

UNITWIN/UNESCO Chairs Programme Progress report 2006-2007

«If this has not yet been done, please forward your progress report before
31 May 2007» to the Director, Division of Higher Education.

Period of activity:

2006-2007

Title of the UNESCO Chair or Network:

UNESCO CHAIR TELEMEDICINE

Report established by:

Prof.Dr.O.Ferrer-Roca,

Function / Title:

responsible UNESCO Chair Telemedicine 1999-2007

Full Professor in Pathology. Responsible of the Telemedicine Training at the University of La Laguna.
Canary Islands. Spain

To be sent by electronic mail to: unitwin@unesco.org

or to UNESCO, Division of Higher Education
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I. Address

	Address of the Host Institution	Address of the Coordinator
Name	Prof. Dr. O. Ferrer-Roca	Prof. Dr. O. Ferrer-Roca
Function/Title	Chair of Pathology	Chair of Pathology
University/Institution	University of La Laguna	University of La Laguna
Faculty/Department/Centre	Faculty of Medicine	Faculty of Medicine
P.O.Box	La Cuesta	La Cuesta
Street	La Laguna	La Laguna
Postal Code	38071	38071
City	Santa Cruz de Tenerife	Santa Cruz de Tenerife
Province	Canary Islands	Canary Islands
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Web Site	http://www.teide.net/catai	http://www.teide.net/catai

II. Available resources

Please specify for each item, when available, **total cost** and **funding sources**
(for guidelines see Annex 3)

1. Human resources

1. For the administration of the UNESCO Chair or Network

Partial time support Secretary	Macarena de Jonge
Partial time support Secretary	Noemi Pinto Rodríguez
Partial time support Secretary	Eva Olsen
Partial time support Secretary	Ana Reyes Leon
Partial time support Secretary	Ronda Tauman
Partial time support Secretary	Susan Martín Paddison
Partial time support Secretary	Francisco Viña Martín

2. For the teaching/training/research activities
Please specify number of full professors , researchers, visiting professors, lecturers, others
Prof. Dr. O. Ferrer-Roca

Informatics Engineering	Francisco Marcano Serrano
Computer Science	Pablo Pulido Lorenzo
Telecommunication Engineering	Álvaro Díaz-Cardama López
Physicist Science	Noelia de Armas Gutiérrez
Physicist Science	Elliezer Sepúlveda Hernández
Informatics Engineering	Luis Alejandro Brito Mesa

3. For the information and documentation activities:

- Partial time support Lawyer: Margarita Suarez Delgado
4. For other activities: The international courses brought to teaching and training a total of 40 professors coming from European, African and Ibero-American countries (Greece, Germany, Lithuania, Spain, Uganda, Argentina, Venezuela).

2. Material resources

1. For the administrative work: Computers fax machines, xerocopy machines, printer, and storage systems.
2. For the teaching/training/research activities: Videoconference, workstations, ultrasounds, video-edition, projector, Book edition, CD-edition, Proceedings editions, e-learning, Digital Fingerprint control systems, Breeze server.
3. For the information and documentation activities: Web site, Posters, brochures, Proceedings, Book editions, CD-edition
4. For other activities (*Please specify*): Videoconferencing, 3D-virtual reality, Distant control.

III. Activities

Please, provide information on items 1 to 7 for each activity, when available, and specify:

- Target groups, in accordance with Annex 1
- Geographical coverage, in accordance with Annex 2
- Funding sources, in accordance with Annex 3.

1. Education/Training/Research

- Title and expected results for each course, workshop,...
- See joined memorandum and programs of the Winter Course of the CATAI
- Duration: 2weeks.
 - Target groups: doctors, nurses, health-care providers, NGO's
 - Partnership (*please specify the name of the Institution, city, country*): Universities Trier-DE, Postdamm-DE, Humboldt Univ. Berlin-DE, Makerere-Uganda, Entre-Rios-Argentina, Mexico-Mexico, Zulia-Venezuela, Simon Bolivar- Venezuela; Athens Univ. of Economics and Business-GR, Kaunas University of Lithuania, Rovira y Virgili-Spain; Politecnica of Barcelona-Spain, Almeria-Spain; University Perm-Russia, Univ Moscu-Russia, New Delhi-India, Istambul-Turkey, El Cairo- Egypt, Queensland- Australia.
 - Geographical coverage for partners and participants: Europe-Africa-South & North America.
 - Funding sources: CATAI founding. Telefónica SL.
 - Outputs: Please specify number of doctoral students: 150-200 students per year. For the publications, complete form of Annex 4, and Annex 5 for the multimedia material.

2. Conferences/Congresses/Meetings

- Title and expected results for each conference, meeting...:
Always in Telemedicine. Expected increase of knowledge and training of how to handle medicine at distance for people and areas underserved or with health care constrains availability.
- Dates and place: UNESCO, Valencia (8-10 february 06); Tenerife-Winter Course (05th-18th March 07); FEHAD, Barcelona (13th -17th June 06); AMDO 2006, Palma Mallorca (11th-17th July 06); Medicina Marítima, Tenerife (27th - 31st October 06); Videomed (20th - 25th November 06); Telemedicine, Perm-Russia (29th January - 3rd February 07);
- Partnership (*please specify: Name of the Institution, City, Country*): *see joined programs plus Mulago Hospital-Uganda; Roche Research Center, Univ Perm-Russia, Casablanca-Marrocco.*
- Participants (*number*): 100 up to 1000 depending of the type of meeting
- Geographical coverage for participants and partners: Europe, Africa, South-America and Asia
- Funding sources: CATAI funding. Telefonica SL.
- Outputs: Please complete Annex 1 for the publications and Annex 2 for the multimedia material.
- Actually **"Telemedicine Master"** at distance, with the Universities of Makere-Uganda, Beijing-China, New Delhi-India, Istambul-Turkey, El Cairo- Egypt, Queensland- Australia, Casablanca- Marrocco; Albania.

3. Missions / Travels abroad

Destination: University La Laguna-UNESCO Chair Telemedicine.
From : Entre Rios-Argentina, Makerere-Uganda and Caracas-Venezuela
Purpose: Students training in telemedicine
Duration: from 1 to 2 month
Funding source: University of La Laguna/Telefónica SL / Catai fundings.
Outputs: training of students to provide telemedicine in underserved areas.

4. Visiting professors / Fellowships

Number: (6)

Duration: 1-2 month

University of origin: U.-Caracas-Venezuela (1), U. Entre-Ríos - Argentina (1),
U. Makerere - Uganda (1).

Funding sources: University of La Laguna, CATAI fundings, Telefonica SL.

5. Information and documentation activities

1. CATAI 2007, Editor: Prof.Dr.O.Ferrer-Roca. CATAI editions 2006. Tenerife. ISBN 84-611-4628-X
2. European Master of Telemedicine and Bioengineering applied to Telemedicine. DVD. CATAI Editions. 2005. ISBN 84-609-2162-X
3. European Master of Telemedicine and Bioengineering applied to Telemedicine, Volume I. CATAI Editions 2005. ISBN 84-609-2163-8
4. European Master of Telemedicine and Bioengineering applied to Telemedicine, Volume II. CATAI Editions 06. ISBN 84-609-6488-4
5. European Master of Telemedicine and Bioengineering applied to Telemedicine, Volume III. CATAI Editions 06. ISBN 84-611-3589-X
6. CATAI Telemedicine CD, CATAI Editions. ISBN 84-923357-2-6 Dep.Leg. nº M-3337-1999; 1999-2006

6. Others

Written agreements with Universities

- 6.1 Preparing Written agreements with the Universities of Santiago de Compostella, University Politecnica of Madrid, University Alicante to provide distant teaching for developing areas.
- 6.2 Agreedments of the students interchange in the field of Telemedicine and for third cycle students with the Universities of Postdam-DE (6 Students), Charite-Berlin-DE (6 Students) and Univ. Udine-IT (6-students) as Erasmus students, plus 1 or 2 professors from each University.

Training Books donations

- 6.3 Donations of the vol. II of the European Master of Telemedicine and Bioengineering applied to Telemedicine. to the Universities of Entre-Rios (5), Makerere (6), Zulia (5), Mexico (1), Greece (5).
- 6.4 Donations of the vol. III of the European Master of Telemedicine and Bioengineering applied to Telemedicine. to the Universities of Entre-Rios (5), Makerere (6), Caracas (5), Greece (5).
- 6.5 Donation 150 European Telemedicine Glossary 5th Edition to the attendants of the XIV Winter Course of the CATAI. Tenerife. Spain.

Computer donations

- 6.6 Donations of 2 computers, bufflers and spare peaces of another computer to the University of Makere in Uganda.

IV. Impact

Please describe shortly (one page maximum) the impact of the mentioned activities on the human, social, economical and cultural development at national, regional or international level.

The activity carried out in Uganda, showed that the local doctors are able to take now their own solutions and built a web site to train and support at abroad doctors, nurses and people in general is of high importance. <http://med.mak.ac.ug/9/department.htm> . Their initiatives with the use of VHF in walky-talkies to support midwives, has decreased the mortality of new-born babies by 30%.

Similarly the cooperation with the Simon Bolivar University in Caracas Venezuela, has broad efficiency in the query and access to the Telemedicine information.

One of the principle obstacles in the wide use of Telemedicine is the lack of specific training and qualifications in the health care environment (doctors, nurses, paramedics, managers, NGO's) as well as related areas from which they require support (computer science, telecommunications).

V. Forthcoming activities

1. XIV SUMMER COURSE OF THE CATAI – September 2007 – to be determined
2. XVI WINTER COURSE OF THE CATAI – 5th – 18th March 2008 – Tenerife - Spain
3. STUDENTS EXCHANGE TO TENERIFE
4. STUDENTS TRAINING IN TENERIFE
5. UGANDA DOCTORS TRAINING IN EUROPE
6. SCHOLARSHIPS FOR IBEROAMERICAN BIOENGINEERS
7. EU to IBEROAMERICA INTERCHANGE FOR SUPPORT.
8. TELEMEDICINE MASTER FOR DEVELOPING COUNTRIES
9. European convergence inter-university master in Telemedicine and Bioengineering applied to telemedicine.
10. Presentation of the vol IV of the DVD for distant training in Telemedicine.
11. New edition of the biannual Telemedicine and Bioengineering master of the ULL.
12. Implementation of the mobile-phone intelligent diabetes control.

VI. Development prospects

The activities of the Chair started on 1999 has expanded during the period 2006-2007 to:

1. - Lithuania.
2. - Albania

Target groups

Undergraduate students	YES
Graduate students	YES
Postgraduate students	YES
Academics	YES
Public administrators	YES
Employees from industry, or other private organizations (<i>please, specify</i>)	YES: NGO's
Teachers from primary education	NO
Teachers from secondary education	NO
Teachers from technical and vocational education	YES
Teachers from adult education	YES
Others groups (<i>Please specify</i>)	YES: VOLUNTIERS

Geographical Coverage

- **National**

Spain: Canary Islands (7 Islands)

- **Regional**

Please specify countries and regions

- Africa: Nairobi-Kenya, Makere-Uganda, Marrocco, Argelia.
- Arab States: Israel, Turkey-Istambul,
- Asia/ Pacific: Kazakhstan, Israel-Tel Aviv, New Delhi-India, China-Beijing
- Eastern and Central Europe: Sofia-Bulgaria, Rumania, Russia-Perm & Moscow-Albania – Lithuania.
- Australia: Queensland University.
- Western Europe and North America: Germany-Regensburg/Postdamm/Berlin, Italy-Udine/Milan/Rome, Greece-Athens and Aegean islands, Austria-Tyrol, France-Strasbourg/Paris, Lachen-Switzerland, Oxford-UK.
- Latin-America: Argentina-Entre-Ríos, Venezuela-Maracaibo, Venezuela-Caracas, Panamá, Cuba-La Habana, México.

- **Interregional**

Please specify regions

Funding sources

Funding source	Type of Organization / Institution	Period	Amount US\$
UNESCO Contribution		2006/07	0
Other contributions: <i>Please specify, for each contribution:</i> <i>Institution, City, Country</i>	Host Institution	2006/07	10000
	Partner university/ institution	2006/07	15000
	Governmental body		
	Other public institution <i>Please specify</i>		
	UN Agencies IGO's	2006/07	20000
NGO's: CATAI Industry Other private sources <i>Telefónica SL -Spain</i>	2006/07	55000	
TOTAL		2006/07	100000

Outputs

Form 1: Publication

Title of activity: STANDARDS IN TELEMEDICINE.

Title: Standards in Telemedicine. CATAI 2007

Publisher(s): CATAI 2006 Ed. ISBN 84-611-4628-X Canary Islands CATAI- Tenerife-Spain

Year: 2006

Number of pages: 203

Type of document/material:

- Book
- Periodical
- Others (*specify, please*) X - Proceedings XV Winter Course CATAI.

Teaching/learning material X

Language(s): English, Spanish

Main keywords (4 or 5): Telemedicine, Information Society, Health Care, Ambience Intelligence.

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

The Telemedicine has passed the consolidation period, since there are standards for any of the existing activities, and have to put into practice in order to assure quality of care. At the present moment the 13 items of the Telemedicine body of knowledge contain established medical informatics and engineering standards capable of assuring connectivity, security and quality of care.

Title: Estándares en Telemedicine

Publisher(s): In "Standards in Telemedicine". CATAI Ed 2006 ISBN 84-611-4628-X Canary Islands.

Year: 2007

Number of pages: 12-21

Type of document/material:

- Book
- Periodical
- Others (*specify, please*) X - Article.

Teaching/learning material X

Language(s): English & Spanish.

Main keywords (4 or 5): Standards, Quality assurance.

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

The use of standards in Telemedicine assure several principles such as: operability, portability and mobility quality, security and confidence. The technology and applications are reaching the maturity plateau where standards for any application are available. In this paper we will analyze the most generic ones, although for each specific application there are working groups in the standardization committees taking care of them

Title of activity: p-HEALTH.

Title: Virtual Personalized Medicine (p-Health). CATAI 2006

Publisher(s): CATAI Ed. 2005. ISBN: 84-609-8648-9- Tenerife -Spain

Year: 2005

Number of pages: 254

Type of document/material:

- Book
- Periodical
- Others (*specify, please*) X- Proceedings XIV Winter Course CATAI.

Teaching/learning material

Language(s): English

Main keywords (4 or 5): Virtual personalized Medicine, Telemedicine, Information Society, Health Care

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

El XIV Curso de Invierno del CATAI pretende tratar con rigor los aspectos de Medicina presencial virtual, es decir realizar a distancia la labor medica como si se estuviera en presencia fisica junto al enfermo con las garantias de calidad asistencial, eficiencia y reducci3n de costos e introduciendo los aspectos de inteligencia artificial. En este campo se necesita una gran informacion relacionada con los tipos de im3genes y la calidad de las mismas, asi como en el dimensionamiento de los distintos tipos de redes disponibles, incluidas las PAN (personal area network) y las BANs (Body Area network)

Ya nadie cuestiona el papel de la Telemedicina y el esfuerzo ha de realizarse en como entrenar a los facultativos para que la medicina que se ofrece a distancia tenga la misma o superior calidad. Para ello los individuos involucrados en la IHE (Empresa Sanitaria Integrada) han de formarse en el denominado "Cuerpo de Conocimiento de la Telemedicina" recogido en el unico libro de texto traducido en 3 idiomas y pendiente de traduccion en un cuarto idioma.

Como se presenta a los asistentes al curso mucho han avanzado la mayoria de las comunidades autonomas españolas en la integracion de la telemedicina y las herramientas de la sociedad de la informacion pero todavia que numerosos avances en telemedicina no integrados y sobretodo criterios de control de calidad y legalidad no asumidos por las autonomias.

Los estudiantes se enfrentan a los nuevos retos realizando practicas de laboratorio con la totalidad de los aspectos que cubren teoricamente.

Title of activity: REMOTE IMAGE ACCESS

Title: Stitching y visualizaci3n remota de im3genes mediante JPEG2000 y JPIP

Publisher(s): In Standards in Telemedicine CATAI Ed. ISBN 84-611-4628-X

Year: 2007

Number of pages: 106-111

Type of document/material:

- Book
- Periodical
- Others (*specify, please*) X- Article.

Teaching/learning material X

Language(s): English & Spanish.

Main keywords (4 or 5): JPEG2000, JPIP, stitching

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

En el presente artículo se analiza el estándar JPEG2000 para el *stitching* de imágenes y su visualización remota, presentando todas las interesantes características aprovechables de este estándar para tal fin: i) uno de los sistemas de compresión de imágenes más eficientes y flexibles de los existentes en la actualidad, ii) una estructuración interna y organización del *bit-stream* comprimido que facilita y mejora el proceso de unión de imágenes, y iii) un sistema de transmisión de imágenes, centrado principalmente en el protocolo JPIP, altamente eficiente

Title: Stitching and remote browsing of images using JPEG2000 y JPIP

Publisher(s): CATAI Ed. ISBN 84-611-4628-X

Year: 2007

Number of pages: 112-116

Type of document/material:

- Book
- Periodical X
- Others (*specify, please*)

Teaching/learning material

Language(s): English & Spanish.

Main keywords (4 or 5): JPEG2000, JPIP, stitching

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

In the present paper the JPEG2000 standard is analyzed for stitching images and its remote visualization, showing all the interesting characteristics of this standard for such aim: i) currently, one of the most efficient and flexible still image compression systems, ii) an internal structuring and organization of the compressed bit-stream that facilitates and improves the process of union of images, and iii) a system for transmission of images, mainly centered in the JPIP protocol, highly efficient.

Title of activity: TELEPATHOLOGY

Title: Automatic Stitching of Pathology Images

Publisher(s): In Standards in Telemedicine CATAI Ed. ISBN 84-611-4628-X

Year: 2006

Number of pages: 167-173

Type of document/material:

- Book
- Periodical
- Others (*specify, please*) X- Article.

Teaching/learning material X

Language(s): English & Spanish.

Main keywords (4 or 5): Pathology Images, Automatic Image Stitching, Virtual Slides, JPEG2000, JPIP, DICOM

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

Techniques to build virtual slides, have not been widely tested for diagnostic purposes. In the present paper the technology linked with image stitching is explain and a solution of stitch images on the wavelet domain is explain

Title: SSVS – The small size virtual specimen.

Publisher(s): IEEE Transactions for Medical Images

Year: 2007

Number of pages: 15

Type of document/material:

- Book
- Periodical
- Others (*specify, please*) X- Article.

Teaching/learning material

Language(s): English & Spanish.

Main keywords (4 or 5): Virtual slide. Digital zooming. Telepathology. Internet Image Protocol IIP, Image sharing.

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

Virtual specimen in pathology improve slide handling, consultation, storage and retrieval. The inconvenience being the high price of the acquisition devices working at 40x-60x magnification and generating huge files of several Gigabytes.

The paper describes an equivalent system based on 2x-4x acquisitions using high spatial resolution cameras that allow digital zoom. It is a low cost device building virtual slides of small size. The system is easy to integrate in diagnostic routine pathology diagnosis improving slide storage, sharing and navigation.

The paper carried out a quality analysis to prove reliability and acceptability of the system. Assessment was carried out with 72 microscopic images of 24 bits. Images were sharpened with the novel ZoomFocus © technique, after a 10:1 compression, were stiked together into a Small Size Virtual Speciment© (SSVS). They showed excellent subjective (Mean Opinion Score) and objective (PSNR or peak to peak signal to noise ratio) quality, particularly the JPEG2000 compressed image that supported digital zoom to 140 times the original image. The usefulness of software-guided hand-built SSVS technique derives from the extreme portability and low cost resulting in low size digital slide.

Title of activity: COLABORATIVE WORK

Title: Collaborative Systems for Telemedicine Applications

Publisher(s): In IEEE Computer Society

Year: 2007

Number of pages: 4

Type of document/material:

- Book
- Periodical
- Others (*specify, please*) X- Article.

Teaching/learning material

Language(s): English & Spanish.

Main keywords (4 or 5): Collaborative systems, Telemedicine, SSVS®, JPEG2000, image stitching

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

Use of collaborative tools are essential in health applications, specially telemedicine. This paper present the results of a huge-size image data collaborative system based on SSVS®, suitable for telepathology work that can be implemented in any system working with large images.

Quality, image stitching performance in the JPEG200 wavelet domain and image displaying performance were analyzed

Title of activity: BIOINGENEERING

Title: ICM en los entornos sanitarios

Publisher(s): In Standards in Telemedicine CATAI Ed. ISBN 84-611-4628-X

Year: 2006

Number of pages: 194-201

Type of document/material:

- Book
- Periodical
- Others (*specify, please*) X- Article.

Teaching/learning material X

Language(s): English & Spanish.

Main keywords (4 or 5): ICM, Interferencias, estandares

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

Los problemas de interferencias e interacciones de la mayoría de los sistemas de telemedicina han de tomarse en consideración a la hora de implementar las aplicaciones. En este artículo se listan los estándares y el control de interferencias de la banda ICM (Industrial-Científica y Médica).

Title of activity: RECETA ELECTRONICA

Title: Receta Electronica. Estandares de seguridad en la salud

Publisher(s): Telefonica. Sociedad de la Informacion . Tribuna

http://sociedaddelainformacion.telefonica.es/documentos/articulos/B_TRIB_Receta_Elect.pdf

Year: 2006

Number of pages: 1-14

Type of document/material:

- Book
- Periodical
- Others (*specify, please*) X- Article.

Teaching/learning material X

Language(s): English & Spanish.

Main keywords (4 or 5): Receta Electronica. Estandares seguridad

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

El demostrador de receta electrónica que se describe en este artículo es un modelo de infraestructura y gestión de accesos en sanidad electrónica. Para su diseño se han utilizado los estándares de informática médica y seguido la legislación vigente sobre seguridad y privacidad.

Outputs

Form 2: Multimedia material

Title of activity: TELEMEDICINE-CD

Title: CATAI Telemedicine-CD. ISBN 84-923357-2-6

Producer and/or distributor (*with address*): CATAI

Year: 1999-2006

Teaching/learning material X

Type of material:

- Video
- CD ROM X with videos
- Visioconference:
- Other type of material

(*Please specify*): _____

Duration: 643 MB

Format: Word, Html, /ppt, /mpeg

Language(s): English- Italian-Spanish

Main keywords (4 or 5): Telemedicine

SHORT ABSTRACT

(*Brief description of the content in English, French or Spanish*)

According to one of the numerous definitions of Telemedicine “providing medicine at a distance“, any doctor being trained in the use of some telematic devices could effort that practice. The reality is far from this because to assure a safe practice, people have to learn and bear a minimum understanding of a wide range of topics: from economics to telecommunications and from medicine to legal aspects. Technology learning is not limited to technology itself but linked to its social practical consequences in all their aspects. To guarantee that none of the aspects related with Telemedicine are missed, this minimum knowledge has to be fixed, organised and in some way standardized. The main purpose of this book is to structure the basic knowledge linked to teaching to provide or to practise telemedicine, as well as an overview of the technology developments linked to this new discipline. As expressed in the title (Handbook of Telemedicine), the book is precisely structured as a “handbook” whose main value is the joint opinion of all the participating authors of what are the learning requirements for anyone that would like to practice Telemedicine. It is not a full treatise nor a complete collection of all telemedicine applications or telemedicine basics. It was built with the aim of creating awareness to the academic aspects (technology development, telecommunications approach, law and regulations, medical practice) as well as to the minimum knowledge requirements to guarantee safe and appropriate medical practice. Nowadays this fact is enhanced by the evidence that welfare expenses cannot be endlessly increased, whilst an efficient health provision system in the context of the information society, will mark a new trend to configure health care practice in the next century. If training and teaching schemes are to cope with the demands of society it seems obvious that those carers and professions should consider structured and sufficient training in Telemedicine.

AIMS OF THE MULTIMEDIA CD-ROM

The present CD-ROM contains the Handbook of Telemedicine as a whole, internally structured in 12 Chapters and 13 Annexes (file *HANDBOOK.DOC*). Some of them are complemented with diverse multimedia material for training and teaching purposes. The handbook is presented in Word and Html formats (directory /*html*), while the multimedia material is located in the directories /*ppt* and /*mpeg*. The former are PowerPoint 97 presentations and the latter are video-clips on Mpeg format.

Title of activity: EU-MASTER OF TELEMEDICINE DVD

Title: EU-Master of Telemedicine and Bioengineering applied to Telemedicine

Producer and/or distributor (*with address*): CATAI Ed. ISBN 84-609-2162-X

Year: 2004-06

Teaching/learning material X

- Type of material:
- Video DVD with text & multimedia X
 - CD ROM
 - Visioconference:
 - Other type of material Other multimedia material
- (Please specify):_____

Duration: 2 GB
 Format: RM (real media)
 Language(s): English-Spanish
 Main keywords (4 or 5): Telemedicine

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

Generic name of the list of DVDs with multimedia material produced to train at distance on Telemedicine and Bioengineering applied to telemedicine any people interested. No requirements needed except a DVD reader in the computer.

Title: EU-Master of Telemedicine and Bioengineering applied to Telemedicine. Volume I.

Producer and/or distributor *(with address)*: CATAI Ed. ISBN 84-609-2163-8

Year: 2004-06

Teaching/learning material X

- Type of material:
- Video DVD with text & multimedia X
 - CD ROM
 - Visioconference:
 - Other type of material Other multimedia material
- (Please specify):_____

Duration: 2 GB
 Format: RM (real media); PDF; HTML
 Language(s): English-Spanish
 Main keywords (4 or 5): Telemedicine

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

Volume I of the multimedia material to train the people in Quality control and security in e-health. It include text, presentations and videos given by the more representatives professionals in the world in the topics of Minima requirements, Technical knowledge, Teleworking and teleteaching, Principal technical innovations, Telemetry, Nanotechnology, Quality control and assessment, Legal requirements, Security, Internet, Standards , Electronical Health Record.

Title: EU-Master of Telemedicine and Bioengineering applied to Telemedicine. Volume II.

Producer and/or distributor *(with address)*: CATAI Ed. ISBN 84-609-6488-4.

Year: 2005-07

Teaching/learning material X

- Type of material:
- Video DVD with text & multimedia X
 - CD ROM
 - Visioconference:
 - Other type of material Other multimedia material
- (Please specify):_____

Duration: 2 GB
 Format: RM (real media); PDF; HTML
 Language(s): English-Spanish

Main keywords (4 or 5): Telemedicine

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

Volume 2 of the multimedia material produced for distant training containing text, presentation and videos. Topics covered in this editions include Telemedicine applications, Minimal technical knowledge, Nanotechnology and new materials, Mobile and electronic learning, Digital signature, Security for health-care, Legal and liability issues, Artificial intelligent in the control of diseases, robotic surgery, ambience intelligence and virtual environment for disease control and treatment, telepresence.

Title: EU-Master of Telemedicine and Bioengineering applied to Telemedicine. Volume III.

Producer and/or distributor *(with address)*: CATAI Ed. ISBN: 84-611-3589-X.

Year: 2005-07

Teaching/learning material X

Type of material:

• Video DVD with text & multimedia X

• CD ROM

• Visioconference:

• Other type of material Other multimedia material

(Please specify): _____

Duration: 2 GB

Format: RM (real media); PDF; HTML

Language(s): English-Spanish

Main keywords (4 or 5): Telemedicine

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

Volume 3 of the multimedia material produced for distant training containing text, presentation and videos. Topics covered in this editions include mainly standards and technology linked to personalized medicine or *p*-Medicine, Non-invasive sensors, Security for health-care, Legal and liability issues, Artificial intelligent in the control of diseases, robotic surgery, ambience intelligence and virtual environment for disease control and treatment, telepresence.

Title of activity: WEB OF THE TELEMEDICINE GROUP

Title: www.teide.net/catai

Producer and/or distributor *(with address)*: CATAI

Year: 1997-2007

Teaching/learning material X

Type of material:

• Video

• CD ROM

• Visioconference:

• Other type of material X

(Please specify): _____ Web page; Videostreaming training

Duration:

Format: Html; RM (real media)

Language(s): English- Spanish

Main keywords (4 or 5): Telemedicine

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

The CATAI web has as main objective the spread of the Telemedicine in Spain and in developing countries. The non-for profit association fo the CATAI (Center of Advanced Technology in Image Analysis) support Telemedicine activities and studies in the field of:

Image Analysis at distance
Data transmission
Videoconsultation and videoconferences
On Line training
Distant telequantitation.

The Summer and Winter Courses of the CATAI can also be followed on line during its production by means of the Helix Videosever providing Real Media output that contain the Power Point presentation together with the video image of the speaker.

Title of activity: __WEB & SMS Server for Diabetes control at distance__

Title: <http://193.145.112.231/CHS/>

Producer and/or distributor (*with address*): CATAI

Year: 2002-2007

Teaching/learning material

Type of material:

- Video
- CD ROM
- Visioconference:
- Other type of material X
(*Please specify*): _____ Support of diabetic people at distance

Duration:

Format: Html;

Language(s): English- Spanish

Main keywords (4 or 5): Telemedicine, Diabetes, SMS

SHORT ABSTRACT

(*Brief description of the content in English, French or Spanish*)

Web Server available for groups of medical people in English and in Spanish to be able to test Diabetes control at distance. It is accessible by Internet and also using mobile phone SMS.

Title of activity: WEB & SMS Server for anticoagulant treatment control at distance

Title: <http://193.145.112.231/INR/>

Producer and/or distributor (*with address*): CATAI

Year: 2002-2007

Teaching/learning material

Type of material:

- Video
- CD ROM
- Visioconference:
- Other type of material X
(*Please specify*): _____ Support of people treated with an anticoagulant treatment.

Duration:

Format: Html;

Language(s): English- Spanish

Main keywords (4 or 5): Telemedicine, INR, telemetry, anticoagulation, SMS

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

This web site is available for any patient or doctor that either can be controlled at distance or want to control de patient at distance. Include a Decision Support System (DSS) to advise the user on the type of treatment that should be implemented plus the capability of give messages from doctor to patients and viceversa.

Title of activity: DISTANT TEACHING

Title: <http://alexandros.ccslab.aueb.gr/~ctc>

Producer and/or distributor *(with address)*: CATAI

Year: 2000-2007

Teaching/learning material X

Type of material:

- Video
- CD ROM
- Visioconference:
- Other type of material X
(Please specify): _____ Web page

Duration:

Format: Html

Language(s): English-Spanish

Main keywords (4 or 5): Telemedicine distance training

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

The present activity carries out the diffusion of the structured training skills in the field of TELEMEDICINE. It introduces an innovative professional training by assuming new Information Society skills not only in the Health Care provision but also in the teaching methodology. The co-operation inside of the present CTC consortium will provide and update the contents of those rapidly moving technologies, and will bring innovative approaches in the teaching done at distance with experience of the ODL of APOLLO project as well as the experience on surgical virtual reality simulators provided by the new partners. The training is directed towards trainers to update their knowledge and skills, it means health care professionals (including directors and responsible people) in the European Union. This requires the updating of the Information Society training applied to health care.

This activity is linked with the initiative of the UNESCO Chair of Telemedicine to apply the consortium experience towards the urgent demand of Telemedicine in developing countries to improve their limited health care system efficiency and accessibility. The International teaching activities are arranged in intensive Winter and Summer Courses particularly to update trainers knowledge and teaching material. This activity also takes into consideration the fact that a complete training is not possible in each individual country due to the irregular Health Care technology developments throughout the European Union

Title of activity: TELEMEDICINE DISTANT COACHING-TRAINING

(BREEZE)

Title: <http://www.cataibreeze.ull.es/>

Producer and/or distributor *(with address)*: CATAI

Year: 2006-2007

Teaching/learning material X

Type of material:

- Video X
- CD ROM
- Videoconference: X
- Other type of material X
(Please specify): _____ Multimedia material and on-line session to train at distance in Telemedicine, including the official master students.

Duration: Always updated. Up to now 3 months material

Format: Macromedia Breeze (server-presenter); Macromedia Flash
Language(s): English- Spanish
Main keywords (4 or 5): Telemedicine training

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

Web Server available for training and coaching students on line and at distance in the Telemedicine topic as well as Bioengineering applied to telemedicine. Top multimedia material and test as well as on line conferences are included for study an review of the students. On line questionnaires will be available in the future.

Title of activity: PILATES TECHNIQUE DIABETES CONTROL BY MOBILE PHONE

Title: Windows mobile platform for guiding diabetes people

Producer and/or distributor *(with address)*: CATAI

Year: 2006-2007

Teaching/learning material

Type of material:

- Video
- CD ROM
- Videoconference:
- Other type of material X
(Please specify): _____ Program in Windows-mobile to guide insulin dosage according 3 parameters (diet//activity//illness).

Duration: no limitation

Format: Windows mobile

Language(s): English- Spanish

Main keywords (4 or 5): Diabetes control. Artificial Intelligence.

SHORT ABSTRACT

(Brief description of the content in English, French or Spanish)

The programming tool to be used in mobile phones with windows mobile to advise the insulin dose in diabetic people according to diet/activity and illness.

COURSE PROGRAMMS

XV Winter Course of CATAI

XX Image Analysis Course of the ULL

March 5th – 18th 2007

STANDARS IN TELEMEDICINE

La Laguna. Tenerife. Canary Islands. Spain.

Course recognized by: ESCAP (European Society of Analytical Cellular Pathology),
ISDQP (International Society of Diagnostic Quantitative Pathology) and ISCO (International Society of Cellular Oncology). <http://www.qub.ac.uk/cm/pat/isdqp/>;

Course recognized by EFMI (European Federation of Medical Informatics)

<http://www.efmi.org/>

Monday 5th March, 2007

16-20h • *Welcome to the Course*, **Prof. Dr. M.Tejedor**, Chancellor of Industrial Development and Technological Innovation. **Prof. Dr. Á Gutiérrez** Head of the University of La Laguna (ULL), Tenerife. **Prof. Dr. C. Évora** Vice-Rector of Research, University of La Laguna (ULL), Tenerife. *Experiences in Spain:*

Standardized electronic health record. EU norms versus HL7v3

Eng R. Somolinos. Clinic Puerta de Hierro. Madrid <http://redtelemedicina.retics.net/>. *Global vision of the standards in Telemedicine*, **Prof. Dr. O. Ferrer Roca**, UNESCO Chair of Telemedicine. ULL. <http://www.teide.net/catai>

Tuesday 6th March, 2007

16-20h • *Quality control in Telemedicine*, **Dr. P. Serrano**, FUNCIS. <http://www.funcis.org/>. *Teleophthalmology and OCT*, **Drs R.Abreu, P.Abreu, A.Abreu, J.Nadal**. Candelaria and HUC hospitals, Ophthalmology-center Barraquer [http://www.oftalnet.nu](http://www.oftalnet.nu;); <http://www.co-barraquer.es/cast/index.htm> *Telemedicine cost in Primary Attention*. **Drs A.Nogales and C.Pelaez**. Telemedicine of Health Service of Extremadura and University Hospital Badajoz. <http://www.juntaex.es/consejerias/svc/ses/home.html>

Wednesday 7th March, 2007

16-20h • *New aspects in the DICOM standard*. Prof. **Dr. V. Punys**. Kaunas Univ. EFMI WG MIP <http://www.mmlab.ktu.lt>. *Wavelet compression on medical imaging. Image quality assessment*. **Prof. Dr. Eng. P. García Tahoces**. Department of Electronics & Computation. Univ. Santiago de Compostela. Spain. <http://www.usc.es/labir>

Thursday 8th March, 2007

16-20h • *Identity management*, **Prof. Dr. Ch. Meinel**, Institute Hasso-Plattner-, University of Potsdam, Germany, <http://www.hpi.uni-potsdam.de/>. *Quality of services in 4G networks*. **Eng. C. García García**. IT Department Carlos III Inst. Madrid. <http://biotic.isciii.es/index.htm>.

Friday 9th March, 2007

16-20h • *Telecardiology quality and reliability assurance frameworks*. **Prof. Dr. A. Kastania**, Found Biomedical Res. Academy of Athens. <http://www.bioacademy.gr/EN.htm>; *IHE in Spain*. **Dr. M. García Rojo**. Ciudad Real. <http://www.ihe-e.org/>.

Saturday 10th March, 2007

16-20h • *Data Protection Laws. Advances in Sanitary Regulation*. **J. Sempere Samaniego**, Data Protection Agency, Madrid, <https://www.madrid.org/apdcm>. *OneQL: Efficiently Querying the Health Domain in the Semantic Web*. **Prof. Dr. M. E. Vidal**. University Simon Bolivar. Venezuela. <http://www.usb.ve>

Sunday 11th March, 2007

16-20h. *Telemetry*, **Mr. J. L. López**. COMITAS Communications. <http://www.comitas.es>. *Calibration of monitors in Radiology*. **M. Marin**. Wide Spain. *Standards of virtual reality*, **Prof. Dr. G. Graszew and V. Guerkan**, Clinical university of the Charité, Berlin, <http://www.rrk-berlin.de/op2000>. ESA- European Space Agency, ESTEC- European Space Research and Technology Centre, Noordwijk, Holland, <http://www.esa.int/>

Monday 12th March, 2007

16-20h • *Environmental intelligence in telemedicine*. **Prof. Dr. MT Arredondo** Group of Environmental intelligence. Polytechnic University Madrid. <http://www.gbt.tfo.upm.es/~mta/>; *Decision support system and robotics*. **Prof. Dr. J. Mira Mira**. UNED. Madrid. <http://www.ia.uned.es/~jmira/>; *Stitching & transmission in JPEG2000*. **Ing. J.P. García Ortíz**. Univ. Almería. <https://acc.ual.es>.

Tuesday 13th March, 2007

16-20h • *Telemedicine in the Sea*. **Prof. Dr. A. Burgos Ojeda**. ULL. http://webpages.ull.es/users/nautica/informacion_general/index.htm *Teleophthalmology in the HUC*. **Prof. Dr. MA. Serrano- García, Dr. A. Pareja, Dr. M. J. Losada, Dr. F. Ascanio**. University Hospital. Tenerife, Canary islands. <http://www.hecit.es/>; *Intelligent operating room*. **Prof. Dr. A. Alarcó Hernández**, *Distance learning in surgery* **Dr. A. Bravo Gutiérrez**. HUC <http://www.hecit.es/>.

Wednesday 14th March, 2007

16-20h • *Quality control and quality assessment medical device standards*. **Prof. Dr. J.C. Aldecoa**. Subdirector Biomedical Engineering. HUC. <http://www.hecit.es/>; *Medical image modalities*. **Prof. Dr. J Hernández Armas**. Medical Physics. ULL. HUC <http://www.hecit.es/>.

Thursday 15th March, 2007

16-20h • *Cardiac frequency and detection of cardiac events*, **Dr. S. Perrone**, Univ. Entre Ríos, Argentina, http://www.bioingenieria.edu.ar/ar/index/42_index.htm *Interactive TV services for telemedicine (TV-medicine)*. **Prof. Dr. G. Fernández**. CeTVD. Univ Ramon Llull. www.salle.url.edu/cetvd. *Image stictchin in medicine*. **Eng. F. Marcano**. Faculty of Medicine. ULL. www.teide.net/catai.

Friday 16th March, 2007

16-20h. *Telepsychiatry efficacy*, **Prof. Dr. C. de las Cuevas**. Univ. La Laguna.. Dpt. Psychiatry. *Hand-held computer in medicine*, **Dr. R. Subirana**. Delfos Clinic. Barcelona. *Wireless system radiation, health effects*. **Eng. S. Cardenes** CATAI, <http://teide.net/catai>.

Saturday 17th March, 2007

16-20h • *Spanish law and Telemedicine*, **Prof. Dr. E. Sola**, Faculty of Laws, ULL. *Ethics in Telemedicine*. **Prof. Dr. E. Sanz**. Dpt. Pharmacology. Faculty of Medicine. ULL.

Sunday 18th March, 2007

16-20h *Presentation of student works. Telemedicine in developing countries*. **Dr. Dan Wamala** University Makerere. Uganda.

Workshops: Everyday from 8 to 16 h.

1. *Tele-pathology systems: Texcan and Coolscope*; 2. *Teletraining with Presenter-One and Breeze*; 3. *Flash Programming*;
4. *Digital Signature*; 5. *Telemetry with electronic stethoscopes, weights, ECG and vital sign control*; 6. *HTML*; 7. *Portable ultrasonography*; 8. *Wireless sensors*; 9. *SMS management control*; 10. *Web control of diabetes*; 11. *SMIL Programming*;
12. *Wearable computers*; 13. *Distan control of monitors for image diagnosis*.