2)

A screenshot of the CameraGUI software interface. The interface is divided into three main sections: 'Current Picture', 'Last Picture', and 'CameraGUI' control panel. The 'Current Picture' and 'Last Picture' windows show a grayscale image of a street scene with trees and buildings. The 'CameraGUI' panel contains the following elements:

- OPTIONS:** Grayscale (dropdown), QVGA (320x240) (dropdown)
- ONE-SHOT MODE:** Capture, Save
- NON-STOP MODE:** Play >>, Stop
- Message Log:** A list of messages with IDs: Msg ID 1000, Msg ID 1050, Msg ID 1100, Msg ID 1150.

TOWARDS WIDE-AREA SITUATION AWARENESS

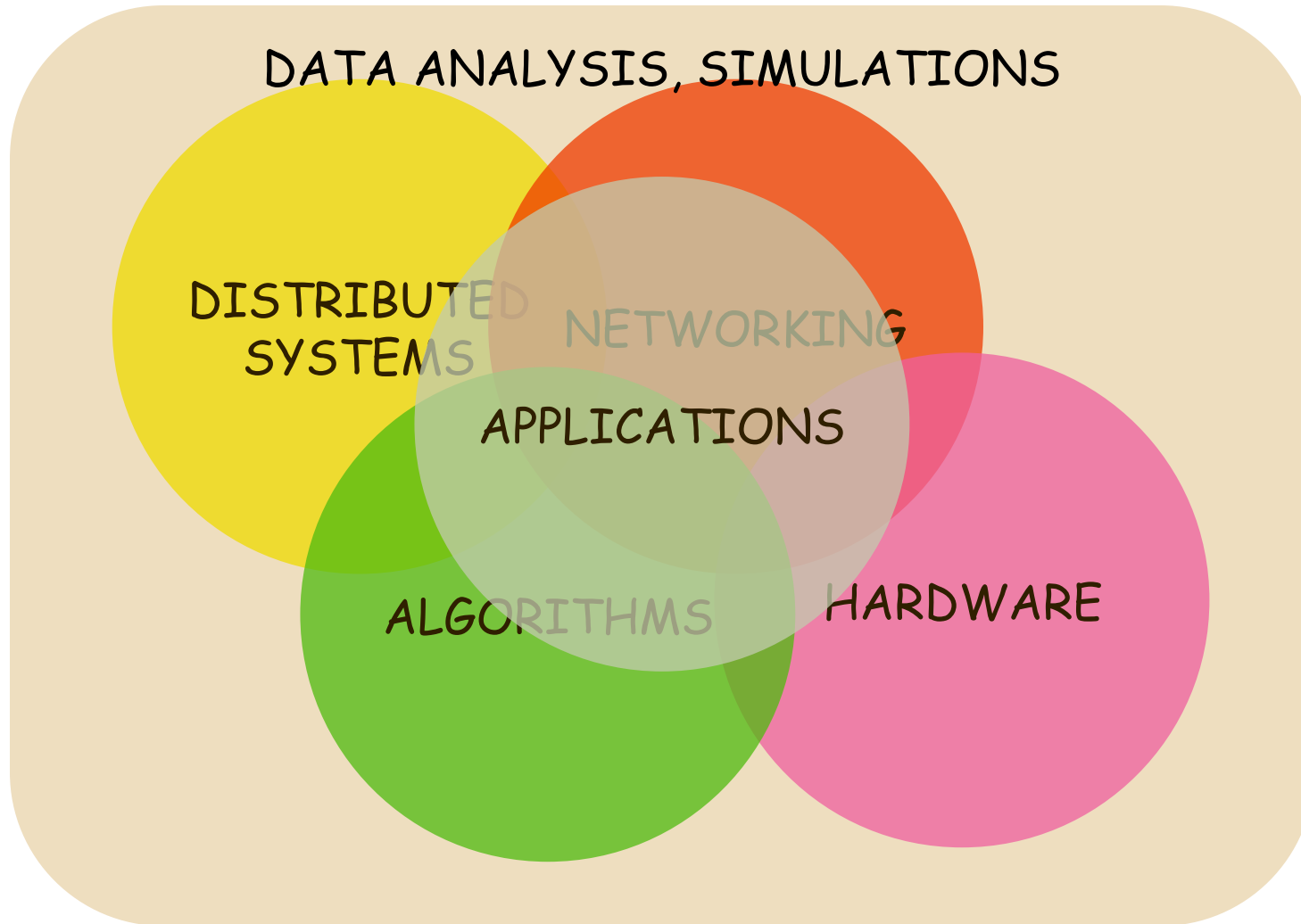


Authorised
User



Madrid
Hospital

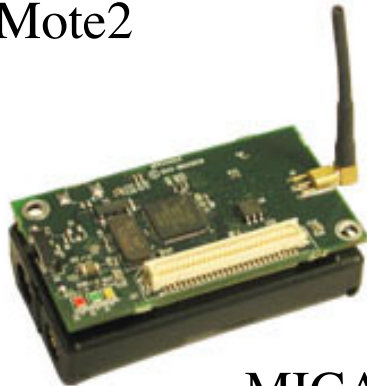
MULTIDISCIPLINARY RESEARCH



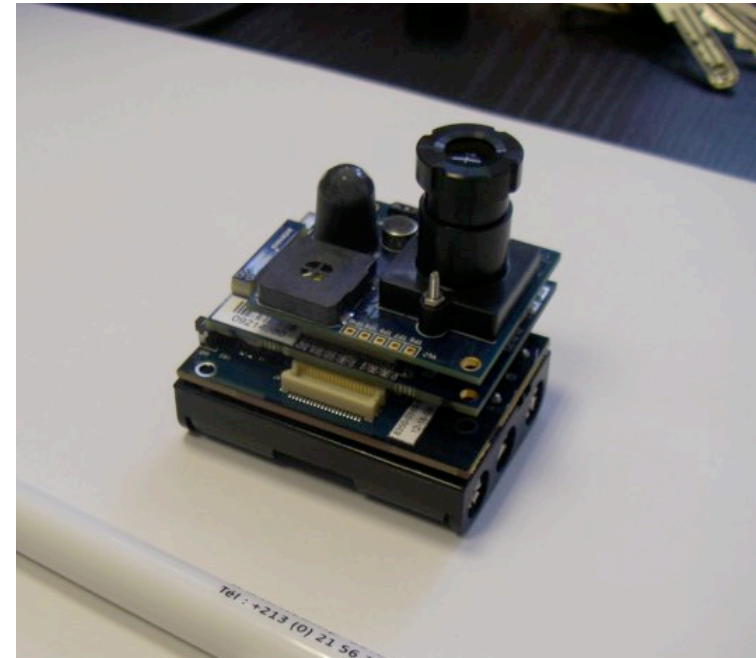
CROSSBOW MOTES



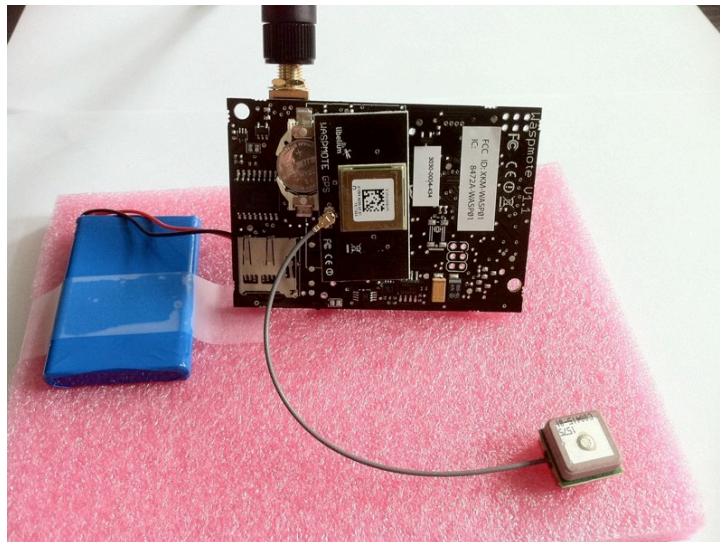
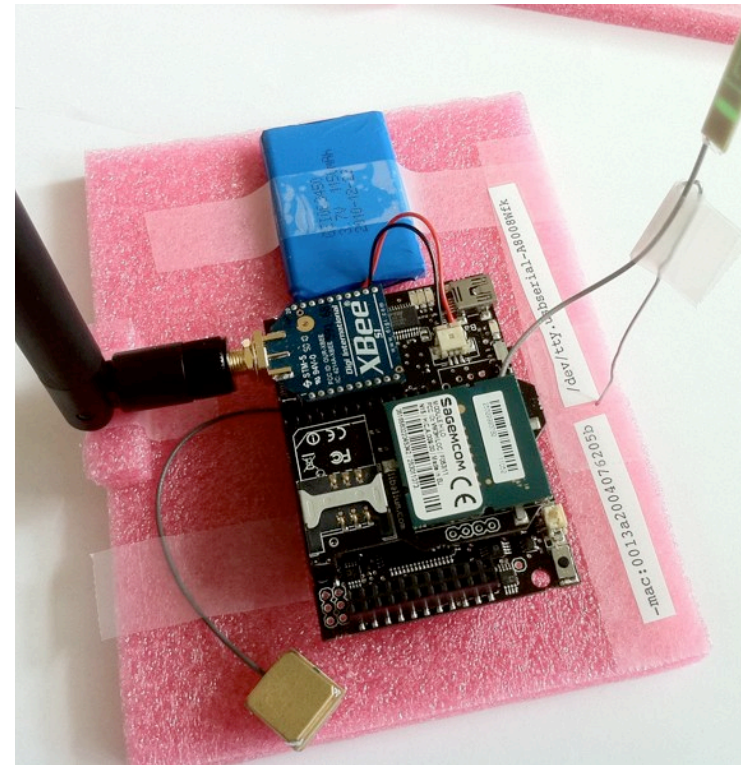
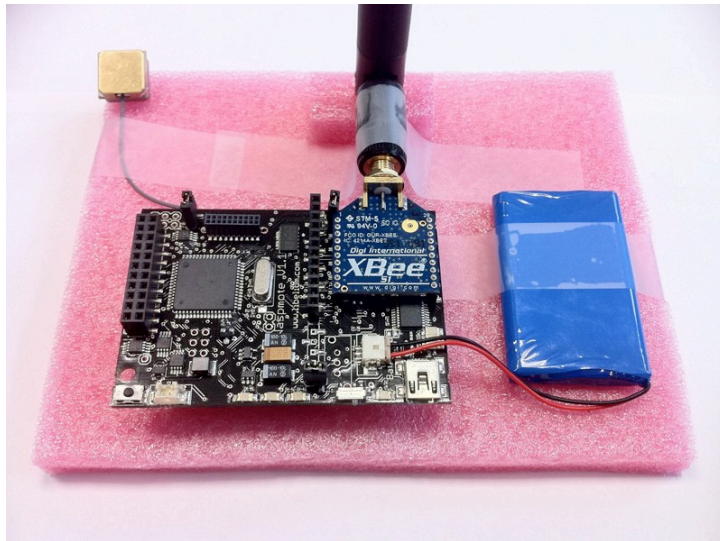
iMote2



MICAz



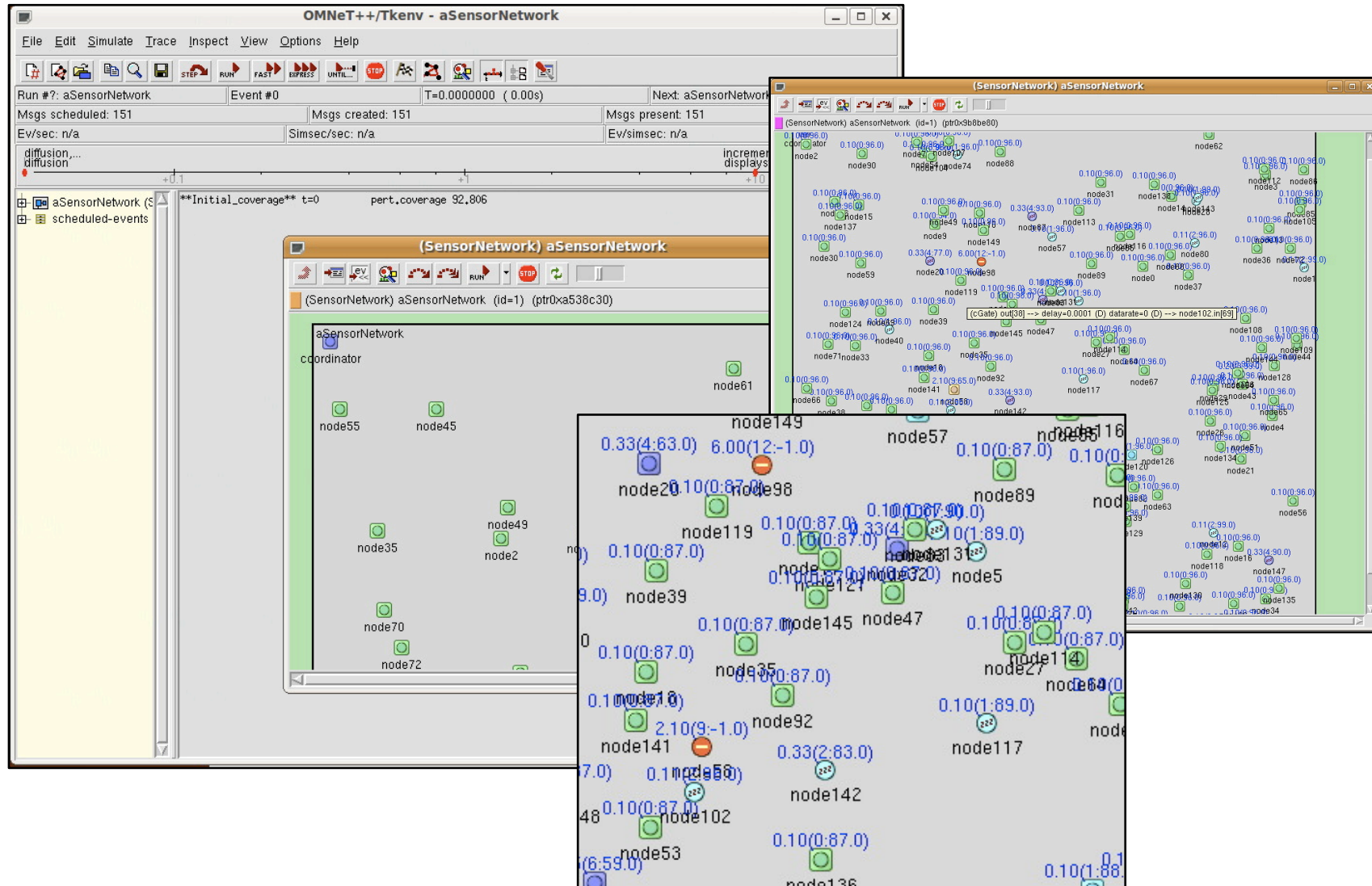
LIBELIUM WASPMOTE (1)



WASPMOTE (2)



OMNET++/CASTALIA



COLLABORATIONS

- ❑ UNIV. BREST
 - ❑ NETGEN, GIS INTEGRATION
- ❑ IRD/UMMISCO
 - ❑ MULTI-AGENT SIMULATION
- ❑ UNIV. KYOTO
 - ❑ SENSOR AND ROBOT INTERACTIONS FOR SEARCH&RESCUE
- ❑ UNIV. FRANCHE-COMTÉ
 - ❑ DATA MANAGEMENT, CHAOTIC SCHEDULING
- ❑ UNIV. ORAN
 - ❑ MAC LAYERS



OUR RESEARCH ISSUES

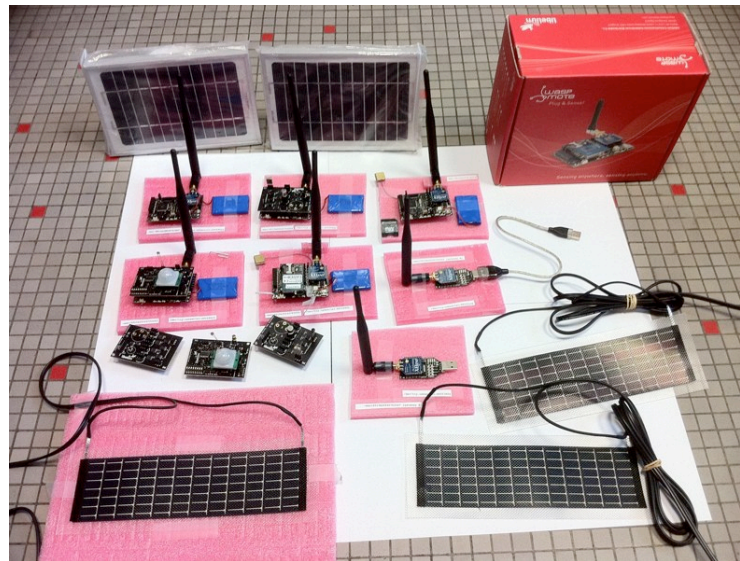
**COMMUNICATION
PROTOCOLS**

**TIME
SYNCHRONIZATION**

**MODELING
SIMULATION**

**DATA
RELIABILITY**

**DATA
MANAGEMENT**



**INFORMATION
PROPAGATION**

**SCHEDULING &
SELF-ORGANISATION**