



INSTITUTE  
FOR ADVANCED  
STUDIES  
LUCCA

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VIA POSTA PRIORITARIA  
ANTICIPATO VIA POSTA ELETTRONICA

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Lucca, October 20<sup>th</sup>, 2011

**Subject: Letter of support for FuturICT**

Dear Dr. Boch,

IMT very much appreciates the mission of the planned FuturICT flagship project to unify hundreds of the best scientists in Europe and foster their scientific cooperation to enable planetary scale simulations of our socio-economic system, thus resulting in massive empowerment to decision support and enhancing prospects for international cooperation and a sustainable future.

We have already expressed considerable admiration for the project in a previous letter of interest. We hereby want to inform of our strong willingness to support it by a substantial commitment. Also in collaboration with CNR and Politecnico di Torino, we are ready to provide concrete resources, both in terms of people and structures, and at IMT a rich cluster of competences and research units can be involved in the project.

IMT has implemented an innovative organizational model for its activities, which evolves around a computational and organizational platform, exploiting the complementarity between the Institute's distinctive capabilities in global computing, massive text and data mining, integration and management of heterogeneous knowledge bases, quantitative analysis of real world economic facts and phenomena. In addition, IMT promotes interdisciplinary research in Economics, Political Sciences, Sociology, Physics, and

Computer Sciences. Furthermore, it integrates a rich set of skills as well as macro and micro data mapping onto multiple domains relevant for comparative institutional, economic, and social analysis at the international level. Members of our team have distinctive capabilities and have published in top level journals in many areas relevant to FuturICT, as Distributed Systems, Global Computing, Grid Computing, Economics of Networks, Topological and Stochastic Investigation of the Evolution of Large Socio-Economic Networks,

Comparative Institutional Analysis, Microeconomic Analysis of Market Formation and Evolution, Simulation of the Evolution of Large, Multiscale, Socio Economic Systems; Exploration of Key Properties of Large Economic Systems. Finally, while our scientific organization has an academic orientation, our scholars and fellows collaborate intensively with public and private institutions, in areas which are key for policy making and business development.

IMT as a whole therefore covers a rich cluster of competences and research units involved in the Flagship.

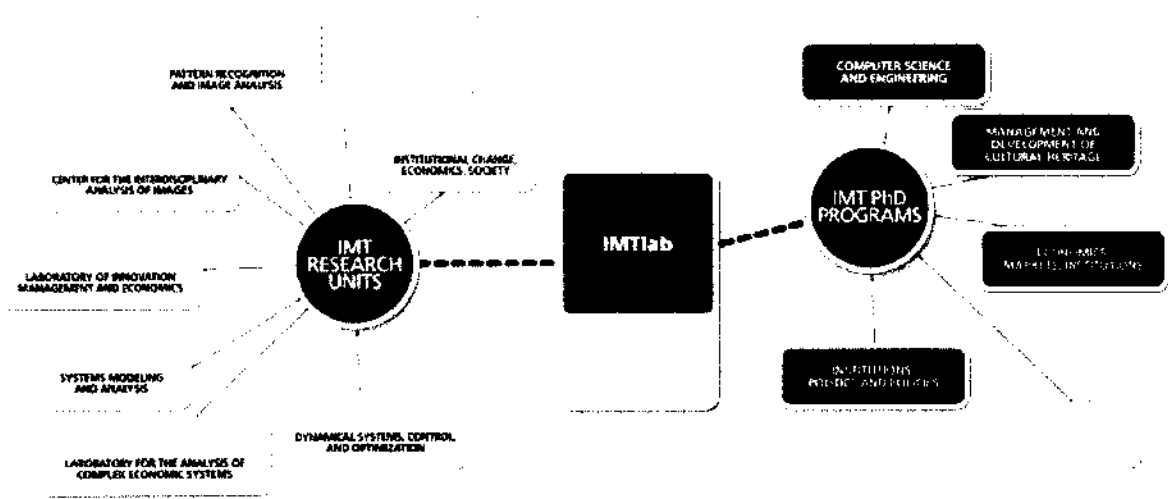
About 60 PhD students enrolled in Computer Sciences and Engineering, Economics Markets Institutions, Institutions Politics and Policies, Management and Development of Cultural Heritage, Decisions and Complex Systems (forthcoming) PhD Programs.

About the 70% of IMT young faculty members. Within the beginning of 2012, 40 researchers will be working at IMT (27 Assistant Professors, 7 postdoctoral fellows and 6 research collaborators and project fellowships holders). These researchers are involved in the Research Units SYSMA – Systems Modeling and Analysis, AXES – Laboratory for the Analysis of complex Economic Systems, LIME - Laboratory of Innovation Management and Economics, DYSCO – Dynamical systems, Control and Optimization, ICES – Institutional Change, Economics, Society, LYNX - Center for the interdisciplinary Analysis of Images, PRIAn - Pattern Recognition and Image Analysis.

**By the end of 2011 8 permanent professors will be involved in FuturICT activities,** and the continual presence at IMT of renowned Visiting Professors and Visiting researchers will enhance its intellectual community.

**ORGANIZATIONAL MODEL**

IMT ORGANIZATIONAL MODEL



**QUANTIFICATION OF PROSPECTIVE ACADEMIC STAFF AND STUDENTS DEDICATED TO THE FUTURICT PROJECT:**

<b>ACADEMIC STAFF AND STUDENTS</b>	<b>n.</b>	<b>% time / year</b>	<b>Total contribution / year (€)</b>
<b>PhD students</b>	60	50%	360.000
<b>Professors</b>	8	60%	384.000
<b>Researchers and Postdoctoral fellows</b>	18	60%	486.000
<b>Research collaborators and technical staff</b>	6	60%	108.000
<b>TOTAL</b>	92		<b>1.338.000</b>

**IMT FACILITIES THAT COULD BE DEDICATED TO THE PROJECT:**

<b>FACILITIES</b>	<b>M2</b>	<b>% use / year</b>	<b>Contribution / year (€)</b>
<b>Offices</b> (included laboratory and library)	3900	70%	413.500
<b>Other Facilities</b> (canteen, dormitories)	2000	70%	212.000
<b>IMTLAB</b> (computational platform)	90	70%	9.500
<b>TOTAL</b>			<b>635.000</b>

**QUANTIFICATION OF "IMT LAB" EQUIPMENT AND DESCRIPTION:**

<b>IMT LAB</b>	<b>Software + Hardware + Other equipment (€)</b>
<b>TOTAL</b>	<b>121.000</b>

The IMTLAB offers facilities for long running computations by means of both terminal services and batch processing. Services are organized within two servers equipped with 2 Ghz x 24 cores each (48 cores considering multi-threading) and physical disk space organized on a SAN (a Dell EqualLogic PS6000E) with 16 Tera-Byte disk space. In addition, a 2.6 Ghz x 8 core server (16 cores considering multi-threading) that mainly hosts web services (Moodle, WordPress, Wiki, a video conference service and personal web pages).

In conclusion, 20 desktop computers, used for distributed computation and specific setups such as a geostastical data analysis, are available and connected to all servers. With the new network infrastructure each machine can be accessed remotely via a fast gigabit connection and from the IMT Internet link via a 100 Mbps link. IMTLAB has adopted a policy of using multi-core developing on a single machine and it will be updated with a new 80 core server and a high performance GPU based on CUDA cores (448 cores). Other standard services for distributed computing (es. MPI API based system) can be acquired by means of agreements with others research institutes.

**QUANTIFICATION OF ADMINISTRATIVE STAFF CONTRIBUTION AND INDIRECT COSTS:**

We consider that Administrative Staff and Indirect Costs will represent 3% of the total amount of IMT contribution.

<b>ADMINISTRATIVE STAFF</b>	<b>3% the total contribution</b>
<b>TOTAL</b>	<b>62.800</b>



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Based on this commitment, IMT would like to contribute significantly to the planned FuturICT project and to European scientific excellence.

Yours sincerely,

The Director  
IMT Institute for Advanced Studies Lucca  
(Prof. Fabio Pammolli)