

EU-China mobility

The contribution of a joint laboratory in IT

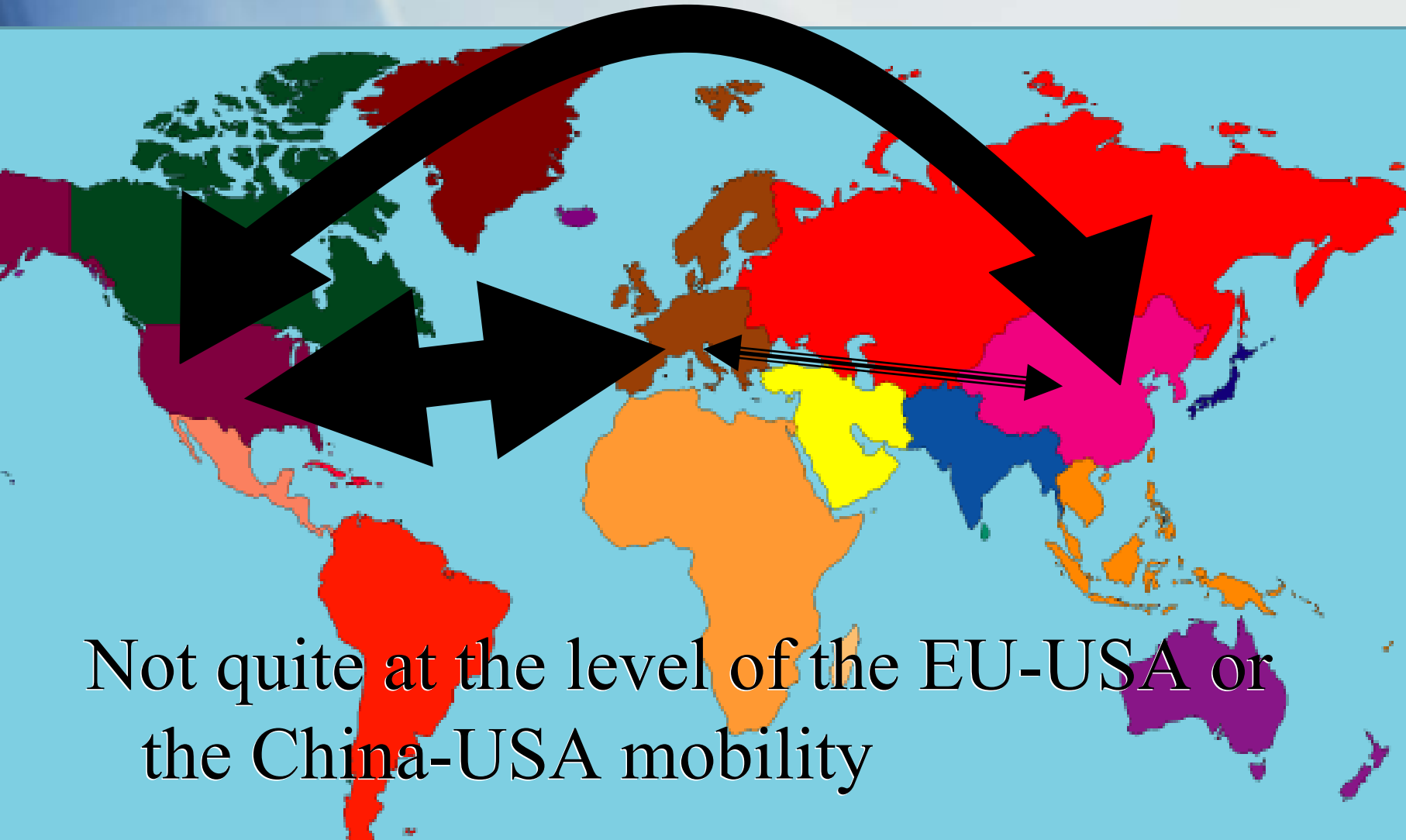
Stéphane Grumbach

LIAMA, The Sino-French IT Lab

The logo for LIAMA, featuring the letters 'LIAMA' in a bold, black, serif font. The letters are set against a light blue background that has a subtle, curved shadow effect behind them, giving the logo a three-dimensional appearance.

LIAMA

EU-China mobility



Not quite at the level of the EU-USA or
the China-USA mobility

Historical perspective

EU-USA

- Strong and ancient partnership between the USA and most European countries
 - Large mobility of European scientists to the USA

China-USA

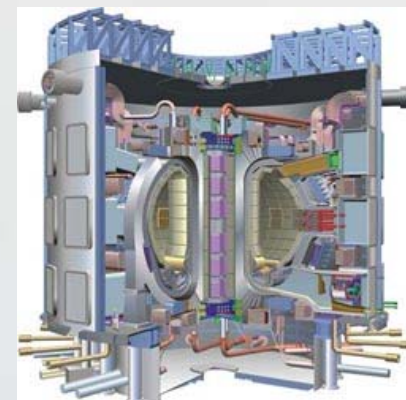
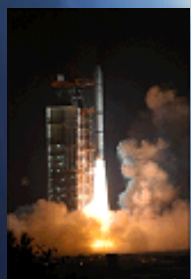
- Since the beginning of the reforms in 1978
 - Massive flow of Chinese students to the USA



Future trends

- An increased **visibility of Europe** in China

- ITER
- Galileo
- Pasteur Institute of Shanghai
- Double Star (ESA)
- ...



- An increased **interest for China** from European researchers and students

Mobility of Labs

- Globalization of R&D

Transnational corporations have

labs in all regions in the world

China is now the **first destination**

of new R&D labs

- Size of the market for new technologies
- Importance of qualified human resources



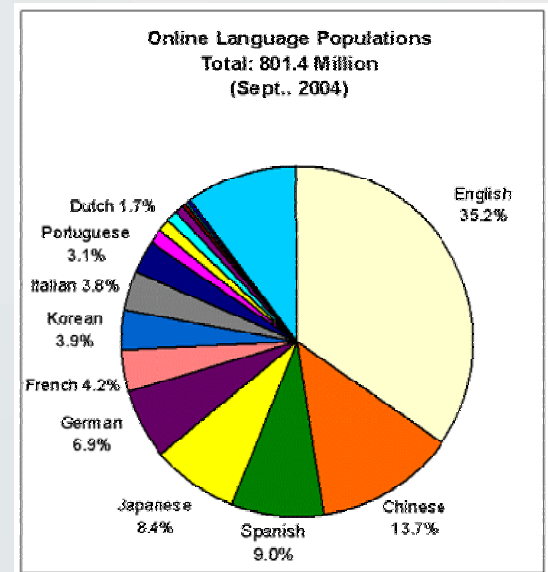
Boom of IT in China

Rapidly increasing IT penetration

- 400 millions mobile phones (1st rank)
- 120 millions people online (2nd rank)
2nd linguistic group online
- 30% computer equipped urban home

Rapidly expanding IT industry

- 3rd rank (behind USA and Japan)
- 2nd for manufactured products (PC, etc.)
Lenovo (IBM PC), Huawei
- 1st for export since 2004 (ahead of the USA)



The logo for LIAMA, consisting of the letters L, I, A, M, A in a bold, black, serif font. The letters are set against a light blue background with a subtle blue arc behind them, all contained within a white rectangular box.

LIAMA

**A Sino-European
Joint Laboratory
in IT**

What is LIAMA?



A Joint Lab

- a team of French and Chinese researchers and students
- working together on half a dozen research projects

- initiated in France by INRIA



- hosted by the Institute of Automation

of the Chinese Academy of Sciences, CAS

- located in the heart of Zhongguancun in Beijing



The Chinese silicon valley



A history of almost a decade

LIAMA was established in January 1997 by

- The Chinese Academy of Sciences, CAS, and
- The French Institute for Computer Science and Control, INRIA

To promote cooperation in the areas of computer science, automation and applied mathematics

Following an annual call for proposals

small research projects

funded by both parties

have been selected each year

by a joint scientific committee



INRIA, the founding partner

French National Institute for Computer Science and Control

2700 scientists including 950 PhD students

Budget of 135 MEuros

A major European actor of research in IT

Founding member of ERCIM

More than 100 projects in FP6

Coordination of major projects **CoreGrid (NoE)**

Several projects with Chinese partners

120 project-teams divided into 5 scientific areas

- Communicating systems
- Cognitive systems
- Symbolic systems
- Numerical systems
- Biological systems

Leader in technology transfer

80 spin-off companies (Ilog)



CASIA, the host partner

The institute of Automation

One of the IT institutes of CAS in Beijing

Created in 1956

330 faculty (40 full professors) + 480 postgraduates

- National Laboratory of Pattern Recognition
image processing and graphics, machine vision, pattern recognition,
speech recognition and understanding, natural language processing,
- Key Laboratory of Complex systems
advanced robotic control, artificial intelligence,
intelligent sensing technology, human-machine interfaces,
advanced manufacturing systems, cognitive science,
- A famous spin-off: Hanwang



The direct result of a mobility

Professor MA Songde

- 1980's PhD at INRIA in France
- 1990's director of the Institute of Automation
- 1997 opening of LIAMA
- 2000's vice-minister for S&T



A hub for the cooperation in IT

- **Joint research** projects
- **Training** of students
 - LIAMA hosts an increasing number of French students
 - LIAMA sends Chinese students to Europe
- **Innovation and normalization**
 - Promotion of open source software
 - Scientific computing software, Scilab
 - Development projects with industry
 - Alcatel Space, France Telecom, etc.

The current research projects

Fundamental and applied research

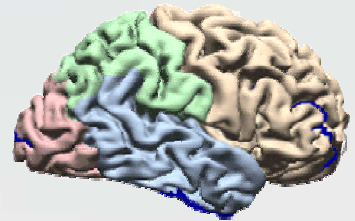
Brain imaging and cognitive disorders

Eco-informatics (environmental models and images)

Computer graphics, CAD - Computational geometry

Pattern recognition and image processing

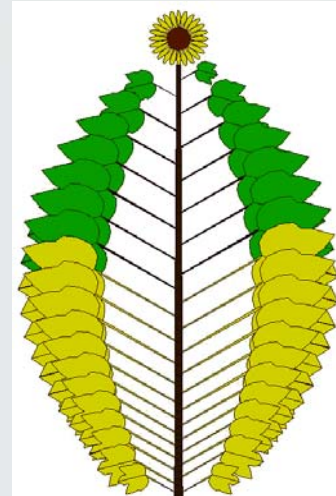
Network data management



Development - open source software

Promotion of the scientific computing software

Scilab





The Scilab project

Scilab

- An open source scientific software package for numerical computations (linear algebra, control, signal processing, simulation, etc.)
- An alternative to Matlab

Scilab consortium (created in June 2003)

- 20 companies

(incl. CEA, CNES, DASSAULT-AVIATION, ECOLE POLYTECHNIQUE, EADS, EDF, IFP, INRIA, PSA, RENAULT, THALES)

Development team at INRIA Rocquencourt



The Scilab project (2)

Promotion of Scilab in China

HU Baogang, CASIA

LI Shi, CASIA

Software distribution: 23 000 downloads (in China)

Annual seminar with scilab contest since 2002

Several toolboxes developed

Two books in Chinese

High school mathematics Textbook using Scilab



<http://www.scilab.org.cn>



Human resources in LIAMA

A team of about 70 people (40 in 2005)

- 7 Chinese researchers CASIA

incl. Véronique Prinnet, first Foreign researcher of the Chinese Academy of Sciences

- 5 French researchers INRIA, CNRS, Cirad, INRA

incl. Stéphane Grumbach, first Foreign habilitation of the Chinese Academy of Sciences

- 5-15 French students

incl. 2 PhD students

- 50 Chinese students

Associated to a large network in Europe and China of collaborators

Impact on the mobility

- Since 1997, about **100 research projects** involving **1000 researchers and students**
- **10 conferences** organized yearly
- Distinguished **speaker series** in Beijing
Numerous visits of European scientists
- **Launch of a LIAMA Internship program**
For European students (15 yearly)
- French classes for Chinese students
(more than half of our students)

LIAMA, a booster for mobility

Although strong agreement of mutual benefits of increased mobility of researchers and students

Mobility still a challenge

- Practical difficulties for researchers
- Additional cost of mobility often hard to cover

Lack of incentives (*personal view*)

Need for visible mobility programs

widely advertised and

managed at the level of the research institutions involved

LIAMA and Europe

Promotion of **Sino-European cooperation**

1st FP5 IST EU-China project, ANFAS, 1999

1st OIF Marie Curie fellowship for China, 2006

Under study:

Enlargement of LIAMA to other European partners

January 18, 2007

Beijing, Institute of Automation

**Conference for the 10th anniversary of
LIAMA**

organized under the auspices of the

EU-China year of science

谢谢