

**PROGRAMA DE L'ESPAI EUROPEU
D'EDUCACIÓ SUPERIOR DEL DURSI:
MASTERS INTERNACIONALS
MASTER OF RESEARCH ON
INFORMATION TECHNOLOGIES**

- DOCUMENT INFORMATIU -

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Master of Research on Information Technologies

<i>École Polytechnique Fédérale de Lausanne</i>	(EPFL)
<i>Politecnico di Torino</i>	(PdT)
<i>Université Catholique de Louvain</i>	(UCL)
<i>Universität Karlsruhe</i>	(UKA)
<i>Universitat Politècnica de Catalunya (coordinator)</i>	(UPC)

Característiques principals:

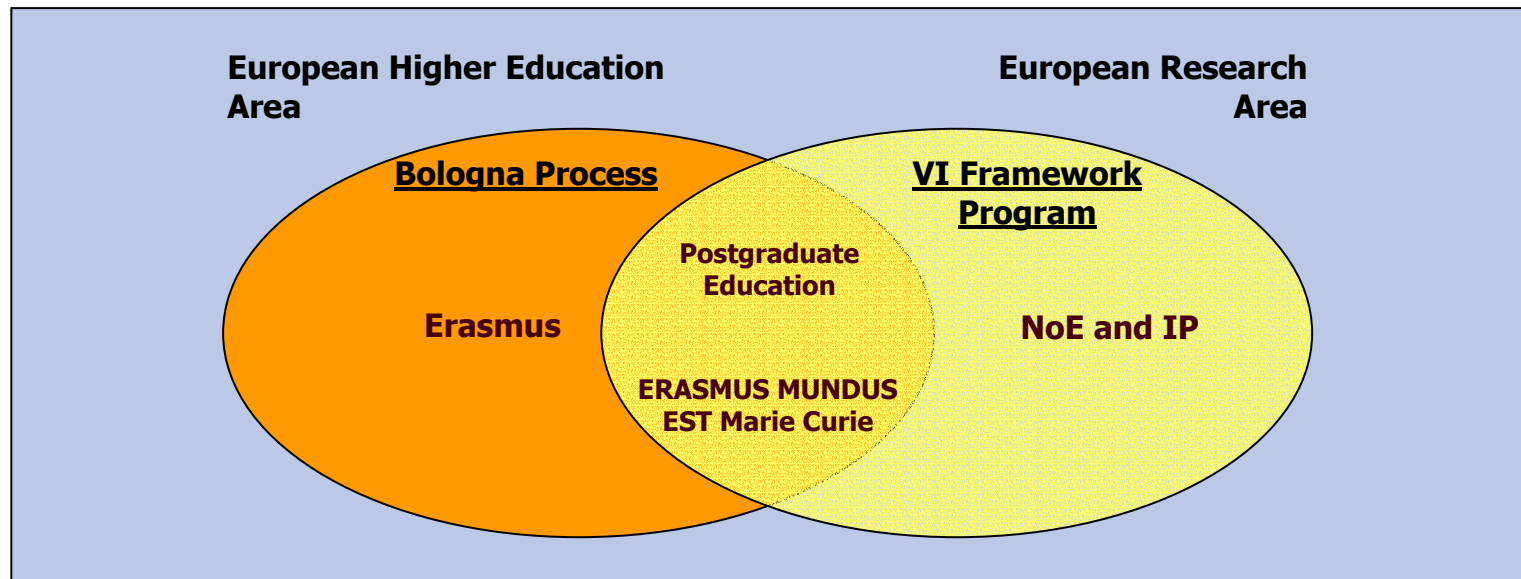
- Fase inicial d'estudi amb el suport de **l'IGSOC**.
- Iniciativa **capdavantera** en el context europeu.
- Evolució del actual programa de doctorat cap a una estructura integrada en l'àmbit europeu (**EEES**).
- Bastida sobre un programa de **doctorat de qualitat** (Menció ANECA, programa IGSO) i sobre una activitat de **recerca excel·lent**.

Consideracions:

- El **postgrau** i la **formació de investigadors** també formen part del procés de Bolonia.
- La formació d'investigadors en **l'àmbit TIC** és estratègica per Catalunya i Europa.
- **Voluntat de formar part del pla pilot** endegat pel **DURSI**.
- **Suport institucional** en l'àmbit ERASMUS MUNDUS.

Current European Framework:

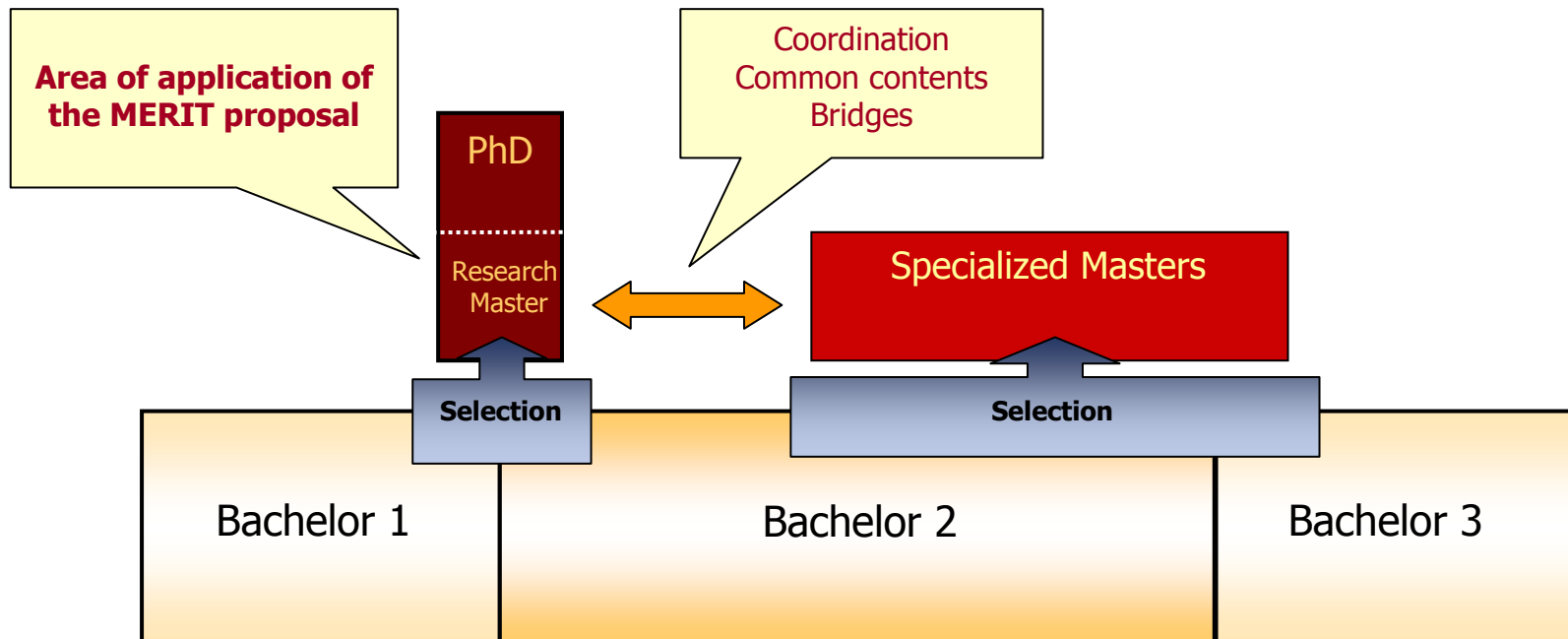
- Bologna Process.
- European Research Area.
- European Higher Education Area.



Post-graduate education is the meeting point in the construction of ERA and EHEA.

The Role of Research Masters in the Bologna Process:

- The Berlin Conference has put in evidence the need to include **PhD education** in the Bologna Process.
- **Research Oriented** Masters are the natural link between PhD and Bachelor programs.
- Research Master Graduates will develop specific skills to be **innovative and creative** in their field.



Basic ideas

- **An Opportunity** to take a lead and become an European reference.
- **Research Oriented** Master within the guidelines of the Bologna process.
- Scope on **Information and Communication Technologies** and Applications.
- European dimension involving **4 to 6 leading European institutions.**
- This European Joint Master must be **a framework:**
 - to foster student mobility,
 - to strengthen on-going cooperation between research groups,
 - to attain better visibility for each of the programs involved.

Member institutions:

- École Polytechnique Fédérale de Lausanne (EPFL)
- Politecnico di Torino (PdT)
- Université Catholique de Louvain (UCL)
- Universität Karlsruhe (UKA)
- Universitat Politècnica de Catalunya (UPC)

Why these institutions:

- There is a strong institutional commitment between them. All are **CLUSTER** members.
- There is a **strong research cooperation** between them.

Research cooperation: The NoE example

- Participation in Networks of Excellence within the VI Framework Program^(*):

	Schema	NewCom	Visnet	Similar	ePhoton	ACE	Metam.	Target
UPC								
EPFL								
UKA								
PdT								
UCL								

(*) This table only shows those NoEs in which the TSC Dpt. of UPC is participating with some of the other Master partners.

Present Status:

- Preliminary activities supported by **IGSOC** (6/03).
- All institutions have appointed a **delegate** and work together in the definition of MERIT (12/03).
- Application for EU **Marie Curie** mobility actions (project ERUDIT) (2/04).
- **CLUSTER** support (obtained 2/04).
- Meeting in Barcelona of all the institutions (4/04)
- To apply for the first call of the **ERASMUS MUNDUS** programme (5/04).
- Internal approval (5/04).
- To be in a position to start offering the Master as a pilot project in **year 2004-05**.

Research Affiliates



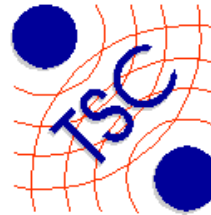
Institutional Support



Academic Partners



Escola Politècnica Superior
de Castelldefels
UNIVERSITAT POLITÈCNICA DE CATALUNYA



External Advisory Committee



Agència
per a la Qualitat
del Sistema Universitari
de Catalunya

Industry Affiliates

To be defined

European Academic Partners



POLITECNICO DI TORINO



Université catholique de Louvain



Universität Karlsruhe (TH)

Necessitats:

- Reconeixement de l'activitat realitzada dins del **pla pilot** del **DURSI**.
- **Dotació d'espais** per realitzar el Master.
- **Dotació econòmica** per arrancar l'activitat.
- **Flexibilització** dels instruments de planificació per considerar el pla pilot.

Oportunitats:

- Esdevenir un **model referent i capdavanter** a Europa i Catalunya.
- Atraure **finançament exterior** (Marie Curie, Erasmus Mundus).
- Participar en un **procediment experimental d'acreditació**, conjuntament amb l'AQU,



Master of Research on Information Technologies
UPC Implementation

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UPC TSC Dept. Master Implementation (I):

- The scope is **Information Technologies** in a broad sense.
- It is **research-oriented** Master: Strong emphasis is placed on fundamentals and the development of research skills.
- The Master will include **Fundamentals**, such as:
 - Electromagnetic,
 - Signal Processing,
 - Information Theory, ...
- as well as **Applications**, such as:
 - Communications,
 - Speech and Image Processing,
 - Biomedical Engineering
 - Remote Sensing, ...
- It is expected that **Master graduates**:
 - will complete their Ph.D.
 - will join R+D departments in industry.
 - or will launch start-ups.

UPC TSC Dept. Master Implementation (II):

This is an **on-going process (Open to discussion)**

Some data of the current proposal:

- A **four semester** Master with a total number of **120 ECTS** credits.
- **30 ECTS** credits are obtained with the completion of a **Master Thesis**.
- **30 ECTS** credits must be obtained in a **partner institution** different from the student's original one.
- **English** will be the common language of the Master.
- **Restrictive admission** based on student capacity.
- **From 50 to 60** students per year, once the Master is established.

UPC TSC Dept. Master Implementation (III):

- **Core courses:** Fundamentals. A student must complete a minimum of 30 ECTS credits (5 courses) from a wider offer (typically, 10 courses).
- **Concentration courses:** Specialization. A student must complete a maximum of 42 ECTS credits (7 courses) from a wider offer (typically, 14 courses).
- **Transversal courses:** Generic. A student must complete a maximum of 18 ECTS credits (3 courses) from a wider offer (typically, 6 courses).

	Core	Concentration	Transversal
1st semester	24 credits	0 credits	6 credits
2nd semester	6 credits	18 credits	6 credits
3rd semester	0 credits	24 credits	6 credits
4th semester	Master Thesis: 30 credits		