



Information Society
Technologies



Structuring European Biomedical Informatics to Support Individualised Healthcare

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www.infobiomed.org

Project presentation

WP2 – Dissemination and Communication

Deliverable D1

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Fernando Martín (ISCIII)	04/05/04	v1.1	Internal review
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Francisco Javier Vicente, Isabel Hermosilla (ISCIII)	03/06/04	v1.4	Final Draft

DEFINITIONS

- Partners of the INFOBIOMED Consortium are referred to herein according to the following codes:

FIMIM – Fundació IMIM (Spain) – Co-ordinator

IMIM – Municipal Institute of Health Care (Spain) – Contractor

ISCII – Institute of Health Carlos III (Spain) – Contractor

KI – Karolinska Institute (Sweden) – Contractor

UEDIN – University of Edinburgh (UK) – Contractor

CUSTODIX – CUSTODIX nv (Belgium) – Contractor

UPM – Polytechnical University of Madrid (Spain) – Contractor

UAVR – University of Aveiro - IEETA (Portugal) – Contractor

FORTH – Foundation for Research and Technology (Greece) – Contractor

FUNEN – Danish Centre for Health Telematics (Denmark) – Contractor

INFORMA – Informa S.r.l. (Italy) – Contractor

HHUD – Heinrich-Heine-Universität Düsseldorf (Germany) – Contractor


MI-EMC – Department of Medical Informatics, Erasmus University Medical Centre Rotterdam (The Netherlands) – Contractor

HNPCC – The Danish HNPCC-register, Hvidovre Hospital (Denmark) – Contractor

ACTA – Academisch Centrum Tandheelkunde Amsterdam (The Netherlands) – Contractor

AZ – AstraZeneca Research and Development Mölndal (Sweden) – Contractor

- Network:** The INFOBIOMED network as defined by contract IST-2002-507585.
- Work plan:** Schedule of tasks, deliverables, efforts, dates and responsibilities corresponding to the work to be carried out for the INFOBIOMED network, as specified in Annex I to contract IST-2002-507585.
- Consortium:** The INFOBIOMED Consortium, conformed by the above-mentioned organisations.

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1. INTRODUCTION

The EC-funded BIOINFOMED Study (EC-IST 2001-35024) carried out a prospective analysis of the relationships and synergy between Bioinformatics (BI) and Medical Informatics (MI). The study concludes that there is a great potential for synergy between both disciplines with a view on continuity and individualisation of healthcare, so that the benefits of the human genome elucidation can reach the population, but that a collaborative effort between the two disciplines is needed to bridge the current gap between them. Biomedical Informatics (BMI) is the emerging discipline that aims to bring these two worlds together so that the discovery and creation of novel diagnostic and therapeutic methods is fostered.

The INFOBIOMED network of excellence aims to set a durable structure for the described collaborative approach at a European level, mobilising the critical mass of resources necessary for enabling the collaborative approach that supports the consolidation of BMI as a crucial scientific discipline for future healthcare.

The specific objectives of INFOBIOMED are:

1. To enable **systematic progress in clinical and genetic data interoperability and integration.**
2. To advance the **exchange and interfacing of methods, tools and technologies** used in both MI and BI.
3. To enable **pilot applications in particular fields** that demonstrate the benefits of a synergetic approach in BMI.
4. To **create a European BMI community** that extends beyond the proposed core network to serve as an open forum for dialogue between the actors involved.
5. To **widely spread the knowledge** acquired and developed in the framework of the network to the scientific community, healthcare professionals, citizens, industry, authorities and other stakeholders.

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6. To enable a **robust framework for education in BMI**, as well as training and mobility of involved researchers that allows for the creation of a solid European BMI research capacity.

7. To create a **long-lasting, self-sustainable structure** in the European BMI field.

D1 – The Dissemination and Communication work package aims to create a common tool to allow communication of the network objectives and activities to external scientists and other stakeholders. External communication and dissemination are key activities for the network success. They will promote and spread the knowledge about BMI generated by the network to relevant target groups, such as scientists, healthcare professionals, authorities and citizens (objective 5 mentioned here above). Communication and dissemination are crucial in order to foster the creation of a durable European BMI scientific community (objectives 4 and 7).

Several activities and work packages have been identified in the Description of Work for the INFOBIOMED project as necessary to fulfil these objectives. Therefore to support these activities, the INFOBIOMED website has been created as the main tool for presenting the project to the outside community, whether scientific or not. The site was launched in March 2004. It has to be noted that the INFOBIOMED website will also serve as a European Biomedical Informatics Gateway for the BMI community by providing a central repository of reference materials and a notice board for announcing BMI events worldwide.

Finally, additional materials will be developed during the duration of the project to support the presentation of the INFOBIOMED objectives and work, such as brochures or press releases. These will be complementary to the website, and available for download from the website.

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2. THE INFOBIOMED LOGO

One of the first steps taken by the INFOBIOMED Consortium to promote and raise awareness of its existence was the professional design of a logo, to represent the network. It is thought that a well designed logo will provide the network from the beginning with a “corporate” image, thus allowing for more visibility and homogeneity in all the network activities, especially when interacting with external parties. FIMIM initiated the design and several options were submitted to the Consortium.




Figure 1: INFOBIOMED logo

Feedback and suggestions from all the partners were thought and led to the selection of the logo picture above.

The aim of the design is twofold:

- a) It emphasizes the union in the word “BIOMED” in the area of informatics.
- b) The three circles symbolise the three main disciplines involved: Medical Informatics, Bioinformatics and Information Technologies, and how their synergy and progress enhance the discipline of biomedical informatics, shown in the enlargement of the circles as they go up.

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3. THE INFOBIOMED WEBSITE

The following two domains have been registered for the use of the INFOBIOMED Consortium:

www.infobiomed.org


www.infobiomed.net

The web site is managed and hosted by the FIMIM (project coordinators).

3.1 Content Organization

The INFOBIOMED website intends to be the central location where comprehensive information about INFOBIOMED and Biomedical Informatics can be found. The website contains the following levels of information:

- a) **Private information:** a private zone has been set up to allow partners to share internal documents and information. Access to this section is restricted to project partners only.
- b) **Public information:** the information available to the public can be divided in two categories:
 - i. **INFOBIOMED:** Information about INFOBIOMED is accessed mainly through the left hand-side menu and includes the sections described below:
 - The **Project Presentation** section contains a short presentation of the network, the specific seven objectives of INFOBIOMED and background information explaining the genesis of this Network of Excellence (essentially the BIOINFOMED White Paper entitled “Synergy between medical informatics and bioinformatics: facilitating genomic medicine for healthcare”).
 - The **Partners** section gives information about the 17 partners taking part in this European initiative. The information is presented in a table divided into the following columns: partner logo, partner name, acronym, URL of their website and the specific department within the partner institution.
 - The **Project Activities** section follows the work package structure detailed in the Description of Work deliverable. It has a separate subsection for each functional work package, i.e. Dissemination & Communication, Training &

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Mobility, Data Interoperability & Management, Methods, Technologies & Tools and Pilot Applications.


- The Contact Information section provides the contact details for the project manager (FIMIM) and scientific co-ordinator IMIM.
- ii. **European Biomedical Informatics Gateway:** Entry to this portal is available from the home page. It provides a list of links to the main events related to Biomedical Informatics in Europe and worldwide. It also intends to be a repository of educational resources containing both background information as well as the latest developments on Biomedical Informatics.

The information currently available in the INFOBIOMED website is attached as annex 1 to this Deliverable.

3.2 Description of the website format and functionality

The website is the main tool for the presentation of the network. Its address, www.infobiomed.org or www.infobiomed.net is to be used in all dissemination activities done by the Network throughout the lifetime of the project. The website is expected to outlive the INFOBIOMED project by becoming the chosen reference website by the wider community created by this project and also by being the European gateway for Biomedical Informatics.

The home page of the website is shown below in Figure 2:

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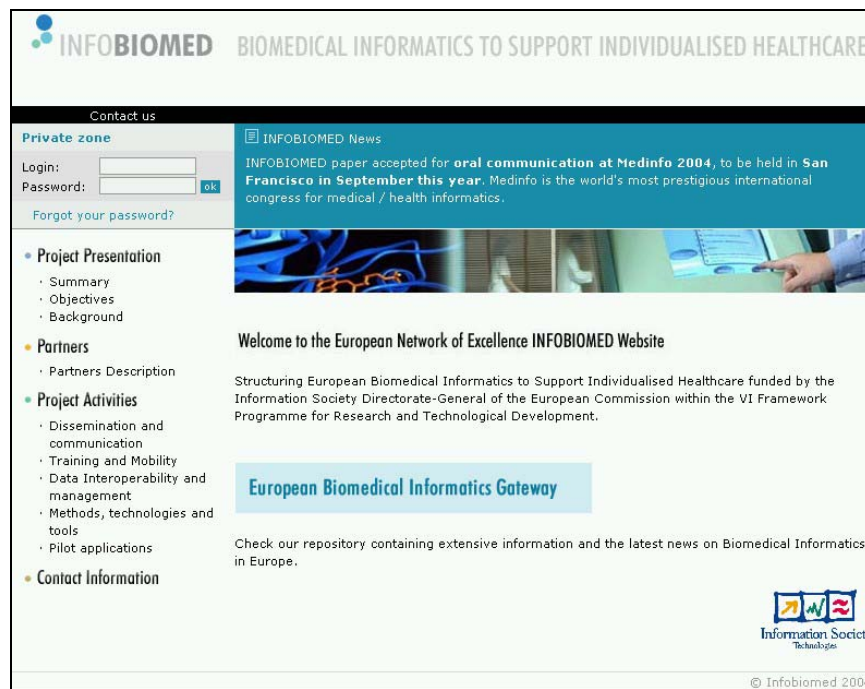


Figure 2: The INFOBIOMED home page

Below the title a black strip features a “Contact us” link leading to the “Contact Information” section previously described. In subsequent pages the “Home” link leads to the main entry page shown above. The main screen of the website is divided into three frames clearly differentiated.

The website is best displayed by MS Explorer 5.x or higher, with a screen resolution of 800 x 600 pixels. When the information does not fit in a single screen, a scroll bar will appear to allow for the information to be viewed in its completeness. The content of each frame can be printed by selecting the frame by clicking on it before choosing the print option from the menu. The printed page includes headings and footnotes.

3.3 Description of the Frames

The upper frame contains the Private Zone and the INFOBIOMED News in two different columns as shown in (Figure 3).


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Figure 3: The INFOBIOMED private zone and news banner


On the left hand side the restricted access section of the website is password protected and requires a partner login. This intranet, used to disseminate information amongst the consortium partners, houses all the minutes, documents in progress and final versions of reports as well as relevant announcements. A section reserved for the management of partners contact details will be added.

A forgotten password can be recovered by emailing the web master. A link marked 'Forgot your password?' is provided to that effect.

On the right hand side, a banner displays the INFOBIOMED related events and announcements by scrolling through the various items. More information about each individual news item can be obtained in a section devoted to these events by following the links provided.

The remaining part of the screen is divided into two frames. The navigation frame on the left hand side provides links to the four principal sections:

- a. The **Project Presentation** section includes a brief description of INFOBIOMED, divided into three parts: the summary, the seven specific objectives and the background, as shown in Figure 4.

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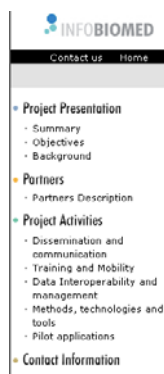


Figure 4: The navigation frame

- b. The **Partners** section includes information about the 17 partners involved in this European initiative. The information is presented in a table divided into five columns, the partner logo, the partner name, acronym, URL of their website and the actual department within the partner institution participating in the project, as shown in Figure 5. Following a partner URL will open a new window, keeping the INFOBIOMED website open on the background.

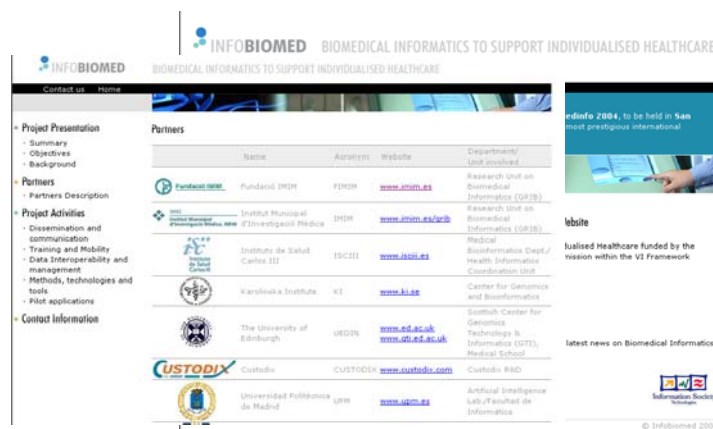



Figure 5: Partners information section

- c. The **Project Activities** section gives access to the five content oriented work packages into which the project is divided:
- i. Dissemination and communication
 - ii. Training and mobility

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- iii. Data interoperability and management
- iv. Methods, technologies and tools
- v. Pilot applications

The **dissemination and communication** subsection contains the press releases and details about dissemination activities that are already in progress. These are mainly papers sent to International conferences. Links to conferences official sites are provided. Two press releases are available one targeted at the scientific community and the other at other stakeholders.

Both documents include the key messages and concepts that INFOBIOMED wants to transmit to these external parties. Both documents can be downloaded in PDF format.


Currently, the website only contains a brief explanation of the work planned in the other work packages.

It is expected that the Project Activities section will progressively include more information as the network progresses and the work plan milestones are reached.

- d. The **Contact Information** section lists the contact details of the central points of contact for the network. This is pictured in Figure 6.



Figure 6: The Contact Information section

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Selecting a link from the navigation menu displays the relevant page in the main frame. The initial screen welcomes users to the website, shows the logo and link to the EU programme funding the Network, Information Society Technologies and contains the banner giving access the European Biomedical Informatics Gateway section as displayed in Figure 7.

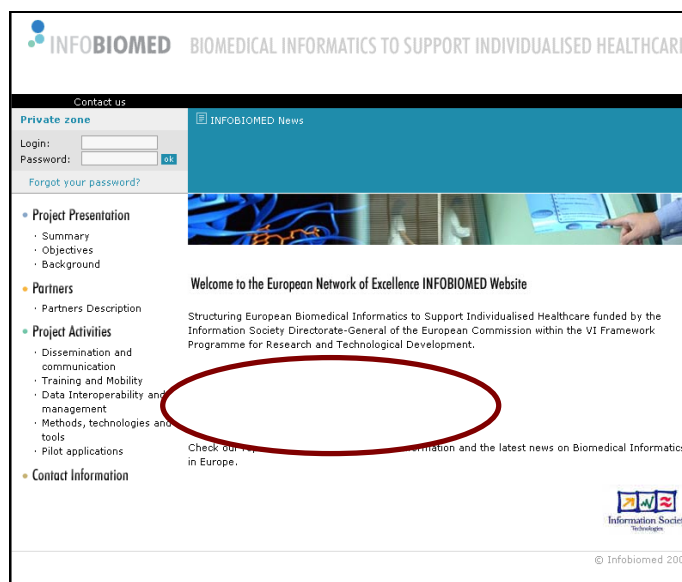



Figure 7: The European Biomedical Informatics Gateway banner

This portal website is structured in a similar fashion to the INFOBIOMED site but holds information on Biomedical Informatics in general rather than specific to INFOBIOMED. The site is divided in two sections reflecting the aim of this gateway: “Events and announcements” which represents all the relevant events relating to Biomedical Informatics, and “Repository” which contains background information and references, as shown in Figure 8 below:

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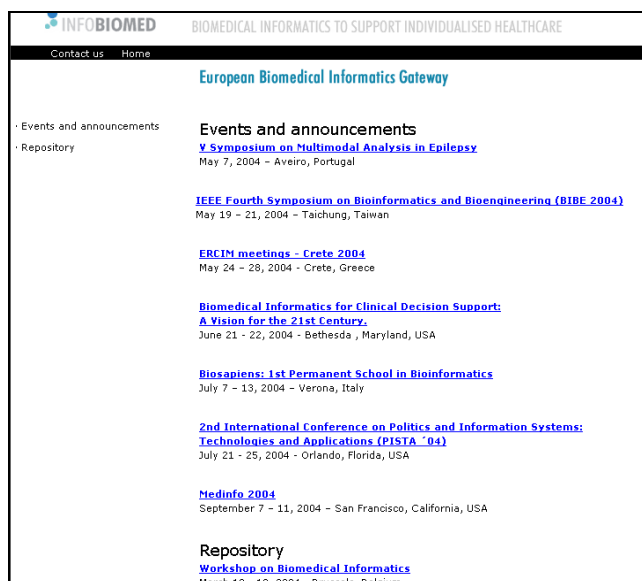



Figure 8: European Biomedical Informatics Gateway page


Each event is displayed as a link to the official site for that event.

However, further developments are planned for this gateway in order to allow for information to be browsed and searched more efficiently. The final version will be accessible through a web interface. The user will be able to select information relating to specific areas of interest as well as organizations. This information will be provided thanks to a database developed by the Consortium that will store data gathered from web questionnaires filled by willing organizations. It will be possible to combine searches allowing for higher degrees of complexity in the queries.

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4. THE INFOBIOMED PRESS RELEASES

The two press releases developed by the Consortium to present the project are accessible through the website in PDF format. They are aimed respectively at the scientific community and other stakeholders. Both documents emphasize the key concepts that INFOBIOMED wants to transmit to these interested parties. The main difference between the two documents is that one uses more scientific language while the other uses layman’s terms. The press release aimed at the scientific community also includes a brief description of the scientific WP 4, 5 and 6. Both press releases are enclosed as annexes 2 and 3 to this Deliverable.

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5. Annexes

Annex 1: information currently available in the INFOBIOMED website.

Private zone:

- Login and password
- Forgot your password?

INFOBIOMED News

Menu frame:

- Project presentation:
 - Summary


The EC-funded BIOINFOMED Study (EC-IST 2001-35024) has recently carried out a prospective analysis of the relationships and synergy between Bioinformatics (BI) and Medical Informatics (MI). The study concludes that there is a great potential for synergy between both disciplines with a view on continuity and individualisation of healthcare, so that the benefits of the human genome elucidation can reach the population, but that a collaborative effort between the two disciplines is needed to bridge the current gap between them. Biomedical Informatics (BMI) is the emerging discipline that aims to put these two worlds together so that the discovery and creation of novel diagnostic and therapeutic methods is fostered.

The INFOBIOMED network aims to set a durable structure for the described collaborative approach at a European level, mobilising the critical mass of resources necessary for enabling the collaborative approach that supports the consolidation of BMI as a crucial scientific discipline for future healthcare.

- Objectives

The specific objectives of INFOBIOMED are:

1. To enable **systematic progress in clinical and genetic data interoperability and integration.**
2. To advance the **exchange and interfacing of methods, tools and technologies** used in both MI and BI.

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3. To enable **pilot applications in particular fields** that demonstrate the benefits of a synergetic approach in BMI.
4. To **create a European BMI community** that extends beyond the proposed core network to serve as an open forum for dialogue between the actors involved.
5. To **widely spread the knowledge** acquired and developed in the framework of the network to the scientific community, healthcare professionals, citizens, industry, authorities and other stakeholders.
6. To enable a **robust framework for education in BMI**, as well as training and mobility of involved researchers that allows for the creation of a solid European BMI research capacity.
7. To create a **long-lasting, self-sustainable structure** in the European BMI field.


○ Background

The idea of this project stems from the European [BIOINFOMED](#) study, which was coordinated by the Institute of Health Carlos III, Madrid, Spain. This project carried out a prospective analysis of the relationships and synergy between Bioinformatics and Medical Informatics. The results of BIOINFOMED are reflected in the [White Paper](#) of the project, including a detailed R&D agenda for the advancement of BMI.


● Partners:

○ Partners description

Name	Acronym	Website	Department/ Unit involved
 Fundació IMIM	FIMIM	www.imim.es	Research Unit on Biomedical Informatics (GRIB)

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 IMAS Institut Municipal d'Investigació Mèdica. IMIM	Institut Municipal d'Investigació Mèdica	IMIM	www.imim.es/grib	Research Unit on Biomedical Informatics (GRIB)
 Instituto de Salud Carlos III	Instituto de Salud Carlos III	ISCIII	www.isciii.es	Medical Bioinformatics Dept./ Health Informatics Coordination Unit
 Karolinska Institute	Karolinska Institute	KI	www.ki.se	Center for Genomics and Bioinformatics
 The University of Edinburgh	The University of Edinburgh	UEDIN	www.ed.ac.uk www.gti.ed.ac.uk	Scottish Center for Genomics Technology & Informatics (GTI), Medical School
 Custodix	Custodix	CUSTODIX	www.custodix.com	Custodix R&D
 Universidad Politécnica de Madrid	Universidad Politécnica de Madrid	UPM	www.upm.es	Artificial Intelligence Lab./Facultad de Informática
 Universidade de Aveiro	Universidade de Aveiro	UAVR	www.ieeta.pt	IEETA
 Foundation for Research and Technology-Hellas	Foundation for Research and Technology-Hellas	FORTH ICS	www.forth.gr www.ics.forth.gr	Institute of Computer Science (ICS) / Center for Medical Informatics & Health Telematics Applications / Bioinformatics unit
 Danish Centre for Health Telematics	Danish Centre for Health Telematics	FUNEN	www.cfst.dk	Danish Centre for Health Telematics
 Informa	Informa	INFORMA	www.informacro.info	Informa R&D
 Heinrich-Heine-Universität Düsseldorf	Heinrich-Heine-Universität Düsseldorf	HHUD	www.uni-duesseldorf.de	Coordination Centre for Clinical Trials

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Erasmus MC-University Medical Center Rotterdam

MI-EMC

www.erasmusmc.nl

Department of Medical Informatics



Hvidovre Hospital

HNPCC

www.hnpcc.dk

HNPCC- register

ACTA



Vereniging voor Christelijk Wetenschappelijk Onderwijs

VU

www.acta.nl

Department of Periodontology / Laboratory of Immunogenetics, VU University Medical Center



AstraZeneca Research and Development

AZ

www.astrazeneca.com

Safety Assessment

ACTA



Universiteit van Amsterdam


UVA

www.acta.nl

Department of Periodontology / Laboratory of Immunogenetics

- Project activities:
 - Dissemination and communication:

This work package aims at designing and deploying the tools, platforms and action plans that will allow for optimal communication within the network and with external parties interested in BMI. The common tools and platforms developed will allow for efficient working procedures. External communication and dissemination are key activities for the network success, as they will promote spreading of the knowledge generated by the network about BMI to relevant target groups, such as scientists, healthcare professionals, authorities and citizens. Communication and dissemination are crucial in order to foster the creation of a durable European BMI scientific community.

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- INFOBIOMED press release to the scientific community
- INFOBIOMED press release to other stakeholders
- Dissemination activities


INFOBIOMED paper accepted for oral communication at the IEEE Fourth Symposium on Bioinformatics and Bioengineering (BIBE 2004). The conference will be held in Taiwan next 19-21 of May 2004.

INFOBIOMED paper accepted for oral communication at Medinfo 2004, to be held in San Francisco in September this year. Medinfo is the world's most prestigious international congress for medical / health informatics.

INFOBIOMED paper presented in oral communication at the EGGE First Conference, titled “Enabling Grids for E-science in Europe”, organised by the EGEE Consortium on 18 –22 of April 2004.

○ Training and mobility

The Training and Mobility work package constitutes an essential component of INFOBIOMED, as it has a direct impact on building a solid and durable scientific community gathering Biomedical Informatics (BMI) professionals at the European level. Training activities aim to allow BMI scientists to update their knowledge on the subject, to help other scientists working in Medical Informatics, Bioinformatics and other related fields to understand how they can enrich their research by taking advantage of BMI approaches, and to educate future BMI scientists and professionals. The mobility program aims to strengthen the complementarity among scientists and organizations and help to develop mutual specialisation. Mobility also promotes the joint use of research infrastructures and other integrative initiatives.

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- Data interoperability and management

In the post-genomic era, biomedical researchers and practitioners will need to manage larger amounts of data. This work package aims to thoroughly study data characteristics and knowledge representation systems, mainly ontologies, currently used in Medical Informatics (MI) and Bioinformatics (BI) and introducing new integrative approaches required to integrate clinical and genetic data.

For physicians, one of these important challenges for the future will be to use new diagnostic procedures based on gene expression profiling. For biologists, to discover relationships between genomic and proteomic information and physiopathological phenomena. Privacy and confidentiality of citizen data and patient records is of the outmost importance. Nevertheless, it is necessary to set up procedures in order to make it compatible with information linkage for research and healthcare purposes.

- Methods, technologies and tools

Wider and richer information sources will help researchers to carry out innovative projects and healthcare professionals and managers to improve their professional activity, but larger amounts and new structures of data will imply new methods to manage and analyse them. New technologies, methods and tools will have to be developed in order to better manage the data allowing the envisaged synergic flow of information between MI and BI, and extract relevant knowledge from the integrated data structure. A careful study of the current methods, tools and technologies in use in MI and BI will drive the integrative approaches needed.

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○ Pilot applications:

This work package aims to analyse the impact of BMI in specific fields (pharmainformatics, genomics and microbiology, genomics and chronic inflammation and genomics and cancer): what the impact of BMI will be in these specific fields and what are the requirements that these fields impose to BMI in order to be useful for their specific research problems.

The pilot applications work-package intends to approach the BMI concept from a vertical point of view (diversely from the horizontal approach of WP 4 and 5), in order to analyse the BMI contributions to specific problems and fields. The objective is to demonstrate the benefits of an integrative approach of BMI in state-of-the-art R&D projects.


Four pilot applications will be developed by INFOBIOMED:

▪ Pharmainformatics

This pilot application will carry out research on the mutual impact of BMI and pharmaceutical research. Research in this area will consider aspects as:

- Application of the computational genomics to the identification of potential drug targets.
- Structure-based computer-aided drug design.
- Virtual screening, including chemogenomics approaches
- Early in silico prediction of ADMET (Administration, Distribution, Metabolism, Excretion and Toxicity) properties.
- Computational support to pharmacogenomic and pharmacogenetic studies.

Integration of heterogeneous information (genomic, clinical, etc.) collected from large samples of subjects and the subsequent data mining as a promising way to generate useful knowledge for the drug discovery and development processes.

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- Genomics and microbiology


This pilot will deal with the study of the genetic polymorphisms in both the microbial pathogen and host and their impact on microbial virulence or host immune responses to infection. The elucidation of microbial pathogen genomes will contribute to the characterisation of genomic and phenotypic microbial diversity related to infectious diseases, will allow the rapid identification of microbial pathogens by means of genetic markers, and will shed light on the mechanisms of pathogenicity and antibiotic resistance.

- Genomics and chronic inflammation

There is a great need to gain more insight in the complexity of periodontitis, to design new treatment strategies and devise preventive measures. Periodontitis is an excellent model to study complex chronic inflammatory diseases because of its multifactorial etiology (genetics, bacteria, and environment), relative high prevalence and broad and easy access to diseased patients' and normal tissues, genomic DNA, and access to the history of infections and other relevant data through the patient records. The aim of this pilot is to investigate the genetic susceptibility to adult periodontitis. Existing data banks need integration, further genotyping support and a modern informatics approach for data analysis. We aim to apply biomedical informatics tools and methods to contribute to studies into the etiology of periodontitis, and also very importantly, to determine new classification systems.

- Genomics and colon cancer

This pilot will be based on the official Danish registry of HNPCC (Hereditary Non Polypose Colon Cancer). The HNPCC-Register has registered from 1991 epidemiological and molecular-genetic information on all Danish HNPCC-families in a PARADOX-database system and a

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corresponding pedigree-program. The Register identifies HNPCC-families and recommended screening, as do the other genetic departments in Denmark and all the data are collected in the database. The aim of this pilot is to obtain knowledge useful for the planning and organization of screening in families with a high-risk of developing CRC.

- Contact information:

For further information regarding the INFOBIOMED Network of Excellence, please contact the project Co-ordinator.

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