



JOINT RESEARCH UNIT

UMI LAFMIA 3175 CNRS - CINVESTAV

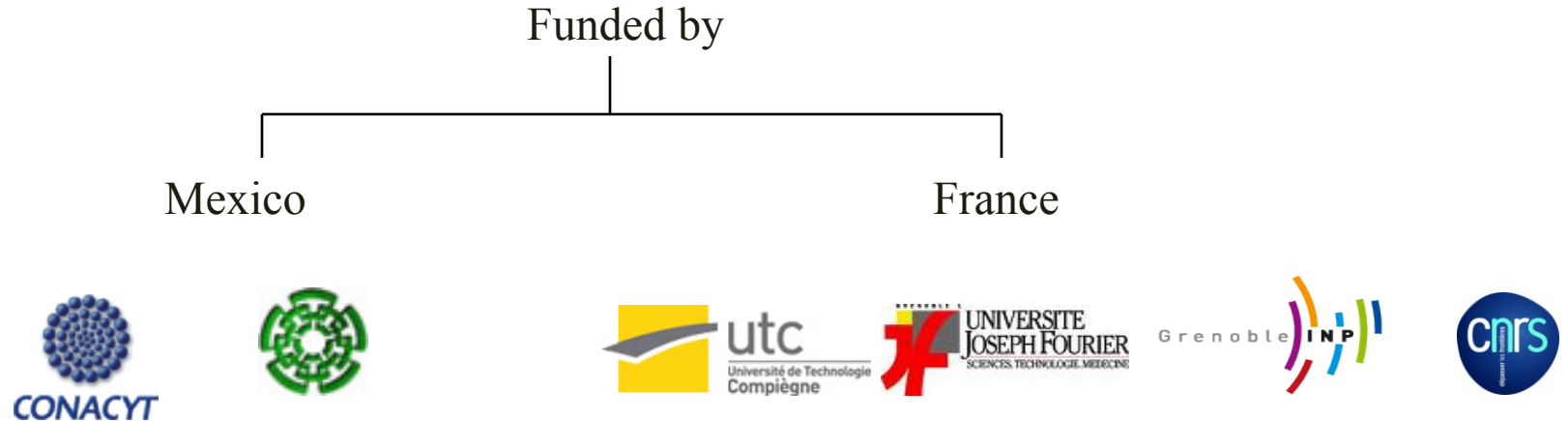


September 13th, 2011

UMI LAFMIA

Joint Research Unit between CNRS and CINVESTAV

Agreement signed at the French Embassy in Mexico on March 28th 2008





Visit of J. C. Romero Hicks, former Director of CONACYT, April 9 2010

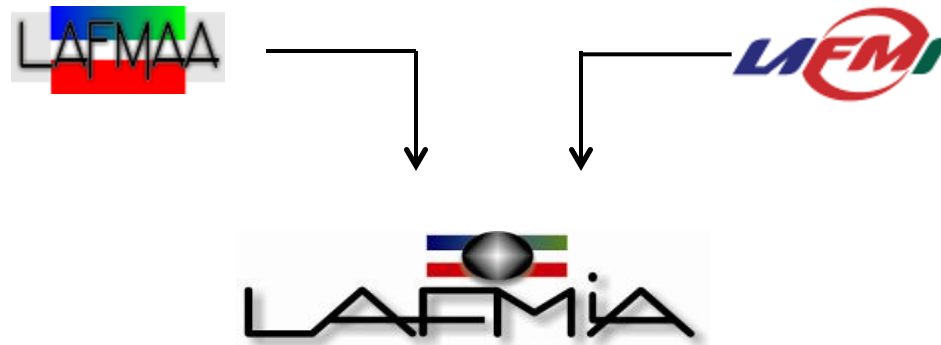


Visit of Daniel Parfait, Ambassador of France, Dec. 17 2008

BRIEF HISTORY

More than 20 years of collaboration in computer science and automatic control

- 1970-1996 Multiple bilateral exchange programs, visiting professors, etc.
- 1996-2000 PICS in Automatic Control
- 2002-2006 LIA in Computer Science (LAFMI) and LIA in Automatic Control (LAFMAA)



UMI LAFMIA ORGANIZATION

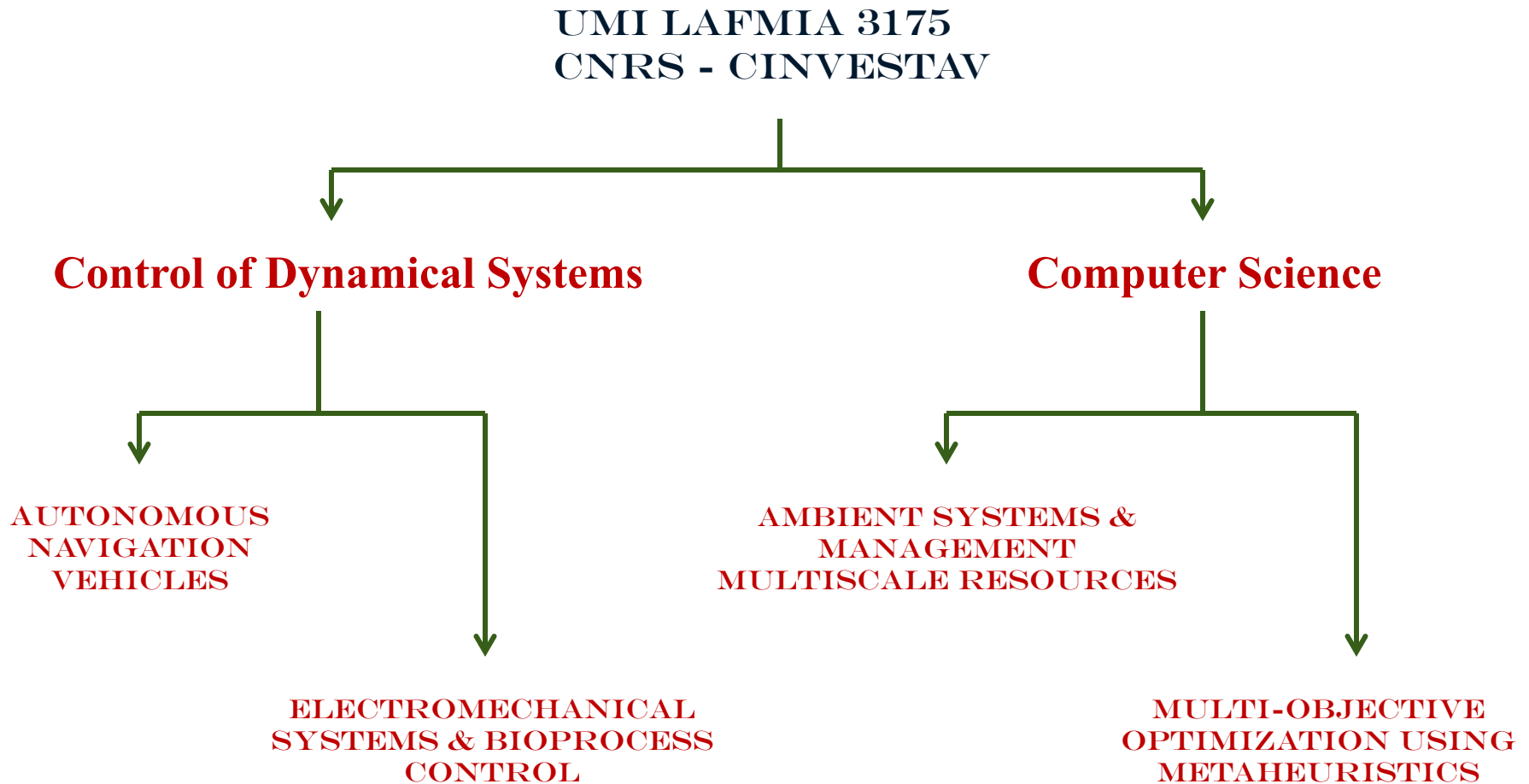
- Rogelio Lozano, Director
- Jorge Torres, Deputy Director
- Genoveva Vargas, Deputy Director in Computer Science
- Carlos Coello, Deputy Director in Computer Science

OBJECTIVES

- Research activities on specific topics of the UMI
- Scientific production (journals, conferences, patents)
- High level training (Master, PhD)
- Design of original research prototypes
- Organization of conferences and schools
- Establish a reference of international scientific cooperation

The UMI is evaluated every 2 or 4 years as every CNRS Research Unit

RESEARCH TEAMS



- 2 CNRS researchers
- 8 Professors of Department of Automatic Control, CINVESTAV
- 8 Professors of Department of Computer Science, CINVESTAV
- 1 Professor of Mechatronics Section, CINVESTAV
- 1 Professor of Department of Biotechnology, CINVESTAV
- 6 Professors of UDLAP

Associated members

Mexico

- 1 Professor of ITESM
- 1 Professor of ITL
- 2 Professors of BUAP
- 1 Professor of CINVESTAV Saltillo
- 1 Professor of CINVESTAV Guadalajara
- 1 Professor of ESIME Culhuacan IPN

France

- 2 CNRS of HDS UTC
- 4 CNRS, 4 PR of Grenoble INP
- 1 PR of UJF
- 3 CNRS of IRCCYN ECN
- 1 PR of ENSIETA
- 1 PR of LIRMM

STUDENTS & POSTDOCS

Control of Dynamics Systems

3 Postdocs
21 PhD students
5 PhD students in co-supervision Mx-FR
14 MSc students
6 PhD and MSc students at ITL

8 PhD thesis defended
11 MSc thesis defended
1 HDR defended

Computer Science

2 Postdoc
21 PhD students
22 20 MSc students
1 Master student in co-supervision Mx-FR

4 PhD thesis defended
4 MSc thesis defended

FUNDED PROJECTS

1. Multi-rotors at Internatinal UAV competition. DGA 2008-2009
2. Optical Flow Navigation, FRAE 2008-2011
3. Vertical take-off and landing plane, DGA 2008-2009
4. Gun Lunched Micro Aerial Vehicle. ANR 2010-2013
5. Oil prospection using mini-submarines, CGG Veritas 2011-2012
6. RedShine, BQR Grenoble INP, 2010.
7. Identification and H-infinity control, CONACYT 2009-2011
8. Identification of distributed systems. Ministry of Energy & CONACYT 2010-2012
9. Aerial surveillance in presence of wind, PEPS INSIS, 2010-2011.
10. Control of delay systems. CONACYT, 2007-2010
11. Linear systems, bilater Col. with IRCCYN, CNRS-CONACYT
12. Bilateral col. with Tcheque Rep. CONACYT-Academy of Sc.
13. Optimization techniques, Bilateral Col. with India CONACYT 2009-2011
14. Collaboration with U. Shinsu Japan, 2010
15. Bio-inspired algorithms. Col. With Chili, CONACYT 2011-2012
16. Multi-objective control. Col. Germany, CONACYT 2011-2012
17. Decision making, FP7 PEOPLE IRSES 2011

VISITING RESEARCHERS

Researchers from France visited the UMI

7 in 2008
2 in 2009
10 in 2010
8 in 2011

Researchers from UMI visited France

2 in 2008
3 in 2009
4 in 2010
8 in 2011

SCIENTIFIC PRODUCTION

CONTROL OF DYNAMICS SYSTEMS

3 Books

81 International Journals

151 International Conferences

COMPUTER SCIENCE

3 Books

77 International Journals

138 International Conferences

The UMI frequently receives journalists from:

- Chanel 22
- Chanel 40
- TV Azteca
- Chanel 4
- El Universal

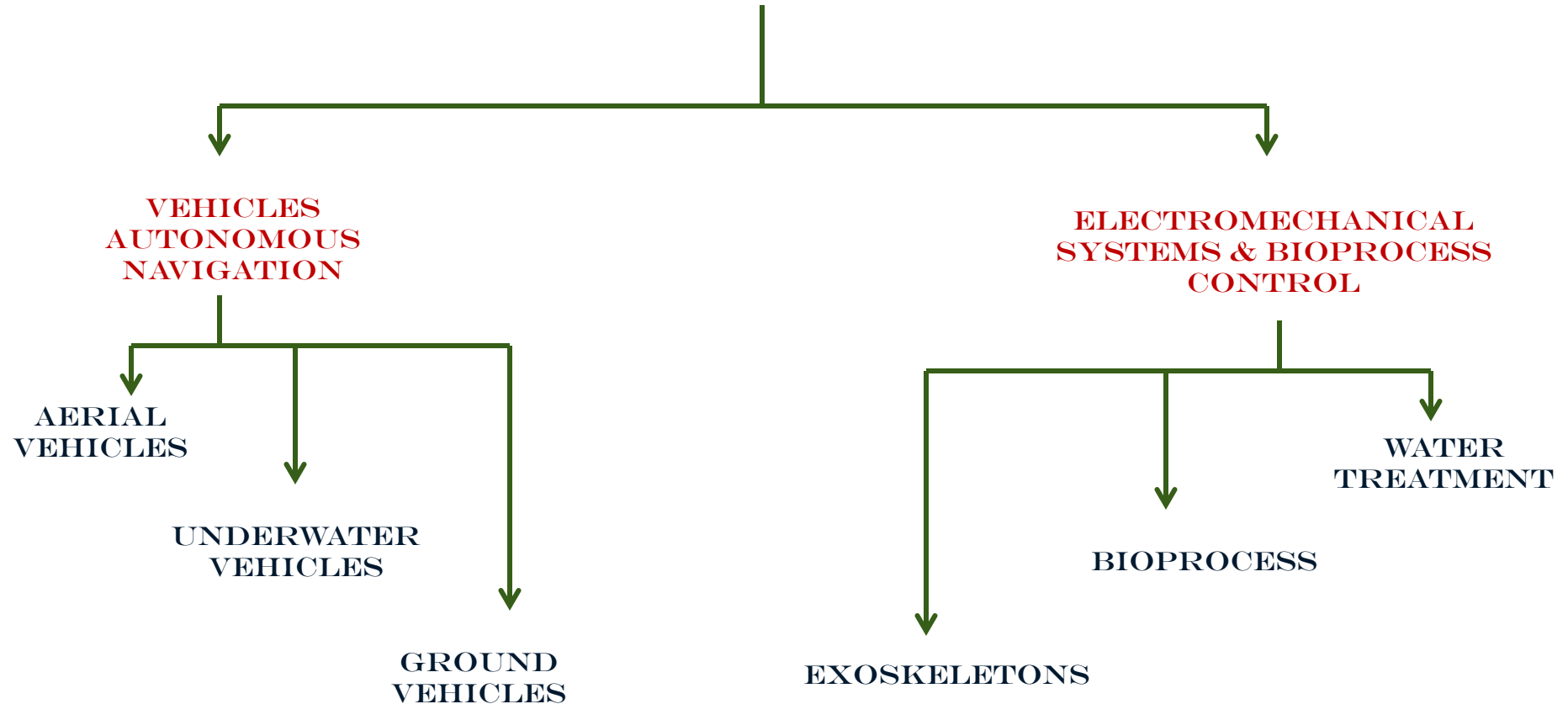
FURTHER INFORMATION

- A French language course is organized at the UMI with a professor from IFAL
- Violaine Antoine from UTC is looking forward to be postdoc of C. Coello starting January 2012
- Paolo Buccioli has finished a 2-year postdoc at UMI, he is SNI C and works now at an ICT society
- Juan Escareno has finished a 2-year postdoc at UMI and is now postdoc at UTC
- A Master program on Autonomous Navigation Systems has been submitted to CINVESTAV and is under discussion.

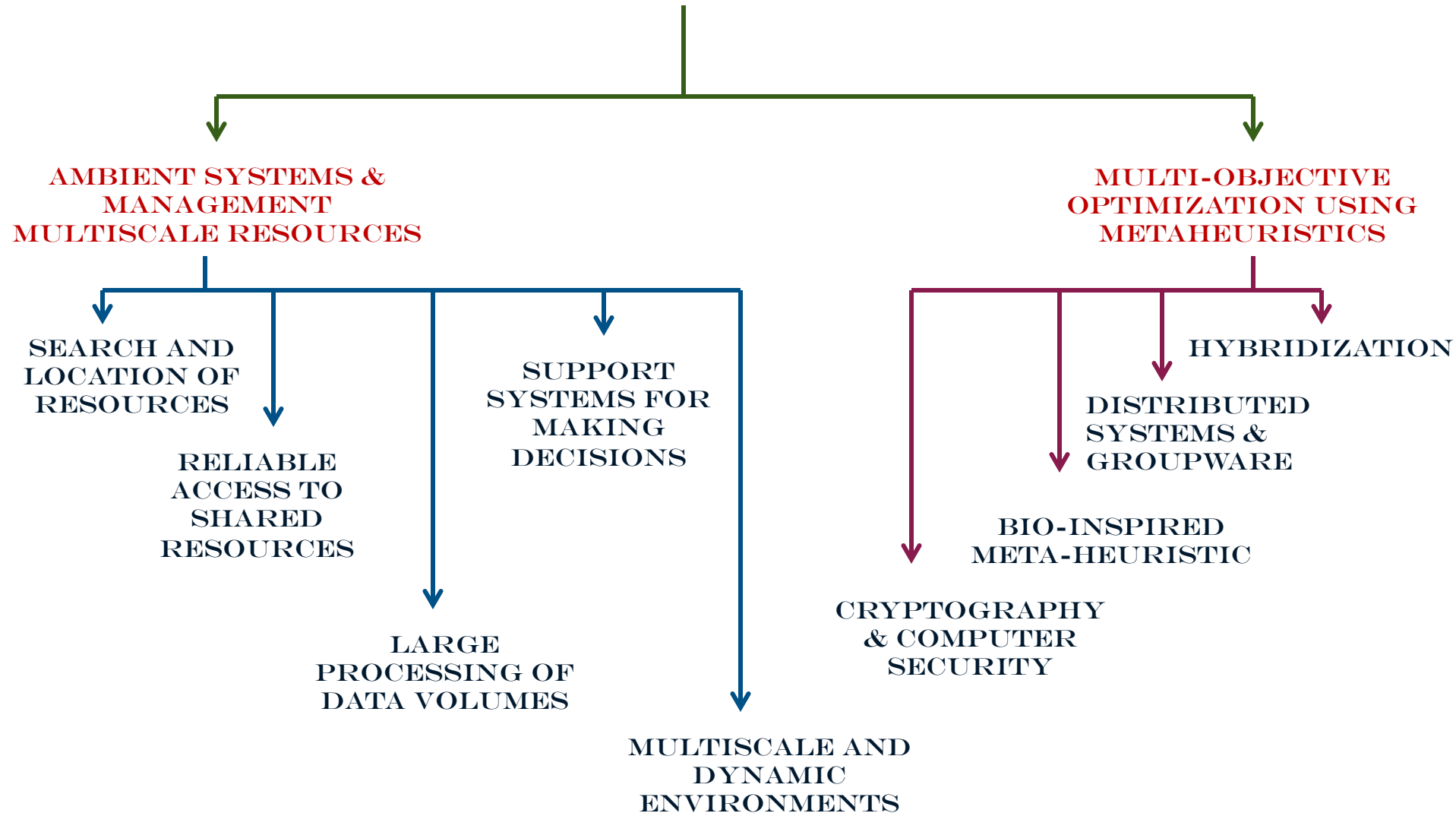
RESEARCH TEAMS



CONTROL OF DYNAMICS SYSTEMS

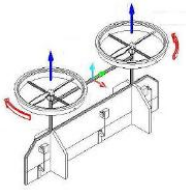


COMPUTER SCIENCE



PLATFORMS



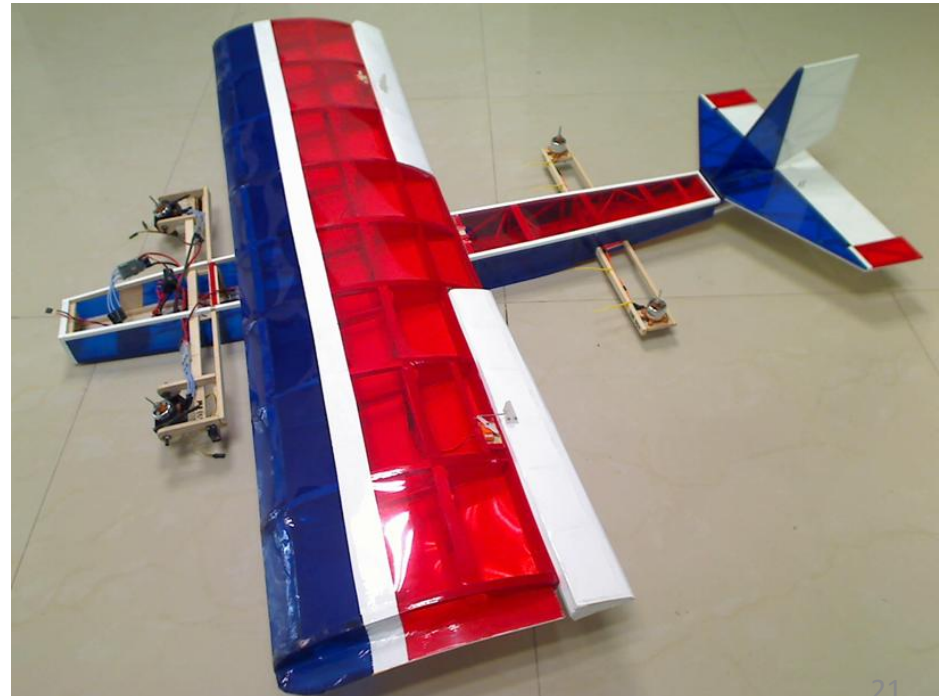


AERIAL VEHICLES



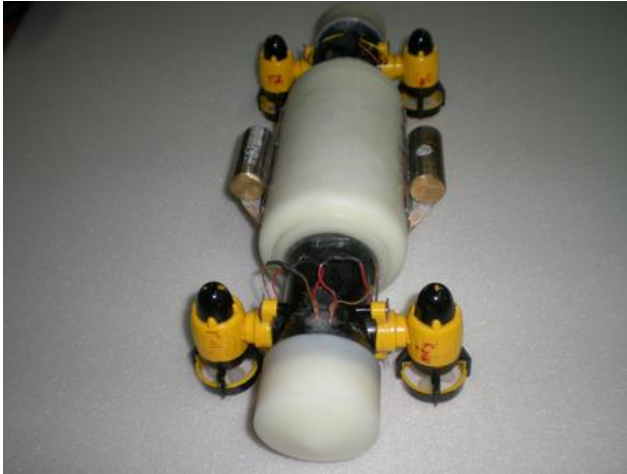


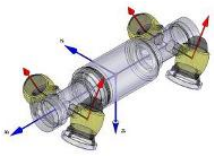
AERIAL VEHICLES





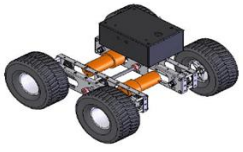
UNDERWATER VEHICLES



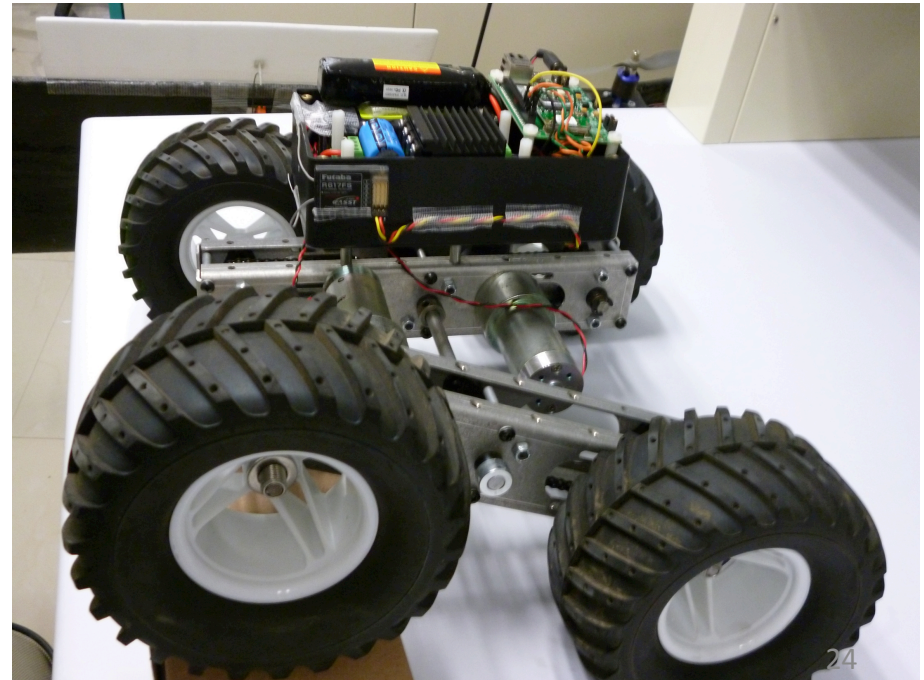
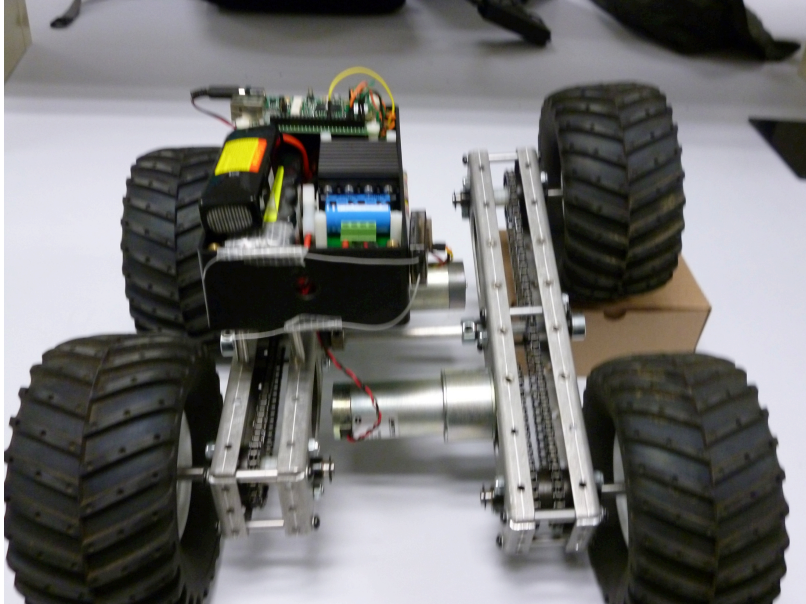


UNDERWATER VEHICLES



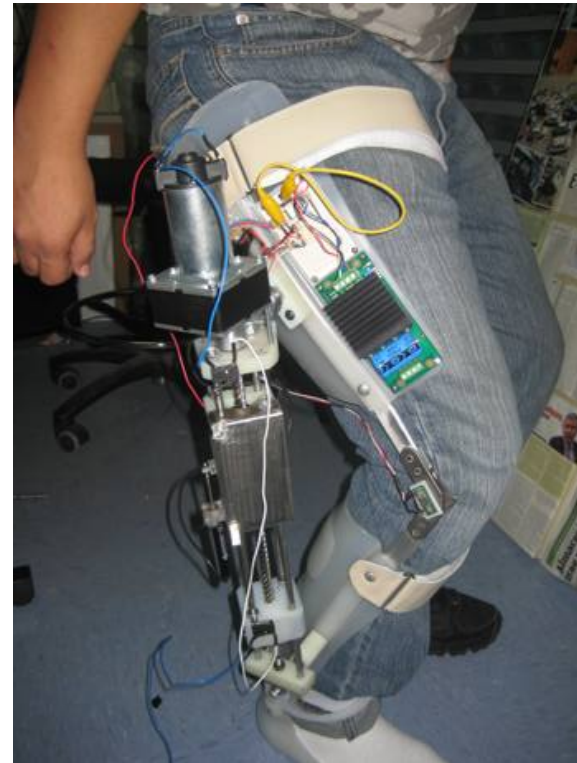


GROUND VEHICLES

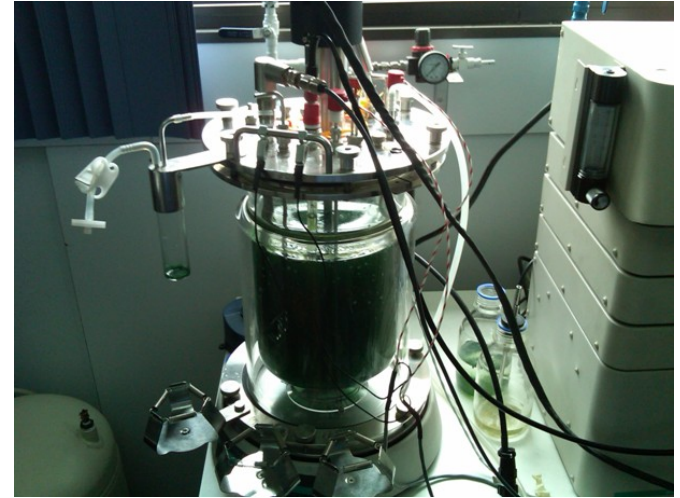




EXOSKELETON



WATER TREATMENT



UMI TOTAL BUDGET (K€)

	2008	2009	2010	2011
CONACYT	60	180	168.97	183.94
CINVESTAV	64	64	168	168 *
CNRS	180	181.2	184.8	211
UTC	29.4	23.4	30.6	28.7
G-INP & UJF	30	54	54	33.5

* New laboratory space cost: 720

CONACYT BUDGET FOR UMI (K€)

	2008	2009	2010	2011
Equipment	33	100	118.45	109.33
Visits Mx -> Fr	1.9	5.8	4.78	3.74
Visits Fr -> Mx	3.8	10.2	15.3	9.1
Conferences	3	9	6.62	7.66
Postdocs	18.3	55	23.82	54.11
Total	60	180	168.97	183.94

CINVESTAV BUDGET FOR UMI (K€)

	2008	2009	2010	2011
Personnel	0	0	60	60
Postdocs	40	40	84	84
Services	24	24	24	24
Total	64	64	168	168

CNRS BUDGET FOR UMI (K€)

	2008	2009	2010	2011
Equipment	28	21	23	2
Visits Fr -> Mx	9.2	8.5	12.3	17.6
Visits Mx -> Fr	7.2	6.5	10.5	9
Attending conferences	5.0	6.2	3.25	8.2
CNRS Personnel	120	120	120	120
Postdoc	10.6	19	15.8	54.2
Total	180	181.2	184.8	211

UTC BUDGET FOR UMI (K€)

	2008	2009	2010	2011
Equipment	9.4	8.13	10.5	7.5
Visits Fr -> Mx	4.2	4.25	3,9	3.2
Visits Mx -> Fr	8.2	9.25	7.5	6
Conferences	7.6	1.76	8.7	12
Total	29.4	23.4	30.6	28.7

G-INP & UJF BUDGET FOR UMI (K€)

	2008	2009	2010	2011
Schools	7.4	7.03	17.5	14
Conferences organization	14.6	12.8	0	0
Students visits	2.4	8.81	11.4	5.15
Staff visits	5.57	12.05	12.12	7.46
Projects development	0	7.7	6.8	5.82
Equipment	0	5.6	6.2	1.05
Total	30	54	54	33.5

THANKS

