imdea
instituto madrileño de estudios avanzados

www.imdea.org

International Research Centre for Networking Technologies

imdea networks

Foros de ciencia y tecnología
madri+d 2008
JUNIO
Tecnologías de las Comunicaciones

7-05-2008   www.imdea.org/networks

Madrid institute for advanced studies

---

imdea networks

www.imdea.org

Introduction to IMDEA

◆ **IMDEA Foundation: www.imdea.org**
◆ **Funded through the Regional Government of Madrid, Spanish Government and European Union**
◆ **One initiative, nine research institutes**
◆ **Close links with industrial partners such as Telefónica, ATOS Origin, Repsol, EADS, Hewlett-Packard, Alcatel-Lucent, BSCH, BBVA, Teldat, SATEC, and other leading technology companies**
◆ **Important role in technology and knowledge transfer**
◆ **Supports sustainable long-term development**
◆ **Current IMDEA institutes: <u>Networks</u>, Water, Social Sciences, Energy, Mathematics, Materials, Nanotechnology, Software, Food technologies**

www.imdea.org/networks

Foros de ciencia y tecnología
madr+d 2008
JUNIO
Tecnologías de las Comunicaciones

Madrid institute for advanced s

Slide 1

IMDEA Networks at the heart of the Digital Economy

- **An International Research Institute located in Madrid**
- **Our mission:**
  - *"To develop the scientific and technical advances that make the Future Wireless Internet a reality, contributing with these advances to create significant industrial and social value in our environment"*
- **Spin-offs strongly supported**
- **Emphasis on delivering innovations for innovative commercial applications**
- **Non-for-profit organization, but creating profits around us!**
- **A fully international team of researchers with English as the Institute's working language**
- **Based on the principle of merit and competition**
- **Bridging the gap between academia and industry**

www.imdea.org/networks

Madrid institute for advanced s

Foros de ciencia y tecnología
madr+d 2008
JUNIO
Tecnologías de las Comunicaciones

Slide 2

Board of Trustees

www.imdea.org/networks

Madrid institute for advanced s

Foros de ciencia y tecnología
madr+d 2008
JUNIO
Tecnologías de las Comunicaciones

imdea networks
www.imdea.org

Our Credo

◆ **We believe in group discussion and in bright individual ideas**

◆ **We do not believe in voting and committees (*IETF*)**

◆ **We believe in running code and rough consensus (*IETF*)**

◆ **Demo or die (better than publish or perish) (*Academia*)**

◆ **Genius is 1% inspiration and 99% perspiration (*T.A. Edison*)**

www.imdea.org/networks

Madrid institute for advanced s

Foros de ciencia y tecnología
madr+d 2008
JUNIO
Tecnologías de las Comunicaciones

---

imdea networks
www.imdea.org

Short CV of A. Azcorra

◆ **Graduated from Loy-Knorrix High, Michigan (1980)**
◆ **Telecom Engineer from UPM (1986) with "Sobresaliente" average grade**
 ❖ **"Price-Waterhouse" award to the best Telecom student from UPM**
◆ **Doctor in Telecom from UPM (1989) with "Cum-Laude" grade**
 ❖ **Joint COIT-AEIT-ANIEL prize to the best Telecom PhD Thesis in Spain**
◆ **MBA from Instituto de Empresa (1992)**
 ❖ **Award to the best student in his MBA class**
◆ **Deputy Vice-Rector at U. Carlos III de Madrid (1998-2007)**
◆ **Full-professor at U. Carlos III de Madrid (1999)**
◆ **Research Fellowship at ICSI U.C. Berkeley (1999)**
◆ **Coordinator of three European Networks of Excellence: E-NET, E-NEXT and CONTENT**
◆ **Research Fellowship at Massachusetts Institute of Technology (2002)**
◆ **Member of Scientific Committee of FECYT (2004-)**
◆ **General Chair of CoNEXT (2005)**
◆ **Technical Program Committee Chair of INFOCOM (2006)**
◆ **President of Association for Telematics (2006)**
◆ **IEEE Senior Member, ISOC Member**
◆ **Participated and directed a large number of European research projects**
◆ **Advisor of top institutions such as European Space Agency, Ministry of Education, Repsol, MFS-Worldcom, Regional Government of Madrid, Telefónica, …**
◆ **More than 100 international papers in the most prestigious conferences and magazines, also author of patents and of Sw licensed to large companies.**

www.imdea.org/networks

Madrid institute for advanced s

Foros de ciencia y tecnología
madr+d 2008
JUNIO
Tecnologías de las Comunicaciones

Our Scientific Profile

- ◆ **Director of the Institute**
    - ❖ **Prof. Dr. Arturo Azcorra, U. Carlos III de Madrid**
- ◆ **Scientific Council:**
    - ❖ **Prof. Dr. Hari Balakrishnan, Massachusetts Institute of Technology**
    - ❖ **Dip. Ing. Gonzalo Camarillo, Ericsson Labs at Finland**
    - ❖ **Prof. Dr. Jon Crowcroft, U. Cambridge**
    - ❖ **Dip. Ing. David del Val, Techfoundries**
    - ❖ **Prof. Dr. Jim Kurose, U. Massachusetts at Amherst**
    - ❖ **Dr. Huw Oliver, former Director of HP Internet Labs**
    - ❖ **Prof. Dr. Ioannis Stavrakakis, National Kapodistrian University of Athens**
    - ❖ **Prof. Dr. Ralf Steinmetz, Tech. University of Darmstadt**
    - ❖ **Prof. Dr. Lixia Zhang, U. of California at Los Angeles**
    - ❖ **Prof. Dr. Zhi-Li Zhang, U. Minnesota**

www.imdea.org/networks

Madrid institute for advanced s

Strategic Research Agenda (I)

- ◆ **Inputs received from:**
    - ❖ **Scientific Council meeting**
    - ❖ **Industrial Board members meeting**
    - ❖ **EC-IST Area Director of Converged Networks & Services**
    - ❖ **Panel of experts for initial document**
    - ❖ **Other relevant agents**
- ◆ **Internal definition process based on best practices document from NSF funded Centers**

www.imdea.org/networks

Madrid institute for advanced s

Strategic Research Agenda (II)
Future Wireless Internet

◆ **IMDE Networks Vision**

"Our vision is that Internet will significantly expand its wireless access capabilities in the next 10 years. We call this phenomenon the <u>Future Wireless Internet</u>, and we envision that it will seamlessly provide secure media and data services among at least 10^{12} heterogeneous wireless devices"

◆ **IMDEA Networks Mission**

"To develop the scientific and technical advances that make the <u>Future Wireless Internet</u> a reality, contributing with these advances to create significant industrial and social value in our environment"

www.imdea.org/networks

Madrid institute for advanced s

Strategic Research Agenda (III)
Future Wireless Internet

❖ **Audiovisual Content Distribution Networks**
   ✓ **Multicast, QoS, Web, …**
❖ **Pervasive Internet Access**
   ✓ **Network Mobility, vertical handover, VANETs, ..**
❖ **Security and Privacy**
   ✓ **Particularly relevant in a wireless environment**
❖ **Resilient Scalable Network Control**
   ✓ **Naming, addressing, multipath routing, mesh, …**
❖ **Alternative business models**
   ✓ **Pricing, community infrastructures, …**

www.imdea.org/networks

Madrid institute for advanced s

Human Resources: Key issue

- **Excellency may only be achieved through bright researchers**
- **Active programs to capture the best researchers worldwide**
- **Young people is key in our sector:**
    - ❖ **Trained in the most recent technologies**
    - ❖ **Fresh disruptive ideas**
    - ❖ **Very motivated to commercialize through big companies or their own start-up**
- **Personnel Structure:**
    - ❖ **~5 Chief Researchers**
    - ❖ **~15 Senior Researchers**
    - ❖ **~80 Pre-doc Research Assistants**
    - ❖ **~40 Undergrad interns from partner universities**

Foros de ciencia
y tecnología
madr+d
2008
JUNIO
Tecnologías
de las Comunicaciones

Human Resources: renovation

- **Personnel renovation encouraged to maintain freshness and a good flow of new ideas**
- **Doctors expected to develop a commercial value technology and leave (~7 years)**
- **Pre-doc staff to remain for their PhD duration (~4 years), and leave**
- **No pre-doc staff will be hired as Researcher before a 3 year period after the finalization of his pre-doc contract**
- **Exchange programs to have frequent visiting researchers coming from and going to other leading Research institutions world-wide**

Foros de ciencia
y tecnología
madr+d
2008
JUNIO
Tecnologías
de las Comunicaciones

Human resources: our offer

◆ A challenging vision with clear, well focused, research ideas
◆ A work environment that is demanding, participative, stimulating, and fun
◆ A prestigious research team
◆ An efficient organization providing excellent service
◆ Good research installations and laboratories
◆ Good technical support for research
◆ Competitive salary and benefits
◆ Strong and solid corporate identity and image
◆ Full support to transfer your results to industry, or to set your own start-up company
◆ 50% Financial participation in IPR-generated income
◆ Support with all visa, relocation, … procedures
◆ Madrid is a quality city, well connected and with significant IT industry

www.imdea.org/networks

Madrid institute for advanced s

Human resources: attracting the brightest young researchers worldwide

◆ Internationally Competitive offer to Research Assistants
◆ Regional programs to attract brightest people worlwide:
  ❖ South America
  ❖ Europe
  ❖ India
  ❖ Mediterranean
  ❖ Far East
◆ PhD Program from our partner Universities (U. Carlos III, …)
◆ Department to handle all immigration and relocation issues

www.imdea.org/networks

Madrid institute for advanced s

Research Assistants

- **IIT Interns 2008/2008:**
  - IIT Kanpur, IIT Guwahati, IIT Bombay, IIT Jaipur
- **Research Assistant Applications 2007-08:**
  - Spain, The Netherlands, Romania, Sweden, Italy, Turkey
- **Research Assistant Applications 2008-09:**
  - Pakistan, Spain, India, United Kingdom, Brasil, Italy, Chad, Taiwan, Iran

www.imdea.org/networks

Madrid institute for advanced s

Visiting Researchers 2007-08

- **Incoming 2007-08:**
  - Jon Crowcroft, U. Cambridge (UK)
  - Nick Maxemchuk Columbia University (USA)
- **Outgoing 2007-08:**
  - Pablo Serrano, U. Massachussetts at Amherst (USA)
- **Incoming 2008-09:**
  - Gustavo de Veciana, U. Texas at Austin (USA)
  - Nicolas Georganas, U. Ottawa (Canada)

www.imdea.org/networks

Madrid institute for advanced s

Permanent Researchers

◆ **Arturo Azcorra, double appointment with U. Carlos III**

◆ **Nick Maxemchuk, double appointment with Columbia University**

◆ **Positions open: new hirings expected soon**

Madrid institute for advanced s

Institute Location

◆ **Current Locations in Leganes (Madrid):**
   ❖ **Avda. de la Universidad, 30 (U. Carlos III de Madrid)**
   ❖ **Avda. del Mar Mediterraneo, 22 (U. Carlos III de Madrid)**

◆ **Final Location in Leganes: specific building of 8,000 m2**

◆ **Building plan: from end 2008 to end 2010**
   ❖ **100 Researchers**
   ❖ **20 persons for administration and services**
   ❖ **12 support staff**
   ❖ **Laboratories and test-beds**
   ❖ **Regional Research Network REDI Madrid**

◆ **Located in the Science-Techno-Business Park "Leganés Tecnológico" (joint venture of IMADE, UC3M and Leganes Municipality)**
   ❖ **Excelent communications by road, bus and subway**
   ❖ **Top corporate and university environment**

Madrid institute for advanced s

**Institute
location:
main site
building (to
be built)**

Professional Management and organization

- ◆ **IMDEA Networks Manager: Mark Evamy**
- ◆ **Fully automatized procedures with electronic-signature**
- ◆ **Project support Department**
- ◆ **IPR Department**
- ◆ **Engineering Department**
- ◆ **Start-up support Department**
- ◆ **Telematics Services Department**
- ◆ **Operations Department**
- ◆ **Facilities Department**
- ◆ **Institutional Relations Department**
- ◆ **General Administration Department**

imdea
networks

Thanks for your attention!!

www.imdea.org/networks

Madrid institute for advanced s

Foros de ciencia
y tecnología
m**adr**d
2008
JUNIO
Tecnologías
de las Comunicaciones