# UNITWIN/UNESCO Chairs Programme
# Progress report 2013-2015

«If this has not yet been done, please forward your progress report before 31 May 2015» to the Director, Division of Higher Education.

**Period of activity: 2013-2015**

Title: **UNESCO CHAIR TELEMEDICINE**

**Report established by:** **Prof.Dr.O.Ferrer-Roca,**
**Function / Title:** **responsible UNESCO Chair Telemedicine 1999-2015**
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
7, place Fontenoy – 75352 Paris 07 SP
Fax: 33 1 45 68 56 26/27/28

## Summary

I. Address ..... 3
II. Available resources ..... 4
1. Human resources ..... 4
2. Material resources ..... 4
III. Activities ..... 5
1. Education/Training/Research ..... 5
1.1. Title and expected results for each course, workshop,… ..... 5
2. Conferences/Congresses/Meetings ..... 5
2.1. Title and expected results for each conference, meeting…: ..... 5
3. Missions / Travels abroad ..... 6
3.1. Destination: University La Laguna. ..... 6
3.2. Destination: European Commission- DG.CONNECT-CNECT. Univ Libre de Bruselles. ..... 6
3.3. Destination: UNESCO Headquarters. Paris ..... 6
3.4. Destination: UNESCO Headquarters. Paris ..... 7
3.5. Destination: BNU-Beijing National University. China ..... 7
3.6. Destination: UIB-University Illes Balears ..... 7
3.7. Destination: Luxembourg ..... 7
3.8. Destination: WHO Headquarters. Geneva. ..... 7
3.9. Destination: Spanish Unesco Chair Meeting ..... 7
3.10. Destination: Microsoft Headquarters. Brussels. ..... 7
3.11. Destination: Luxembourg ..... 7
3.12. Destination: University of La Laguna. ..... 8
3.13. Destination: University of Las Palmas de Gran Canaria. ..... 8
4. Visiting professors / Fellowships ..... 8
5. Information and documentation activities (6 activities) ..... 8
6. Others ..... 9
6.1. Written agreements with Universities ..... 9

6.2. Training Books donations ..... 9
6.3. International projects ..... 9
IV. Impact ..... 10
1. Relation Article Citation in international collaborations ..... 10
2. Geographic distribution of web visitors 1year: ..... 11
3. On Line social impact: The KLOUT: 56 ..... 11
4. Slideshare. ..... 12
5. Google Search: Telemedicina- UNESCO (9270 results) ..... 13
V. Forthcoming activities ..... 17
VI. Development prospects ..... 18
Target groups ..... 19
Geographical Coverage ..... 20
Funding sources ..... 21
Outputs-I ..... 22
Form 1: Publications ..... 22
1. Title of activity: STANDARDS IN TELEMEDICINE. (11 publications) ..... 22
Outputs-II ..... 28
Form 2: Multimedia material ..... 28
Title of activity: TELEMEDICINE-CD (12 publications) ..... 28
Title of activity: TELEMEDICINE GROUP ON LINE (11 On line platforms) ..... 34
Title of activity: DISTANT TEACHING ..... 38
Title of activity: UNIVERSITY OF LA LAGUNA (ULL) ..... 40
Title of activity: UNESCO ..... 41
Form 3: Program of Courses ..... 42
2013 - Title of activity: SYSTEM ON CHIP (SoC) devices in Telemedicine. From Lab on Chip (LoC) to high resolution images ..... 42
2014 - Title of activity: 4T-MEDICINE (cancelled) ..... 43
2015 - Title of activity: I-SUMMIT OF THE HUMANIZATION OF HEALTHCARE (H2O) ..... 45
2012-13 - Title of activity: MASTER EN DERECHO SANITARIO- UIB. ..... 46
2014-15 - Title of activity: MASTER EN DERECHO SANITARIO- UIB. ..... 46
Form 4: Press Release ..... 47

# 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 |
| Country | Spain | Spain |
| Phone | +34 922-319321 | +34 922-319321 |
| Fax | +34 922-641855 | +34 922-641855 |
| E-mail | catai@teide.net | catai@teide.net |
| Web Site | http://www.teide.net/catai | http://www.teide.net/catai |

# II. Available resources

## 1. Human resources

1. For the administration of the UNESCO Chair or Network
   Partial time support Secretary
2. For the teaching/training/research activities
   Please specify number of full professors, researchers, visiting professors, lecturers, others
   Prof. Dr. O. Ferrer-Roca
   Engineer/ Fellowships Daniel González Mendez; Jesus Montanez, Laura Ramos, K Roca.
3. For the information and documentation activities:
   Prof. Dr. O.Ferrer-Roca
4. For other activities: The international courses brought to teaching and training a total of 30 professors coming from European, African and Ibero-American countries (Greece, Germany, Spain, Uganda, Valencia, Argentina, UK).

## 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, iPhone medical applications.
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, skylight distant control, iphone applications (blood pressure monitor, ECG, EEG), Galaxy camera over android OS, Cloud systems.

# 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

### 1.1. Title and expected results for each course, workshop,…

See joined memorandum and programs of the Winter Courses of the CATAI (Annex 5-Form 3)

- Duration: 1weeks.
- Target groups: doctors, nurses, health-care providers, NGO´s

*1.1.1.* Partnership *(please specify the name of the Institution, city, country): Universities Trier-DE, Postdamm-DE, Humboldt Univ. Berlin-DE, Makerere-Uganda, Simon Bolivar-Caracas-Venezuela, Athens Univ. of Economics and Business-GR, Istambul-Turkey, El Cairo- Egypt, EntreRios-Argentina, Barcelo Univ Buenos Aires, Argentina, Pontificia Universidade Catolica do Rio Grande do Sul (PUCRS) Porto Alegre-Brazil, Porto-Portugal, Univ Oslo, Oslo-Norway, Univ Munich-Munich-Germany, Universidad Politecnica Barcelona (UPB)- Spain. Hosp. Clinic Barcelona-Spain, Univ. Di Roma Sapienza-Italy, Univ Budapest-Hungary, Univ Udine, Italy. Univ. Cheikh Anta Diop, Dakar, Senegal, Univ d´Abomey Calavi (Cotonou), Rép. Du Benin y Univ Nacional de Guinea Ecuatorial (UNGE), Guinea Ecuatorial,University California (UCLA)-USA,Univ Valencia,(UV). U.Baleares (UB), Shahid Beheshti Medical University, Tehran, (Iran), U Caribe-Barranquilla, (Colombia), Vitanlink (France), L´Institute Mines Telecomm (France), University Liege (Belgium), Unesco Chear of Esophagus in Switzerland .*

- Geographical coverage partners & participant: Europe-Africa-South & North America.
- Funding sources: CATAI founding. Telefónica SL. CajaSiete SA.
- 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

### 2.1. Title and expected results for each conference, meeting…:

They are 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: In 4-10th March 2013, Tenerife, XXI CATAI Winter Course in System on Chip (SoC) devices in telemedicine from LABoC to high resolution images. January 2015.Tenerife. Humanization of Healthcare (H2O)*

and we attended the following congresses and meetings:

*In the 25th January 2013 the international meeting of the IWEE (International Workshop of e-Health in Emerging Economies) under Social Justice with the participation of the WHO, EC, WB, Red Cross, Doctors without frontiers. In the 22nd – 23th January 2014* ***Meeting of UNESCO Chairs*** *on Higher Education, Teachers, and ICT in Education in the UNESCO Paris. In the 29th -30th May 2014 the international meeting of the IWEE (International Workshop of e-Health in Emerging Economies) under Social Justice with the participation of the WHO, EC, WB, Red Cross, Doctors without frontiers. 28September-2 August 2014 Meeting at the Polytechnic University of Catalonia to continue with the Solo-medicine project. 13-15 August 2014 meeting UIB- St. Lazare hospital, Master of Legal aspects and Humanization of Healthcare. In the 17th-18th October 2014, Beijing-China in the International*

*Conference on Identification, Information & Knowledge in the Internet of the things (IoT). 22-24 April 2015 Med-e-Tel 2015 Luxemburg. 25-26th September 2015, the international meeting of the IWEE (International Workshop of e-Health in Emerging Economies) under Social Medicine with the participation of the WHO, EC, WB, Red Cross, Doctors without frontiers.*

- *New P*artnerships *(please specify: Name of the Institution, City, Country): see joined programs plus Mulago Hospital-Uganda; Roche Research Center, Univ Perm-Russia, Casablanca-Marrocco, Pontificia Universidade Catolica do Rio Grande do Sul (PUCRS) Porto-Alegre-Brazil. Technical University Munich (Germany). Israel Institute of Technology (Haifa-Israel), U Caribe-Barranquilla, (Colombia).*
- Participants *(number*): *100 up to 1000 depending of the type of meeting*
- Geographical coverage for participants and partners: Europe, Africa, South-America, Asia & Australia.
- Funding sources: CATAI funding. Telefonica SL. CajaSiete.
- Outputs: Please complete Annex 1 for the publications and Annex 2 for the multimedia material.
- Master at distance on "**Derecho Sanitario**" (Legal aspects Health). With the topic of Telemedicine. University of Balear Islands. http://catai.net/blog/2012/07/master-de-derecho-sanitario/ . Editions 2013-14, 2014-15.
- Digital Pathology cooperation with Cytomine in Liege Belgium. Rafael Maree. http://www.cytomine.be/
- Artificial Intelligence graph display for HER. Ettienne Salier. Brussels. Belgium
- Promotion and cooperation in free software with GNU-Health. IWEEE.
- Foundation of the Hiberiae Societas Telemedicinae et Telesanitas 2015 (Main Founder)
- N. Ezenne, UNESCO Chairholder in Educational Policy, Planning, Management, and Research Development at Makerere University. Kampala. Uganda.

## 3. Missions / Travels abroad

### 3.1. Destination: University La Laguna.

From : Tuckmekistan
Purpose: Students training in telemedicine (UNESCO chair Telemedicine)
Duration: from 1 to 2 month
Funding source: University of La Laguna/CajaSiete/ Catai fundings/
Outputs: 1- Training of students to provide telemedicine in underserved areas.

### 3.2. Destination: European Commission- DG.CONNECT-CNECT. Univ Libre de Bruselles.

From : University of La Laguna
Purpose: Humanization of Healthcare- Horizon2020- Machine Learning
Duration: from 1 week
Funding source: ULB/ University La Laguna
Outputs: 1- Cooperation in AI for HER and preparation of the Horizon2020.

### 3.3. Destination: UNESCO Headquarters. Paris

From : University of La Laguna
Purpose: Meeting of the Unesco Chairs of High Education
Duration: from 1 week
Funding source: University La Laguna/CajaSiete
Outputs: 1- Sinergy and control with the rest of Unesco Chairs.2- http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/ED/pdf/UNESCO-summary-report-chairs-2014-1.pdf

**3.4. Destination: UNESCO Headquarters. Paris**

From : University of La Laguna
Purpose: 38th UNESCO General Assembly. 3-8 Nov 2015
Duration: from 1 month
Funding source: Not carried out due to lack of financial support
Outputs: 1- General Spanish strategy for the next High Education Policies.

**3.5. Destination: BNU-Beijing National University. China**

From : University of La Laguna
Purpose: IIKI-2014. University
Duration: from 1 week
Funding source: University La Laguna/Caja Siete
Outputs: Machine Learning upgrades in the field of Health FOG and Small Data. Two releveant publications. See Outputs.

**3.6. Destination: UIB-University Illes Balears**

From : University of La Laguna
Purpose: Master on Legal Aspect in Telemedicine
Duration: from 1 week
Funding source: University La Laguna/Caja Siete
Outputs: 1- Coordination of the Master; 2- Colaboration for the Humanization of Healthcare project.

**3.7. Destination: Luxembourg**

From : University of La Laguna
Purpose: Med-e-Tel 2015 with WHO- EHTEL- ISFTHET- Red Cross.
Duration: from 1 week
Funding source: University La Laguna/Caja Siete
Outputs: HFog and Small Data in Health care.

**3.8. Destination: WHO Headquarters. Geneva.**

From : University of La Laguna
Purpose: Device meeting of the WHO.
Duration: from 1 week
Funding source: University La Laguna/Caja Siete
Outputs: Training and regulations in Telemedicine and Device management.

**3.9. Destination: Spanish Unesco Chair Meeting**

From : University of La Laguna
Purpose: Univ of Valencia.
Duration: from 1 week
Funding source: Not carried out due to lack of financial support.
Outputs: Annual meeting.

**3.10. Destination: Microsoft Headquarters. Brussels.**

From : University of La Laguna
Purpose: Empowering Health: towards more personalized, productive, collaborative and predictive health services & systems.
Duration: from 1 week
Funding source: Not carried out due to lack of financial support.
Outputs: Role of the Nurses in the Integrated Healthcare.

**3.11. Destination: Luxembourg**

From : University of La Laguna

Purpose: Med-e-Tel 2016 with WHO- HIMMS- ISFHET- Red Cross.
Duration: from 1 week
Funding source: Not carried out due to lack of financial support.
Outputs: The International e-Health, telemedicine and Health ICT for Education, Networking and Business

**3.12. Destination: University of La Laguna.**
From : Univ.Schefield-UK, Paris, Munich, Univ.Torino, Univ HESSO-Switzerland, Univ Murcia, Supercomputer Centre Barcelona, Univ Genova.
Purpose: Humanization of Health Care. Equity and accessibility. (UNESCO Chair Telemedicine)
Duration: from 1 week
Funding source: In part University of La Laguna/CajaSiete
Outputs: H2O-Humanization of Healthcare project.

**3.13. Destination: University of Las Palmas de Gran Canaria.**
From : University of La Laguna
Purpose: IWEEE. International workshop of eHealth in Developing Countries
Duration: from 1 week
Funding source: University of La Laguna/CajaSiete
Outputs: DIY Open Hardware and open software.

## 4. Visiting professors / Fellowships

Number: (23)
Duration: up to 1 month
University of origin: *Potsdam-Germany (2), Clinical university of the Charité-Berlin (2), Univ Athens (3), Univ Munich- Germany (2), Univ Mainz, Germany (1) Univ Budapest, Hungria (2), U. Politecnica Barcelona (2).U.Valencia, Spain (1), U.California, USA (1),U.Genova(1), U.Torino (3), U.Vienna (1), U. Surey-UK(1), U.Libre Bruseles(1)*

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

## 5. Information and documentation activities (6 activities)

5.1. **CATAI 2013** "System on Chip (SoC) devices in telemedicine from LABoC to high resolution images" CATAI editions 2012 Tenerife. Canary Islands. Spain ISBN: 978-84-615-6080-6
5.2. **CATAI 2013- eBook: System on Chip (SoC) and Lab on Chip (LoC)** on line proceedings. 72 pages https://dl.dropboxusercontent.com/u/56554173/XXI%20COURSE%20CATAI-html/index.html#/0
5.3. European Master of Telemedicine and Bioengineering applied to Telemedicine, **Volume X**. CATAI Editions 13. ISBN 978-84-616-2364-8
5.4. Proceedings of the I Summit of the Humanization of Healthcare.
5.5. IWEEE 2014- Open and Modular for Health. O&M4H http://www.slideshare.net/OFRoca/iweee-2014-2
5.6. IWEEE 2015- Earomics part I http://www.slideshare.net/OFRoca/earomics-2015 and Earomics part II http://www.slideshare.net/OFRoca/earomics-part-2

## 6. Others

### 6.1. Written agreements with Universities

6.1.1. Agreements with the Siksha O Anusandhan University (India) 2013.
6.1.2. Agreements with the Unesco Chair of Esofagous from Swizerland 2016
6.1.3. Agreedments with the HESSO institution in Switzerland for the Humanization of Healthcare, 2015.
6.1.4. Agreedments with Flex and Design Center of Milano for the Humanization of Healthcare, 2015
6.1.5. Agreedments with Allianz worldwide partners for the Humanization of Healthcare, 2015.
6.1.6. Agreedments with Surey University, UK. Partners for the Humanization of Healthcare 2015
6.1.7. Agreedments with University of Vienna. Partners for the Humanization of Healthcare 2015
6.1.8. Agreedments with University of Torino. Partners for the Humanization of Healthcare 2015

### 6.2. Training Books donations

6.2.1. Donations of the vol. V of the European Master of Telemedicine and Bioengineering applied to Telemedicine. to the Universities of Entre-Rios (5), Makerere (6), Caracas (5), Greece (5), Univ. Rio Grande do Sur.Brazil (6).
6.2.2. Donations of the vol. VI of the European Master of Telemedicine and Bioengineering applied to Telemedicine. to the Universities of Entre-Rios (5), Makerere (6), Caracas (5), Greece (5), Univ. Rio Grande do Sur.Brazil (6), Senegal (3), Rép. Du Benin (6) y Guinea Ecuatorial (4).
6.2.3. Donations of the vol. VII of the European Master of Telemedicine and Bioengineering applied to Telemedicine. to the Universities of Entre-Rios (5), Makerere (6), Greece (5), Univ. Rio Grande do Sur.Brazil (6).
6.2.4. Donations of the vol. VIII of the European Master of Telemedicine and Bioengineering applied to Telemedicine. to the Greece (5), Univ. Rio Grande do Sur.Brazil (6), Univ Tuckmenistan (12), U.Caribe-Barranquilla (6) .
6.2.5. Donations of the vol. IX of the European Master of Telemedicine and Bioengineering applied to Telemedicine. to the Greece (5), Univ Tuckmenistan (12), U.Caribe-Barranquilla (6), Shahid Beheshti Medical University, Tehran, Iran (6) .
6.2.6. Donations of the vol. X of the European Master of Telemedicine and Bioengineering applied to Telemedicine. to the Greece (5), Univ Tuckmenistan (12), Shahid Beheshti Medical University, Tehran, Iran (6) .

### 6.3. International projects

6.3.1. Tempus Project: 530574-TEMPUS-1-2012-1-ESTEMPUS-JPCR. *Advanced Curriculum development in Telemedicine for Turkmenistan (MEDET).*
6.3.2. H2O- Humanization of Healthcare. Horizon2020 in preparation.
6.3.3. Humanization of Healthcare-Trials in Piamonte & Servia. Interreg-Med 2015.
6.3.4. UNESCO Network with the Unesco Chair of Esofagous tumors including 10 international cooperations 2016. Switzerland. (joined)
6.3.5. ERASMUS+: "UNIVERSITY-INDUSTRY EDUCATIONAL CENTRE IN ADVANCED BIOMEDICAL AND MEDICAL INFORMATICS (CENTRE-BMI). 575739-EPP-1-2016-1-SK-EPPKA2-KA. University of Zilina. Slovakia.
6.3.6. ERASMUS+: Developing Molecular Oncology Strategy. University of Georgia. In preparation.

# IV. Impact

1. In Uganda, their initiatives with the use of VHF in walky-talkies to support midwifes, has decreased the mortality of new-born babies by 30%. http://iicd.org/collections/ http://iicd.org/country/uganda/
2. With the Simon Bolivar University in Caracas Venezuela, we will bring the development of rural areas accessing distant diagnosis of vaginal cytology.
3. With Pontificia Universidade Catolica do Rio Grande do Sul (PUCRS) PortoAlegre in Brazil has been started obtaining founding for a join seminar of training and extending the telepathology to telepathology and teledermatology mission to the Amazon (City of Jiparana)and in Amazon area (Rondonia State).
4. With Entre-Rios cooperation have extended the telemedicine into the Peru selvage areas in the Napo river.
5. Scholarships of the GD of the relations with Africa from the Canarian Governement.

6. GNU-Health training support in Gabon. http://catai.net/blog/2016/03/free-software-diy/

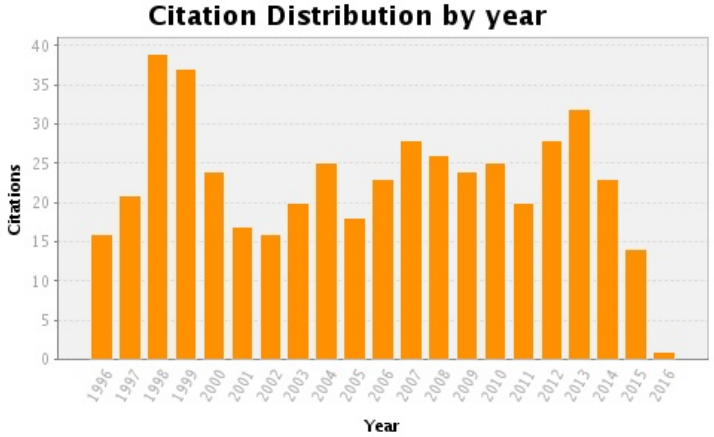
One of the main obstacles in the wide use of Telemedicine is the lack of specific training and qualifications in the health care environment (doctors, nurses, paramedics, managers, NGO´s) as well as related areas from which they require support (computer science, telecommunications).

## 1. Relation Article Citation in international collaborations

http://academic.research.microsoft.com/Author/53893146/o-ferrer-roca

**My Publications: Citation Metrics**

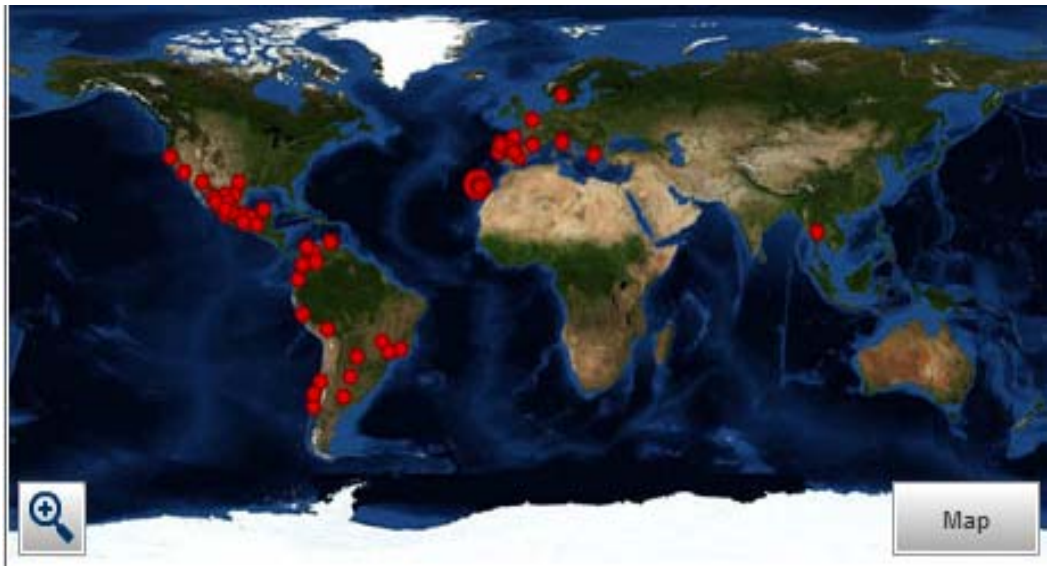
This graph shows the number of times the articles on the publication list have been cited in each of the last 20 years.
Note: Only articles from Web of Science Core Collection with citation data are included in the calculations. More information about these data.




| | |
|---|---|
| Total Articles in Publication List: | 176 |
| Articles With Citation Data: | 61 |
| Sum of the Times Cited: | 593 |
| Average Citations per Article: | 9.72 |
| h-index: | 12 |
| Last Updated: | 03/04/2016 06:54 GMT |

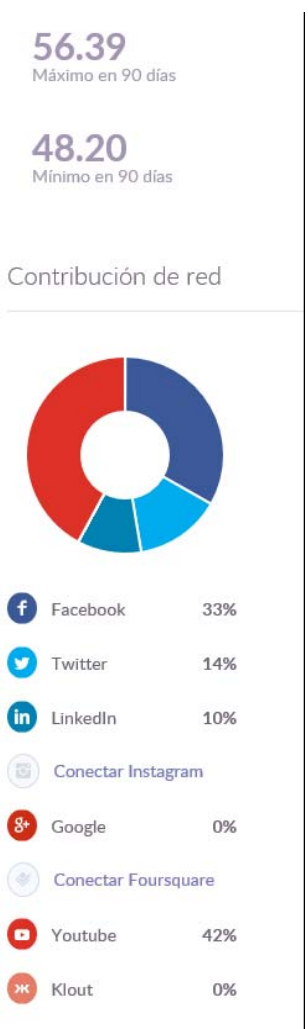
http://www.researcherid.com/rid/B-1710-2009

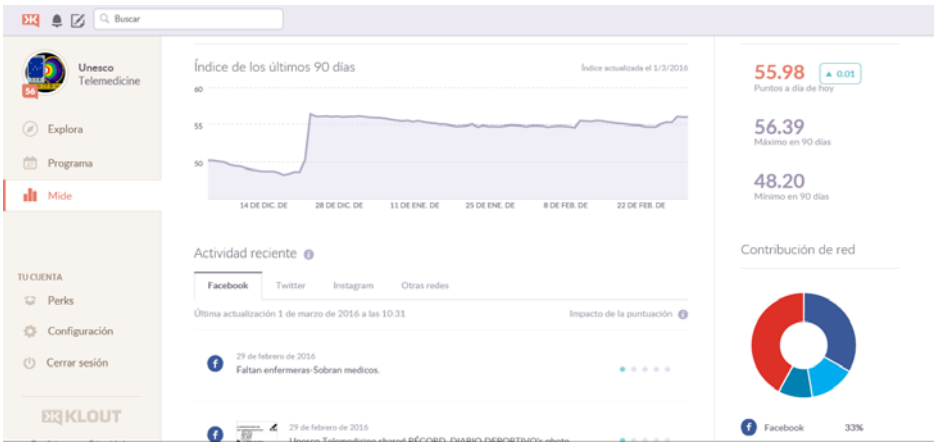
## 2. Geographic distribution of web visitors 1year:




## 3. On Line social impact: The KLOUT: 56

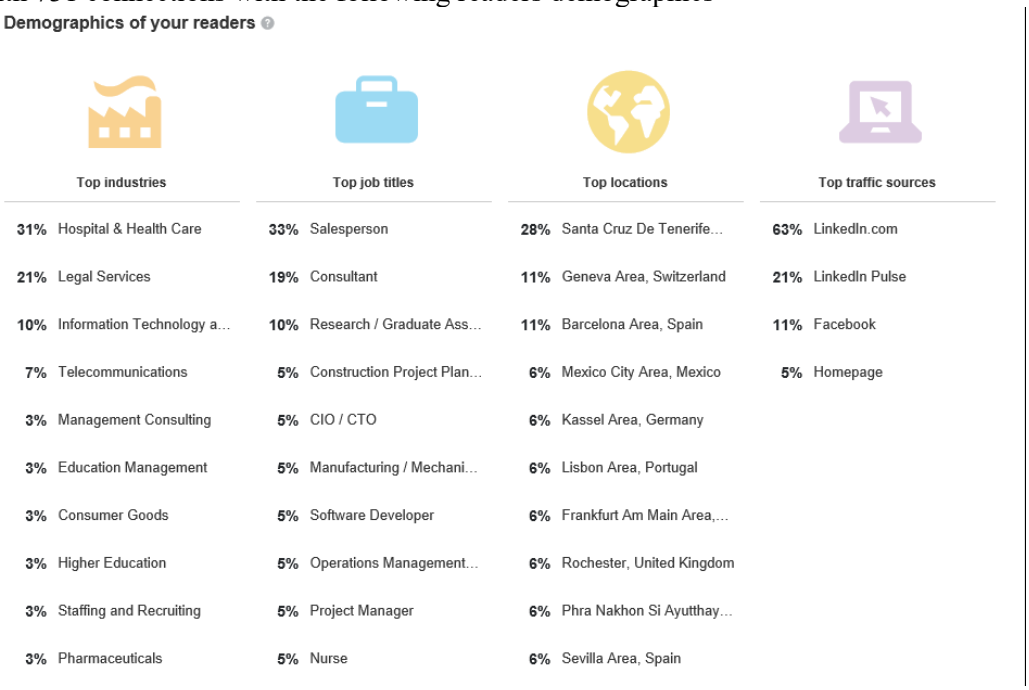
One of the most influencers in eHealth https://klout.com/#/UnescoTeleMed reaching the 56 influence score.



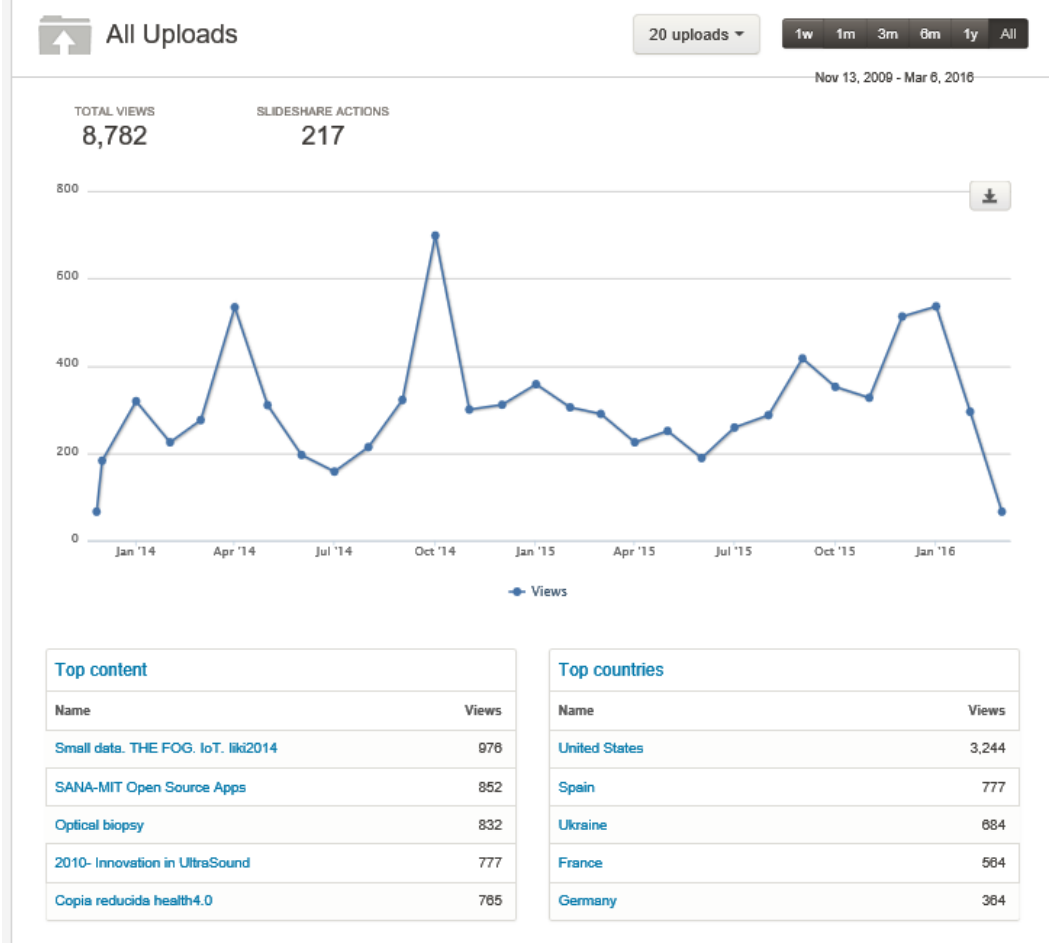

Particularly with their teaching videos in the YOUTUBE channel https://www.youtube.com/channel/UCitOeEF7tWf4FQ2ZqMiK_hw with 617 subscriptions
FACEBOOK https://www.facebook.com/unesco.telemedicine that are followed by 761 but also in
SCOOPIT http://www.scoop.it/t/health-4-0 , with 3,4 K views
PINTEREST https://es.pinterest.com/cataitm/ with 561 followers
TWITTER https://twitter.com/UnescoTeleMed with 487 followers

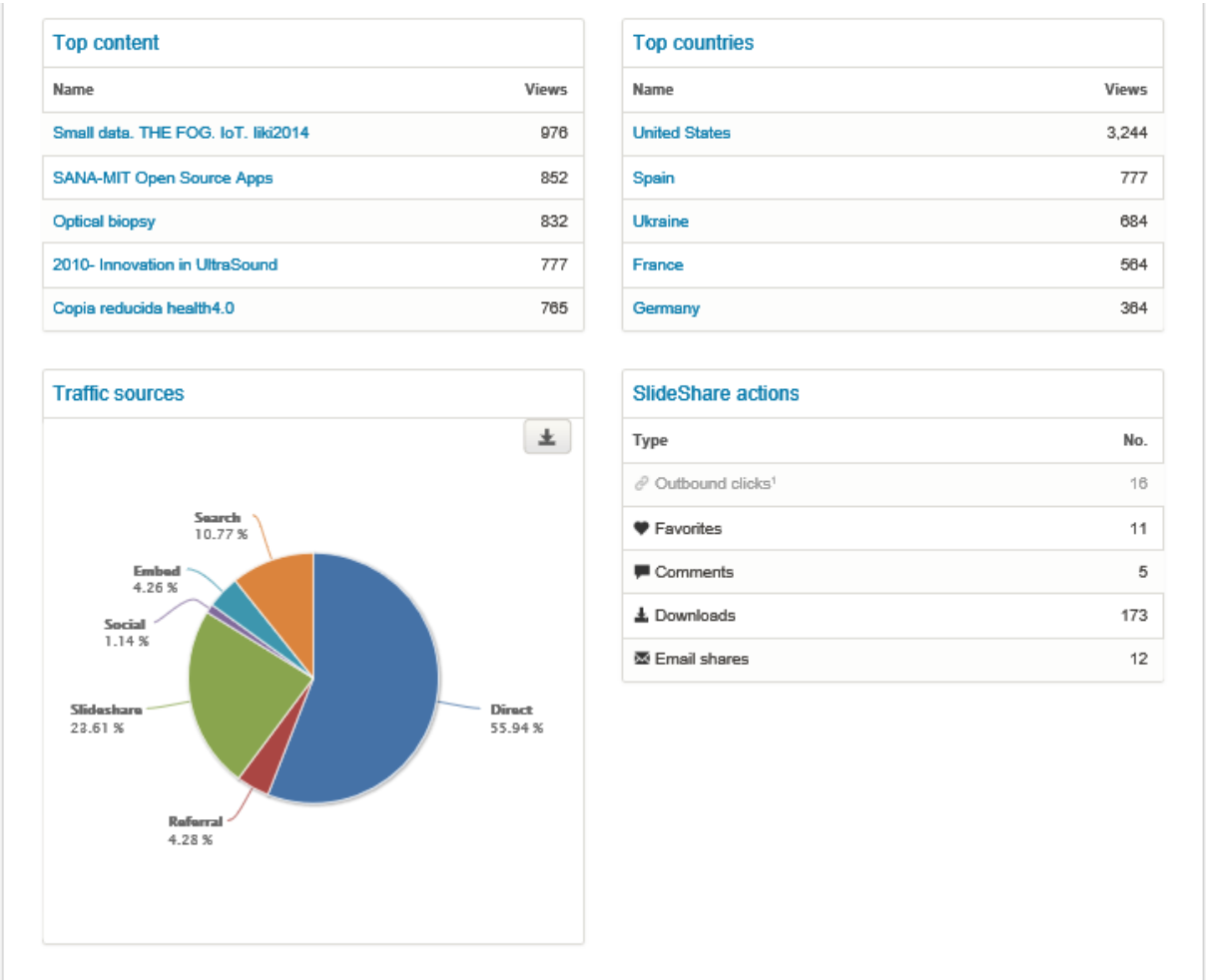
And LINKEDIN https://www.linkedin.com/in/unesco-telemedicine-93baa243?trk=hp-identity-name with 731 connections with the following readers demographics




## 4. Slideshare.

**http://www.slideshare.net/OFRoca**






NOTICED the 976 views of the Small Data. The FOG.

## 5. Google Search: Telemedicina- UNESCO (9270 results)

All the following links are related to the UNESCO Chair of the ULL either in Spanish or in English (telemedicine-Unesco)

Arround 9.270 results (0,27 seg) . Listed the 3 first pages.

UNESCO Chair in Telemedicine (467) | | UNESCO
*www.unesco.org › ... › Europe and North America*
*UNESCO Chair* in *Telemedicine* (467), established in 1999 at the University of La ... To facilitate training and skills acquisition on the *Telemedicine*; directed ...

UNESCO Chair in Telemedicine - Wikipedia, the free ...
*https://en.wikipedia.org/.../**UNESCO_Chair**_in_**Tele**...*
*UNESCO Chair* of *Telemedicine* (UNES_CT) is a portion of UNESCO that was founded in 1999. It undertakes international activities related to the promotion of ...

Unesco Telemedicine | LinkedIn
*https://es.linkedin.com/pub/**unesco-telemedicine**/43/aa2/93b*
Santa Cruz de Tenerife y alrededores, España - Health 4.0 - UNESCO Chair of Telemedicine

Ver el perfil profesional de Unesco *Telemedicine* en LinkedIn. ... *UNESCO Chair* of *Telemedicine*,; CATAI-Center Advanced Technology Image Analysis, ...

## [DOC]UNESCO chair of Telemedicine - Med-e-Tel

*https://www.medetel.eu/.../teaching_activities_of_**un**...*

The *UNESCO chair* of *Telemedicine* began his activities on September '99 to adquire knowledge on the topics before any *Telemedicine* practices.

## Unesco Telemedicine presentations | SlideShare

*es.slideshare.net/OFRoca*

View all of Unesco Telemedicine's Presentations. ... *Unesco Chair Telemedicine*; Industry Medical / Health Care / Pharmaceuticals; Website www.teide.net/catai ...

## Unesco Telemedicine | Facebook

*https://www.facebook.com/**unesco.telemedicine***

Join Facebook to connect with Unesco Telemedicine and others you may know. ... Chair woman *Unesco Chair Telemedicine* · 1996 to present · Paris, France.

## UNESCO Chair for distance learning - OESO

*oeso.org/**unesco-chair**-for-distance-learning.html*

*UNESCO Chair* in *Telemedicine* for multi-disciplinary distance learning and creation of evolutional content in the framework of the UNITWIN networks (University ...

## Chair UNESCO of Telemedicine - Activities in Iberoamerica

*www.teide.net/catai/catedra_**unesco**/activities_ib.htm*

Activities in Iberoamerica. Here we show you some interesting links about our activities in Iberoamerica. Iberoamerica. Colaboration with Thymbra y GNU health ...

## UNESCO chair woman of Telemedicine

*www.teide.net/catai/catedra_**unesco**/catedra_**unesco**_ing.htm*

The University of La Laguna have since 16 of September of 1999 the first *UNESCO chair* of *Telemedicine*. The sign of the agreement took place in Paris (see ...

## Canarias - Encuentro Unesco - Patronat Sud Nord - FGUV

*www.fundacio.es › Home › Spain UNESCO´s Chairs › Canarias*

The mission of the *UNESCO Chair*, inside the parameters of the UNESCO´s ... learning Master in *Telemedicine* and Bioengineering applied to *telemedicine*.

## Telemedicina | Cátedra Unesco en la Universidad de La ...

*catai.net/blog/*

... hardware or software that can be managed by themselves at a low cost in a productive REVERSE INNOVATION in which the *UNESCO Chair* of *Telemedicine* ...

## Translation of UNESCO Chair in Telemedicine in Spanish

*translation.babylon.com › Spanish Translation*

Translation of *UNESCO Chair* in *Telemedicine* in Spanish. Translate *UNESCO Chair* in *Telemedicine* in Spanish online and download now our free translator to ...

## Handbook of Telemedicine

*https://books.google.es/books?isbn=9051994133* - Traducir esta página

Olga Ferrer-Roca, Marcelo C. Sosa-Iudicissa - 1998 - Medical

Handbook of *Telemedicine* Edited by Olga Ferrer-Roca President CATAI Consortium Responsible for the First *UNESCO Chair* of *Telemedicine* Full Professor of ...

## E-Health Systems Quality and Reliability: Models and ...

*https://books.google.es/books?isbn=161692845X* - Traducir esta página

Moumtzoglou, Anastasius - 2010 - Technology & Engineering

Got the *UNESCO Chair* of *Telemedicine* in 1999 for the University of La Laguna. Since 1996 train on *Telemedicine* the students of medicine and Computer ...

## E-Health Technologies and Improving Patient Safety: ...

*https://books.google.es/books?isbn=1466626887* - Traducir esta página

Moumtzoglou, Anastasius - 2012 - Medical

She got the *UNESCO Chair* of *Telemedicine* in 1999 for the University of La Laguna. Since 1996, she trains the students of Medicine and Computer Science on ...

### e-Study Guide for: Health Economics: Theory, Insights, and ...

*https://books.google.es/books?isbn=1619064766* - Traducir esta página

Cram101 Textbook Reviews - 2012 - Education

*UNESCO Chair* of *Telemedicine* d. Asynclitic birth 3. Health insuranceis insurance that pays for medical expenses. It is sometimes used more broadly to include ...

### Unesco Chairs: Levon Chookaszian, Unesco Chair in ...

*https://books.google.com/.../**Unesco_Chairs**.html?id...* - Traducir esta página

Title, *Unesco Chairs*: Levon Chookaszian, *Unesco Chair* in *Telemedicine*, Infostate, Fouzia Rhissassi, Institute of Biochemistry and Biophysics. Editor, LLC ...

### UNITWIN/UNESCO Chairs Programme Progress report ...

*docplayer.net/2381829-Unitwin-**unesco**-**chairs**-prog...*

Items 1 - 7 - UNITWIN/UNESCO Chairs Programme Progress report 2009-2010. Period of activity: 2009-2010. Title: *UNESCO CHAIR TELEMEDICINE* ...

### Ferrer Roca O - Citas de Google Académico

*scholar.google.es/citations?user=l3rnjkgAAAAJ&hl=es*

UNESCO Chair Telemedicine, Full professor Pathology - teide.net

*UNESCO Chair Telemedicine*, Full professor Pathology ... Handbook of telemedicine. O Ferrer-Roca ... What do physicians think of telemedicine? A survey in ...

### IWEEE 2014 : Social Medicine

*www.iweee.org/2014-las_palmas/speakers.html*

Got the **UNESCO Chair** of **Telemedicine** in 1999 for the University of La Laguna. Since 1996 train on **Telemedicine** the students of medicine and Computer ...

### Telemedicine. Copcar warns about your cardiac status ...

*www.copcar.es/en/Telemed.html*

**Telemedicine UNESCO chair**, CATAI. First distance DNA quantification in the world applied to image analysis of prognostic factors in breast cancer. 1999.

### Telemedicine Workshop 2011 - Speakers - Itg

***telemedicine**.itg.be/**telemedicine**/.../Default.aspx?...*

5th **Telemedicine** Workshop for Resource-limited Settings, ITM, Antwerp ... of the **UNESCO chair** for **telemedicine** and multidisciplinary teaching, and, in 2010, ...

### [PDF]RAFT – Telemedicine Network in Africa - ITU

*https://www.itu.int/.../wednesday2-%20RAFT-**Telem**...*

World Health Organization Collaborating Center for eHealth and **Telemedicine**. ○ **UNESCO chair** for **telemedicine** and distance learning. ○ Partnership with ...

### Ferrer Roca O - Google Scholar Citations

*https://scholar.google.de/citations?user...hl=de* - Traducir esta página

UNESCO Chair Telemedicine, Full professor Pathology - teide.net

**UNESCO Chair Telemedicine**, Full professor Pathology ... Handbook of telemedicine. O Ferrer-Roca ... What do physicians think of telemedicine? A survey in ...

### ICT 2015

*ec.europa.eu › ... › Digital Agenda for Europe*

Fac. Medicine. UNESCO Telemedicine. Chair. Spain. **UNESCO Chair Telemedicine**. Full profesor of Pathology. MD, PhD. Web site: http://www.teide.net/catai.

### Ferrer Roca O - Citazioni di Google Scholar

*scholar.google.it/citations?user=l3rnjkgAAAAJ...it* - Traducir esta página

UNESCO Chair Telemedicine, Full professor Pathology - teide.net

**UNESCO Chair Telemedicine**, Full professor Pathology ... Handbook of telemedicine. O Ferrer-Roca ... What do physicians think of telemedicine? A survey in ...

## Virtual Sonography Through the Internet: Volume ...

*https://tspace.library.utoronto.ca/bitstream/.../jmir.ht...*

de O Ferrer-Roca - 2001 - Citado por 15 - Artículos relacionados

[1]Chair of Pathology and *UNESCO Chair* of *Telemedicine*, University of La Laguna, Spain [2]Fellow at the *UNESCO Chair* of *Telemedicine*, Spain [3]Chief of the ...

## [PDF]Quality Control in Telemedicine - “CE” Label

*www.intechopen.com/download/pdf/14282*

16 mar. 2011 - 12. Quality Control in *Telemedicine* - “CE” Label. Prof. Dr. O. Ferrer-Roca MD. PhD. *UNESCO Chair* of *Telemedicine*. Faculty of Medicine.

## [PDF]Collaborative Systems for Pathology Applications - Bentham ...

*benthamopen.com/contents/pdf/.../TOPATJ-1-1.pdf*

de F Marcano - 2007 - Citado por 3 - Artículos relacionados

20 oct. 2007 - *UNESCO Chair* of *Telemedicine*, Department of Pathology, Faculty of ... Keywords: Collaborative systems, *telemedicine*, SSVS®, JPEG2000, ...

## Presentation | UNESCO Chair in Education & Technology ...

***unescochair**.blogs.uoc.edu/.../global-ageing-presenta...*

Innovative solutions such as telecare and *telemedicine* has been presented as solutions more effective in economic terms and in compliance with important ...

## Ferrer Roca O - Mga Pagsipi ng Google Scholar

*scholar.google.com/citations?user=l3rnjkgAAAAJ...*

UNESCO Chair Telemedicine, Full professor Pathology - teide.net

*UNESCO Chair Telemedicine*, Full professor Pathology ... Handbook of telemedicine. O Ferrer-Roca ... What do physicians think of telemedicine? A survey in ...

## Canarias - Sociedad Española de Anatomía Patológica

*www.seap.es › Territoriales*

Dr.O.Ferrer-Roca *UNESCO Chair* of *Telemedicine*. Chair of Pathology. Chair of *Telemedicine*. Telefonica SL. Faculty of Medicine. University of La Laguna.

## IMA Telemedicine Day 24th March - Indian Medical ...

*www.ima-india.org/ima/left-side-bar.php?scid=318*

*Telemedicine* in Healthcare part 1 ... IMA Padma Awardees Doctors Forum Initiative · Letter - IMA-PvPI Initiative · IMA *UNESCO CHAIR* BIOETHICS INITIATIVE ...

## Tele-virtual sonography - De Gruyter

*www.degruyter.com/.../$002fj$002fjpme.2006.34.is...* - Traducir esta página

de O Ferrer-Roca - 2006 - Citado por 14 - Artículos relacionados

1 *UNESCO Chair* of *Telemedicine*, University of La. Laguna, Canary Islands, La Laguna, Sta Cruz Tenerife,. Spain. 2 Chairman of Department of Obstetrics and.

## JMIR-Virtual Sonography Through the Internet: Volume ...

*www.jmir.org/2001/2/e21*

de O Ferrer-Roca - 2001 - Citado por 15 - Artículos relacionados

[1]Chair of Pathology and *UNESCO Chair* of *Telemedicine*, University of La Laguna, Spain. [2]Fellow at the *UNESCO Chair* of *Telemedicine*, Spain. [3]Chief of the ...

## V. Forthcoming activities

1. SUMMER COURSE OF THE ULL. Adeje 2016 : Telemedicina y Salud electrónica
2. STUDENTS EXCHANGE TO TENERIFE. Cancelled due to the lack of financial support
3. STUDENTS TRAINING IN TENERIFE. Cancelled due to the lack of financial support
4. SCHOLARSHIPS FOR IBEROAMERICAN BIOENGENEERS. Cancelled due to the lack of financial support
5. EU to IBEROAMERICA INTERCHANGE. Done exclusively on line.
6. MASTER OF HEALTHCARE LAWS 2015-2016. UIB. University of Iles Ballears. At distance.
7. VIRTUAL LABS IN SUDAMERICA. On line
8. LUXEMBOURG Med-e-Tel 2016. Cancelled due to lack of financial support.
9. SUPERCOMPUTER ACTIVITY IN SOLO MEDICINE-UPB (Barcelona). Cancelled due to the lack of financial support
10. ON LINE TELECONSULTATIONS
11. AFRICAN ADVISE ON THE USE OF DiY, DII, Open software and Hardware and Free software. At distance, on line.
12. IBEROAMERICA ADVISE ON TELEMEDICINE TRAINING. At distance. On Line.
13. IWEEE 2016. International Workshop on eHealth in Emerging Economies.
14. Cooperation with Institute of Tropical Medicine and Campus Africa. July 2016
15. WHO reports on Medical Devices.

## VI. Development prospects

The activities of the Chair started on 1999 and have expanded during the period 2013-2015 to the following countries:

1. – Israel
2. – Beijing- China
3. – Portugal
4. –Tuckmenistan
5. – Gabon
6. – Italy- Medical Device Design Centre in Milan.
7. – Liege- Belgium
8. – Servia
9. – Georgia
10. – Zilina. Slovakia.

## Annex 1

### Target groups

| | |
|---|---|
| Undergraduate students | YES |
| Graduate students | YES |
| Postgraduate students | YES |
| Academics | YES |
| Public administrators | YES |
| Employees from industry, or other private organizations | 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 *(Please specify)* | YES: VOLUNTIERS |

# Annex 2

## Geographical Coverage

- National
  - **Spain**: Canary Islands (7 Islands)
    Cataluña
    Madrid
    Valencia
    Balears Islands
    Cordoba
    Extremadura
    Murcia
- Regional
  - **África**: Nairobi-Kenya, Makere-Uganda, Marrocco, Argelia; Cabo Verde, Senegal, Republic. Du Benin, Guinea Ecuatorial, Gabon.
  - **Arab States**: Turkey-Istambul, Iran
  - **Asia/ Pacific**: Tuckmenistan, Kazakhstan, Israel-Tel Aviv-Haifa, New Delhi-India, China-Beijing, Georgia
  - **Eastern and Central Europe**: Sofia-Bulgaria, Rumania, Russia-Perm & Moscow- Albania – Lithuania Budapest. Hungary. Slovenia, Slovakia
  - **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, Cyprus, Liege-Belgium.
  - **Ibero-America**: Argentina-Entre-Ríos, Venezuela-Maracaibo, Venezuela-Caracas, Brazil- Rio Grande do Sur + Norwest Amazonia. Colombia-Barranquilla.
  - **USA**: Massachusets, California
- Interregional

## Annex 3

### Funding sources

| Funding source | Type of Organization / Institution | Period | Amount US$ |
|---|---|---|---|
| **UNESCO Contribution** | | 2013/15 | 0 |
| **Other contributions:**<br>*Please specify, for each contribution:*<br><br>*Institution, City, Country*<br>▪ | Host Institution<br>Partner universities/ institution<br>Governmental body<br>Other public institution<br>*Please specify*<br>UN Agencies<br>IGO´s<br>NGO´s: CATAI<br>Industry<br>Other private sources<br>*Telefónica SL –Spain*<br>*CajaSiete- Canary I.-Spain* | 2013/15<br>2013/15<br><br><br><br><br><br>2013/15<br><br><br>2013/14<br>2014/15 | 0<br>9000<br><br><br><br><br><br>20000<br><br><br>35000<br>12000 |
| TOTAL | | 2013/15 | 66000 € |

# Annex 4

## Outputs-I

### Form 1: Publications

**1. Title of activity: STANDARDS IN TELEMEDICINE. (11 publications)**

**1. Title. System on Chip (SoC) devices in Telemedicine from Lab on Chip (LoC) to high resolution images.**

Publisher(s): CATAI editions 2013 Tenerife. Canary Islands. Spain ISBN: 978-84-615-6080-6
Year: 2013
Number of pages: 78

Type of document/material:

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

Teaching/learning material
Language(s): >Bilingual (English/Spanish)
Main keywords (4 or 5):

**SHORT ABSTRACT**
*(Brief description of the content in English, French or Spanish)*
La capacidad de miniaturización en micro o nano MEMs permite en la actualidad una gran calidad de imagen y procesado en aparatos portables, particularmente en teléfonos móviles inteligentes que mantienen el procesado local o en la nube. Igualmente el procesado de las imágenes digitales permiten en la actualidad técnicas de superresolucion, enfoque en todos los planos e identificación holográfica que aseguran capacidades diagnósticas y de detección nunca antes imaginadas.
A eso se une la exigencia del WEF (world económica fórum) sobre la sanidad a la que le demandan 3 actualizaciones esenciales su inmersión total digital, su innovación en la provision de servicio y la prevención creando ciudades sanas. En cualquiera de ellas se requerirá un entorno BYOD (bring your own device) y la utilización de las modernas técnicas de gamificacion para mantener la productividad y la motivación de los trabajadores sanitarios.
Las ventajas y los inconvenientes que todas ellas aportan a la sanidad serán analizadas con la presentica de los expertos mundiales de las materias. Son retos que en muchos casos requieren renovación o innovación inversa pero con las técnicas de QoS (Quality of Service) que demandan nuestros países tanto en USA como en la UE.

**2. Title: The Anatomy of an Optical Biopsy Semantic Retrieval System.**

Publisher(s): IEEE Multimedia. Q2 36/100
Producer and/or distributor *(with address)*: vol 19 (n2)
Year: 2013
Number of pages: 12 (pp.16-27)
Type of document/material:

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

Teaching/learning material
Language(s): English.
Main keywords (4 or 5): Multimedia, metadata, multimedia databases, standards, image retrieval, video retrieval, feature measurement, healthcare

SHORT ABSTRACT

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

This paper addresses the question of how to build a case-based computer-aided diagnosis system that assists physicians and other medical personnel in the inter-pretation of optical biopsies obtained through confocal laser endomicroscopy (CLE). An optical biopsy is an optic diagnostic method capable to analyze the tissue in surface and in deepness without the need to extract it from the body. The system allows users to navigate and search over an image database containing optical biopsies of the human colon recorded with CLE. Users are able to retrieve information about precedent diagnostics by providing an example CLE image for content based image retrieval (CBIR), by using keywords for structured retrieval. The system's CBIR approaches a novel algorithm for automatic feature extraction in CLE images, showing results on inferring semantic metadata from low-level features. In order to ensure the interoperability with potential third-party applications, the system provides an interface compliant with the recent standards ISO/IEC 15938-12:2008 (MPEG Query Format) and ISO/IEC 24800 (JPEG Search).

**3. Title: Health 4.0 in the i2i era**

Publisher(s): International Journal of Reliable and Quality E-Healthcare (2011)
Producer and/or distributor (with address): vol 1 (n1)
Year: 2012
Number of pages: 15 (pp. 43 - 57)

Type of document/material:

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

Teaching/learning material
Language(s): English & Spanish.
Main keywords (4 or 5): iPhone, mHealth, Medical device, standards, quality

SHORT ABSTRACT

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

The acceptance of iPhones, iPads, and iPods in medical environments, as well as the FDA approval of several diagnostic-prognostic-distant care-management applications, demonstrates the modern medicine trend to introduce mobile applications initiating the i2i era. Furthermore, Cloud and Internet applications ranging from non-quality control up to intelligent-quality-control data base management anytime, anywhere, are the basis of what is called Health 4.0. The present editorial listed approved FDA applications and future deployments, including three personal projects in iHealth: blood-pressure monitoring, iAnapath and the i-EEG control in child Attention Deficit Disorder.

**4. Title: Health care management innovation in the net. Cloud- SoC- LaboC and high resolution image techniques change the way to practice medicine.**

Publisher(s): CATAI Editions 2013.
Producer and/or distributor (with address):
Year: 2013
Number of pages: 15-17, 64-69 (9 pages)

Type of document/material:

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

Teaching/learning material
Language(s): English & Spanish.
Main keywords (4 or 5):
Multimedia, metadata, multimedia databases, standards, image retrieval, video retrieval, feature measurement, healthcare

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
We cover every year the innovations in Telemedicine. This year are focused on management, specifically on BYOD or bring your own device and on gamification. From the technical point of view, TM devices expect dramatic innovation with the SoC (system on chip) and the new HD image techniques. TM devices are now miniaturized and capable to be included in smart phones.

5. **Title: IWEE 2015: BYOD-Bring your own device.**

Publisher(s): IWEE 2015.
Producer and/or distributor (with address):
Year: 2013
Number of pages: (5 pages)

Type of document/material:
- Book X
- Periodical
- Others (specify, please)

Teaching/learning material
Language(s): English & Spanish.
Main keywords (4 or 5):
BYOD, Network, gammification

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
Simplification of the devices and bring your own devices in the work environment is the main goal to the next generations network management solutions.

6. **Title: Modification of the hand-held Vscan ultrasound and verification of its performance for transvaginal applications.**

Publisher(s): ULTRASOUND. Q2 6/31
Producer and/or distributor (with address): 53 (n1)
Year: 2013
Number of pages: (5 pages)

Type of document/material:
- Book
- Periodical X
- Others (specify, please)

Teaching/learning material
Language(s): English.
Main keywords (4 or 5):
Ultrasound, Hand-held device, Transvaginal.

SHORT ABSTRACT

7. **Title: Quality of employment conditions and employment relation in Europe. A report based on the fifth European Working Conditions Survey.**

Publisher(s): Eurofond
Producer and/or distributor (with address): Dublin
Year: 2013
Number of pages: (56 pages)

Type of document/material:

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

Teaching/learning material
Language(s): English.
Main keywords (4 or 5):
Employment, Europe, .

SHORT ABSTRACT
This report provides an in-depth analysis of the quality of employment conditions and employment relations in the European employed workforce. Employment in the report is viewed as the contractual relationship between an employer and a worker, specifically how the rights and duties embedded into the relationship are translated into real rights. The analysis is mainly based on data from the fifth European Working Conditions Survey (EWCS), conducted in 2010. Where appropriate, comparisons with earlier waves of the EWCS are made. An executive summary is also available

**8. Title: Big Data versus Small Data. The FOG**

Publisher(s):Proceeding of the IEEE. Q1 7/249
Producer and/or distributor (with address):
Year: 2014 vol1 n1 pp:260-1
Number of pages: (2 pages)

Type of document/material:

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

Teaching/learning material
Language(s): English.
Main keywords (4 or 5):
Cloud, Fog, Bigdata, Smalldata, Health 4.0, mHealth, Intelliagents, agents, PHA, Personal health assistants.

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
Facing user experience in Health care data coming from Health 4.0 in the IoE (internet of everything) two serious distinctions appear. Not all data processed in "The Cloud" is Big Data, on the contrary there is a relevant proportion of Small Data that should be processed in "The Fog".
In this statement there are several new references that should be understood.To whom it belongs, what to do with it and how to do it are the main differences.
Characteristics

| | ***BIG DATA*** | ***SMALL DATA*** |
|---|---|---|
| *Belongs to* | *Governement/State* | *Individuals/Patient* |
| *Anonimized* | *YES* | *NO* |
| *Encripted* | *NO* | *YES* |
| *Processed in* | *The Cloud* | *The Fog* |
| *Response* | *Months / Years* | *Minutes / On time* |

| | | |
|---|---|---|
| *Obtained from* | *Institutions/EHRs* | *Sensors / At home / PHR* |
| *Procesed by* | *Data Base tools* | *e-Agents* |
| *Stored* | *By Govern/Distributed* | *By Individuals/ Personal Assistants* |
| *Useful* | *for Decision makers* | *for Individuals* |

It is clear therefore that in the cloud or in the fog both type of data cannot be mixed or processed together.

**9. Title: Placental virtual Biopsy: 3D-US hemodynamics of normal pregnancy versus gestational diabetes.**

Publisher(s): J. Biomedical Graphics and Computing
Producer and/or distributor (with address): Canada. Science Education
Year: 2014, vol 4, nº1, pp:10-20
Number of pages: (10 pages)

Type of document/material:

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

Teaching/learning material
Language(s): English.
Main keywords (4 or 5):
Virtual Biopsy, Placenta, development, diabetes.

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
Objectives: We used three-dimensional ultrasound with trans-abdominal Power-Doppler (3D-US PD) to determine placental vascular evolution in normal pregnancies (NP) and in insulin-dependent Gestational Diabetes Pregnancies (GDP).

Study design: We obtained 473 measurements from 43 NP at 20 weeks-40 weeks gestation and 122 measurements from 70 insulin-dependent GDP at 22 weeks-40 weeks. Standardization was achieved recording three successive placental vascular tree volumes, measuring the spherical volume between the chorionic and basal plates always under or near funicular insertion. Parameters analysed were: mean intensity of blood flow (Flow Index, FI); percentage of volume occupied by vessels (Vascularisation Index, VI); and intensity of blood flow in the volume occupied by vessels (Vascularisation-flow index, VFI).

Results: In NP, FI increased throughout early pregnancy and decreased before delivery and correlated with fetal parameters. In contrast, in GDP, FI was high from the onset, better correlated with placental parameters, and had a diagnostic cutoff value of 45, which was only found in 7% of NP at the end of the pregnancy. VI was variable and had a low diagnostic value, being related to placental parameters; VI values were significantly lower in NP (17.4 ± 7.4%) than in GDP (21 ± 12%) with a diagnostic cutoff point at 31%. In NP, FI-peak was at 32 weeks, two weeks after the VI-peak, while VFI showed no significant differences. Conclusions: The results showed that placental blood flow (FI) was related to fetal circulation, while the percentage of vessels per volume (VI) was related to maternal circulation. 3D-US PD indicated a diagnosis of GDP for FI > 45 and VI > 30%. We also discuss the values of change in VI that predict changes in fetal FI.

**10. Title: HFOG. Small versus Big Data.**

Publisher(s): The international eHealth. Malina J & F.Lieves Ed.
Producer and/or distributor (with address): Med-e-Tel 2015. Luxembourg
Year: 2015
Number of pages: (15 pages)

Type of document/material:

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

Teaching/learning material
Language(s): English.
Main keywords (4 or 5):
Small Data, Health Fog, Cloud, Healthcloud, Integrated Care.

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
Data used in health care is being analyzed and stored in data centers. This data is part of what today we refer as Big Data. Additionally, in the last few years it has been an explosion of IoT devices, such as sensors and actuators. A lot of them are used to obtain health related parameters. In this paper the concept of Health Small Data (HSD) is introduced. HSD refers to the data received from these IoT devices and additional personal health information for each person. We claim that thanks to the convergence of Internet, IoT and HSD a new way to provide Health Assistance in a very personal, secured and (ultra-fast) can be deployed through the implementation of Personal Health Assistants (PHA) in nodes closer to the end user, offering a much reduced latency and releasing the medical system of simple. The technology platform for PHA is Fog Computing, through the deployment of Fog nodes that will handle HSD regarding the patients under its area of actuation. To ensure privacy and ownership of the information, this data will be maintained in the lower aggregation nodes of the Fog hierarchy. If a patient move to a new location served by a different Fog node then the HSD will be transferred to the new node in a secured (encrypted) way.

**11. Title: 4T-Medicine and Persson´s Dilemma in healthcare.**

Publisher(s): Researchgate DOI: 10.13140/RG.2.1.4884.3686
Producer and/or distributor (with address):
Year: 2015
Number of pages: (2 pages)

Type of document/material:

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

Teaching/learning material
Language(s): English.
Main keywords (4 or 5):
4T, medicine, eHealth, W2P, F2F, TU

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
Telemedicine (TM) deserves serious consideration in the present economic situation. In such dire circumstances, social support offered though Transversal Units (TUs) is of paramount importance, particularly if provided at a distance. This holistic endeavor merges various healthcare services such as specialized, emergency, social, home-care, preventive, pediatric and mental health care, all involving health transport, information technology (IT) and pharmacy logistics.
Most TM programs rely on rudimentary technical solutions despite the availability of simple state-of-the-art technology. Videoconferencing with new-generation HD1-TV-sets that incorporate Internet allows medical and social assistance to be brought closer to users at

negligible cost (eg. using Skype). Nevertheless, willingness to pay (W2P) has been identified as an element of success in USA

# Annex 5

## Outputs-II

### Form 2: Multimedia material

**Title of activity: TELEMEDICINE-CD (12 publications)**

1. **Title: CATAI Telemedicine-CD. ISBN 84-923357-2-6**
   Producer and/or distributor *(with address)*: CATAI
   Year: 1999-2016
   Teaching/learning material X
   Type of material:
   - Video
   - CD ROM X with videos
   - Videoconference:
   - Other type of material

   Duration: 643 MB
   Format: Word, Html, /*ppt, /mpeg*
   Language(s): English- Italian-Spanish
   Main keywords (4 or 5): Telemedicine

   SHORT ABSTRACT
   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 what he 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, organized and in some way standardized. The main purpose of this book is to structure the basic knowledge linked to teaching to provide or to practice 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 neither 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 careers and professions should consider structured and sufficient training in Telemedicine.

2. **Title: EU-Master of Telemedicine and Bioengineering applied to Telemedicine**
   Producer and/or distributor *(with address)*: CATAI Ed. ISBN 84-609-2162-X
   Year: 2004-16
   Teaching/learning material X
   Type of material:

- Video DVD with text & multimedia X
- CD ROM
- Videoconference:
- Other type of material

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 Bioingeneering applied to telemedicine any people who are interested. No requirements needed, except a DVD reader in the computer.

**3. 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: 2004-16
Teaching/learning material X
Type of material:

- Video DVD with text & multimedia X
- CD ROM
- Videoconference:
- Other type of material Other multimedia material

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 trains the people in Quality control and security in e-health. It includes text, presentations and videos given by the more representative 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.

**4. 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: 2005-16
Teaching/learning material X
Type of material:

- Video DVD with text & multimedia X
- CD ROM
- Videoconference:
- Other type of material

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 texts, presentation and videos. Topics covered in these 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.

5. **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: 2006-15
   Teaching/learning material X
   Type of material:
   - Video DVD with text & multimedia X
   - CD ROM
   - Videoconference:
   - Other type of material

   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 these 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.

6. **Title: EU-Master of Telemedicine and Bioengineering applied to Telemedicine. Volume IV.**
   Producer and/or distributor *(with address)*: CATAI Ed. ISBN: 978-84-612-1102-9.
   Year: 2007-16
   Teaching/learning material X
   Type of material:
   - Video DVD with text & multimedia X
   - CD ROM
   - Videoconference:
   - Other type of material

   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 4 of the multimedia material produced for distant training containing text, presentation and videos. Topics covered in these editions include Global vision of standard in Telemedicine. Quality control in Teleophthalmology and OCT. Telemedicine cost in Primary Attention. New aspects in the DICOM standard. Wavelet compression on medical imaging. Image quality assessment. Identity management Quality of services in 4G networks. Telecardiology quality and reliability assurance frameworks. IHE in Spain. Data Protection Laws. Advances in Sanitary Regulation. OneQL: Efficiently Querying the Health Domain in the Semantic Web. Telemetry. Calibration of monitors in Radiology. Wide Spain. Standards of virtual reality. Environmental intelligence in telemedicine. Decision support system and robotics. Stitching & transmission in JPEG2000. Telemedicine in the Sea. Teleophtalmology in the HUC. Distance learining in surgery. Quality control and quality assessment medical device standards. Medical image modalities. Cardiac frequency and detection of cardiac events. Image stictchin in medicine. Telepsychyatry efficacy. Hand-held computer in medicine. Spanish law and Telemedicine. Ethics in Telemedicine.

7. **Title: EU-Master of Telemedicine and Bioengineering applied to Telemedicine. Volume V.**
   Producer and/or distributor *(with address)*: CATAI Ed. ISBN: 978-84-612-8290-6.
   Year: 2008-16
   Teaching/learning material X
   Type of material:
   - Video DVD with text & multimedia X
   - CD ROM
   - Videoconference:
   - Other type of material

   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 5 of the multimedia material produced for distant training containing text, presentation and videos. Topics covered in these editions include Global vision of Quality control in Telemedicine. Biobanking.

8. **Title: EU-Master of Telemedicine and Bioengineering applied to Telemedicine. Volume VI.**
   Producer and/or distributor *(with address)*: CATAI Ed. ISBN: 978-84-613-7245-4.
   Year: 2008-16
   Teaching/learning material X
   Type of material:
   - Video DVD with text & multimedia X
   - CD ROM
   - Videoconference:
   - Other type of material

   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)*
   Los avances tecnológicos en el campo de la visión microscópica de las imágenes o la capacidad diagnóstica de una gran variedad de técnicas ópticas, obligan a analizar y reubicar el papel del Anatomopatólogo en la medicina. Ni los microscopios, ni la tinción, ni el procesado de tejidos son hoy en día imprescindibles para diagnosticar una lesión. Se hace necesario contar con publicaciones morfológicas que determinan el estándar de acuerdo con la técnica empleada de estas biopsias in vivo o biopsias ópticas no disruptivas.

9. **Title: EU-Master of Telemedicine and Bioengineering applied to Telemedicine. Volume VII.**
   Producer and/or distributor *(with address)*: CATAI Ed. ISBN: 978-84-614-5996-4.
   Year: 2009-16
   Teaching/learning material X
   Type of material:
   - Video DVD with text & multimedia X
   - CD ROM
   - Videoconference:
   - Other type of material

   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)*
IoT. El Internet de los Dispositivos médicos. Salud 2.0 a Salud 3.0, trata de los aspectos tecnológicamente mas avanzados sobre la gestión de los dispositivos a distancia a través de Intra o Internet, con identificación univocas y altas en la red, que permiten la ubicación, gestión y modificación a distancia de los dispositivos médicos o mecánicos asociados ( ejem: camillas…) de forma que se facilite no solo un MRP (management resource planning) sino una telemetría en condiciones de permitir la monitorización de los pacientes. En el segundo apartado nos movemos desde la Salud electrónica 2.0 a través de Internet en la que la calidad y control es limitado a la Salud 3.0 en la que se priman los criterios de control de calidad en todos los ámbitos de automatización y robotización.
Para ello contamos con expertos internacionales, especialmente seleccionados por sus aspectos innovadores en su clínica diaria o en sus investigaciones y por su apuesta por la estandarización y calidad de la asistencia.

**10. Title: Title: EU-Master of Telemedicine and Bioengineering applied to Telemedicine. Volume VIII.**

Producer and/or distributor *(with address)*: CATAI Ed. ISBN: 978-84-615-6144-5
Year: 2011-2016
Teaching/learning material X
Type of material:

- Video DVD with text & multimedia X
- CD ROM
- Videoconference:
- Other type of material

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)*
Móviles 4G en Telemedicina, trata de los aspectos tecnológicamente más avanzados sobre la gestión de los dispositivos a distancia a través de Telefonía móvil. Particularmente:
1.- El uso de los móviles de última generación para la medicina y las aplicacionesH2H (health2health) y las Smart-GRID o el acceso universal en la Nube, además de los aspectos técnicos del Packet Backhaul Technology, o las estrategias packet-core.
2.- El control de calidad de las aplicaciones de Telemedicina
3.-El informe:"Telecommunications, IT and Heathcare: Wireless Networks, Digital Healthcare and the Transformation of US Healthcare, 2006-2011″ en el que se especifica que en USA la industria de TIC relacionadas con la salud se incrementara en un 8.4% en 5 años cubriendo desde $7.5 billones en 2008 a $11.3 billones en 2013. El gasto sanitario pasara de ser un 6% del PIB a un 16% a un 18%. La industria sanitaria se ve forzada a operar de forma más eficiente, y un elemento central será la creación de redes eficientes capaces de compartir no solo datos sino imágenes de calidad para el diagnóstico remoto que se llevara a cabo con personal
Medico altamente cualificado. Un coste enorme se pierde en el sistema en la interfaz médico-paciente – tiempo de desplazamientos, buscar plazas a los enfermos, buscar la atención que requieren, administrar la atención etc… - Por ello el control remoto es algo esencial.
Para ello contamos con expertos internacionales, especialmente seleccionados por sus aspectos innovadores en su clínica diaria o en sus investigaciones y por su apuesta por
la estandarización y calidad de la asistencia.

**11. Title: Title: EU-Master of Telemedicine and Bioengineering applied to Telemedicine. Volume IX.**

Producer and/or distributor *(with address)*: CATAI Ed. ISBN: 978-84-615-6081-3
Year: 2012-2015

Teaching/learning material X
Type of material:

- Video DVD with text & multimedia X
- CD ROM
- Videoconference:
- Other type of 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)*
Sanidad en la nube, i-Cloud y Consulta masiva trata los aspectos relacionados con " la nube sanitaria", el papel que la telefonía móvil desempeña en este tipo de actividades, así como la repercusión que tiene el denominado " Crowsourcing" en el contexto sanitario que permite a los médicos consultar con los mayores expertos en las distintas áreas sanitarias.
La tecnología debe asegurar un sistema de provisión de servicios en sanidad, viable económicamente, descentralizado y ubicuo todo ello a bajo coste por ello los teléfonos inteligentes y los servicios en la Nube van a ser determinantes en esta evolución. El almacenamiento masivo de datos y su accesibilidad y control remoto con virtualización disminuirán costes y personal. se tratan en el presente libro, que se basara principalmente en cómo pueden los profesionales médicos valerse de las nuevas tecnologías y la comunicación ( TICS), para hacer más eficiente las asistencia a distancia.
Para ello contamos con expertos internacionales, especialmente seleccionados por sus aspectos innovadores en su clínica diaria o en sus investigaciones y por su apuesta por la estandarización y calidad de la asistencia.

**12. Title: Title: EU-Master of Telemedicine and Bioengineering applied to Telemedicine. Volume X.**

Producer and/or distributor *(with address)*: CATAI Ed. ISBN: 978-84-615-6081-3
Year: 2013-2016
Teaching/learning material X
Type of material:

- Video DVD with text & multimedia X
- CD ROM
- Videoconference:
- Other type of 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)*
System on Chip (SoC) devices in Telemedicine from Lab on chip (LoC) to high resolution images, summarized the most advanced, miniaturized, reverse innovation Solution for better Access to Healthcare. Mostly of them based in smartphones, some of the innovations are based on the DIY or do it yourself phylosophy.

SUMMARY

DVDs: MASTER EUROPEO EN TELEMEDICINA Y BIOINGENIERÍA APLICADA A LA TELEMEDICINA

- VOLUMEN 1 ISBN: 84-609-2163-8
- VOLUMEN 2 ISBN: 84-609-6488-4
- VOLUMEN 3 ISBN: 84-611-3589-X
- VOLUMEN 4 ISBN: 978-84-612-1102-9
- VOLUMEN 5 ISBN: 978-84-612-8290-6
- VOLUMEN 6 ISBN: 978-84-613-7245-4
- VOLUMEN 7 ISBN: 978-84-614-5996-4
- VOLUMEN 8 ISBN: 978-84-615-6144-5
- VOLUMEN 9 ISBN: 978-84-615-6081-3
- VOLUMEN 10 ISBN: 978-84-616-2364-8

**Title of activity: TELEMEDICINE GROUP ON LINE (11 On line platforms)**

1. **Title: CATAI WEBPAGE www.teide.net/catai**

Producer and/or distributor *(with address)*: CATAI
Year: 1997-2016
Teaching/learning material X
Type of material:

- Video
- CD ROM
- Videoconference:
- 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 a main objective the spread of the Telemedicine in Spain and in developing countries. The non-for profit association for the CATAI (Center of Advanced Technology in Image Analysis) supports Telemedicine activities and studies in the field of:
Image Analysis at distance
Data transmission
Videoconsultation and videoconferences
On Line training
Distant telequantitation.
The Winter Courses of the CATAI can also be followed on line in a video streaming during its production by means of the Helix Videoserver providing Real Media output that contains the Power Point presentation together with the video image of the speaker.

2. **Title: Telemedicine BLOG http://www.catai.net/blog**

Producer and/or distributor *(with address)*: ULL
Year: 2008-2016
Teaching/learning material
Information material X
Type of material:

- Video
- CD ROM
- Videoconference:
- Other type of material X
- *(Please specify):* News

Duration: Always updated. 1015 posts (102 posts in 2015)
Language(s): English- Spanish

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
The blog of the TELEMEDICINE chair displays all outstanding information regarding the chair itself, the cooperation activity and the UNESCO activity related with the chair of telemedicine, as well as the mission carried out in rural and depressed areas.

3. **Title: Facebook Unesco Telemedicine Profile**
**https://www.facebook.com/unesco.telemedicine**

Producer and/or distributor *(with address)*: CATAI
Year: 2010-2016
Teaching/learning material
Information material X
Type of material:

- Video
- CD ROM
- Videoconference:
- Other type of material X
- *(Please specify):* News

Duration: Always updated. Everyday posts.
Language(s): English- Spanish

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

The Unesco Telemedicine Facebook profile displays all outstanding information regarding the telemedicine, highlighting news that involve innovation, new standards, regional problems, etc, with everyday posts.

4. **Title: Youtube Channel** **http://www.youtube.com/user/cataiyt**

Producer and/or distributor *(with address)*: CATAI
Year: 2011-2015
Teaching/learning material
Information material X
Type of material:

- Video X
- CD ROM
- Videoconference:
- Other type of material

Duration: 727 uploaded videos, 74.636 video plays, 619 subscriptors.
Language(s): English- Spanish

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
The Youtube Channel displays teaching material in medicine and telemedicine technologies and innovations. There is a wide offer of educational material, about the top issues relating telemedicine innovation, such as BYOD, mobile health applications, health cloud, etc.

5. **Title: Twitter Unesco Telemedicine Profile** **https://twitter.com/UnescoTeleMed**

Producer and/or distributor *(with address)*: CATAI
Year: 2011-2013
Teaching/learning material
Information material X
Type of material:

- Video
- CD ROM
- Videoconference:
- Other type of material X
- *(Please specify):* News

Duration: 6610 tweets. 491 followers.
Language(s): English- Spanish

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
The Unesco Telemedicine Twitter profile displays all outstanding short information regarding the telemedicine, highlighting news that involve innovation, new standards, regional problems, etc, with everyday posts.

6. **Title: Health Crisis Map** **https://unescotelemedicine.crowdmap.com/**

Producer and/or distributor *(with address)*: CATAI
Year: 2011-2015
Teaching/learning material
Information material X
Type of material:

- Video
- CD ROM
- Videoconference:
- Other type of material X
- *(Please specify):* News

Duration: 208 Posts.
Language(s): English- Spanish

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
The Health Crisis Map geographically displays news about the problems generated by the economic crisis, making focus in the Spanish Health System and the lack of resources.

7. **Title: Linkedin Unesco Telemedicine Profile** **http://es.linkedin.com/pub/unesco-telemedicine/43/aa2/93b**
   Producer and/or distributor *(with address)*: CATAI
   Year: 2011-2016
   Teaching/learning material
   Information material X
   Type of material:
   - Video
   - CD ROM
   - Videoconference:
   - Other type of material X
   - *(Please specify):* Discussion Groups

   Duration: 756 followers.
   Language(s): English- Spanish

   SHORT ABSTRACT
   *(Brief description of the content in English, French or Spanish)*
   The Unesco Telemedicine Linkedin profile works as a nexus with other people and organizations. Participations in discussion groups as "Horizont 2020 Framework".

8. **Title: Slideshare profile:** **http://www.slideshare.net/OFRoca/edit_my_uploads?page=1**
   Producer and/or distributor *(with address)*: CATAI
   Year: 2013-2016
   Teaching/learning material
   Information material X
   Type of material:
   - Video
   - CD ROM
   - Videoconference:
   - Other type of material X
   - *(Please specify):* Discussion Groups

   Duration: 20 uploads. 238 followers. 8782 views .
   Language(s): English- Spanish

   SHORT ABSTRACT
   *(Brief description of the content in English, French or Spanish)*
   The Unesco Telemedicine slide-share profile is very much appreciated since it post outstanding material related with innovation and humanistic prospective of the Healthcare.

9. **Title: Scoop-it profile:** **http://www.scoop.it/u/unesco-telemedicine/curated-scoops**
   Producer and/or distributor *(with address)*: CATAI
   Year: 2014-2015
   Teaching/learning material
   Information material X
   Type of material:
   - Video
   - CD ROM

- Videoconference:
- Other type of material X
- *(Please specify):* Discussion Groups

Duration: 1100 views- 60 uploads. 29 followers .
Language(s): English- Spanish

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
The Unesco Telemedicine Health 4.0 scoop-it section of curated information regarding Health 4.0 is a classical one since it updated all information regarding Humanization of Healthcare, DIY, mHealth, Equity in Healthcare.

**10. Title: Diabetes control http://193.145.112.231/CHS/**

Producer and/or distributor *(with address)*: CATAI
Year: 2002-2011
Teaching/learning material
Type of material:

- Video
- CD ROM
- Videoconference:
- 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 is available for medical people groups in English and in Spanish that is able to test Diabetes control at distance. It is accessible by the Internet and also using mobile phone SMS.

**11. Title: Anticoagulant treatment control at distance http://193.145.112.231/INR/**

Producer and/or distributor *(with address)*: CATAI
Year: 2002-2013
Teaching/learning material
Type of material:

- Video
- CD ROM
- Videoconference:
- 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 who either can be controlled at distance or want to control the patient at distance. It includes 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 the doctor to the patients and vice versa.

**Title of activity: DISTANT TEACHING**

1. **Title: http://alexandros.ccslab.aueb.gr/~ctc**

Producer and/or distributor *(with address)*: CATAI
Year: 2000-2013
Teaching/learning material X
Type of material:

- Video
- CD ROM
- Videoconference:
- 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; therefore, 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 trainer 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

2. **Title: Distant coaching and training(BREEZE) http://www.cataibreeze.ull.es/**

Producer and/or distributor *(with address)*: CATAI
Year: 2006-2013
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 a review of the students. On line questionnaires will be available in the future.

3. **Title: European master Telemedicine**
**http://www.teide.net/catai/inscripcion/MASTERESP.htm**
**http://www.bioingenieria.edu.ar/extension/secretaria/novedades/boletines/Boletin%20Institucional_76.htm**
Year: 2007-2015
Teaching/learning material X
Information material
Type of material:
   - Video
   - CD ROM
   - Videoconference:
   - Other type of material X
   - (Please specify): PDF.

Duration: 2007-2009
Format: PDF
Language(s): English- Spanish

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
El objetivo del Master Europeo de Telemedicina y Bioingeniería aplicada a la Telemedicina es impartir una enseñanza de calidad en Telemedicina y Salud electrónica orientada a posgraduados en Medicina, Informática, Ingenieros, Economistas e incluso Abogados, habilitando a estos profesionales para desarrollar e implementar soluciones sobre atención médica a distancia en cada uno de sus entornos.

## Title of activity: UNIVERSITY OF LA LAGUNA (ULL)

1. **Title: Guide of the ULL http://www.teide.net/catai/catedra_unesco/pag5253.pdf**
Producer and/or distributor (with address): ULL (University La Laguna)g
Year: 2007-2015
Teaching/learning material
Information material X
Type of material:
   - Video
   - CD ROM
   - Videoconference:
   - Other type of material X
   - (Please specify): PDF. (Pages 52-53)

Duration: Always updated.
Format: PDF
Language(s): English- Spanish
Main keywords (4 or 5): UNESCO Chair information in the guide of the ULL

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
It refers to the presence and the activity of the UNESCO Chair of the University of La Laguna in the general guide of the University in a prominent place.

2. **Title: Collection activities Unesco Chair Ull**
http://www.ull.es/view/institucional/ull/Catedra_Unesco_de_Telemedicina/es
Producer and/or distributor (with address): ULL (University La Laguna)g
Year: 2007-2015

Teaching/learning material
Information material X
Type of material:

- Video
- CD ROM
- Videoconference:
- Other type of material X
- (Please specify): Web site

Duration: Always updated.
Format: PDF
Language(s): English- Spanish
Main keywords (4 or 5): UNESCO Chair information activities of the ULL

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
It refers to the presence and the activity of the UNESCO Chair of the University of La Laguna in the general web site with all years' activities from the start.

### Title of activity: UNESCO

1. **Title** **http://www.unesco.org/en/unitwin/access-by-region/europe-and-north-america/spain/unesco-chair-in-telemedicine-467/**
   Year: 2011
   Teaching/learning material X
   Information material
   Type of material:
   - Video
   - CD ROM
   - Videoconference:
   - Other type of material X
   - (Please specify): htm

   Format:
   Language(s): Spanish

   SHORT ABSTRACT
   *(Brief description of the content in English, French or Spanish)*
   • Para facilitar la capacitación y la adquisición de habilidades en la Telemedicina, dirigidos a las áreas geográficas y la aplicación médica que muestran las necesidades reales de apoyo a la telemedicina.
   • Actuar como órgano intermediario o dar apoyo directo de telemedicina adaptado a las necesidades e infraestructura de los países que reciben apoyo.
   • Para promover la telemedicina misión de la unidad central (MTCU) que proporciona: apoyo médico a través del teléfono, centros de coordinación (RCC) y centros de telemedicina de apoyo

2. **Title El XXV curso de Telemedicina de la ULL expone los avances en nuevas tecnologías para el Servicio sanitario**
   **http://www.ull.es/viewullnew/institucional/prensa/Noticias_ULL/es/2250830**
   Year: 2012
   Teaching/learning material
   Information material
   Type of material:
   - Video
   - CD ROM
   - Videoconference:
   - Other type of material X

- (Please specify): htm

Format:
Language(s): Spanish

SHORT ABSTRACT
*(Brief description of the content in English, French or Spanish)*
La cátedra de Anatomía Patológica de la Universidad de La Laguna, ostentada por la doctora Olga Ferrer-Roca, ha organizado el XXV Curso de Análisis de Imagen del CATAI (Curso Avanzado Tecnológico de Análisis de la Imagen). Con este programa se pretende acercar a alumnos y profesionales del sector los avances en telemedicina, es decir, la prestación de servicios médicos a distancia utilizando las nuevas tecnologías. El curso se impartirá entre el lunes 12 y el domingo 18 de marzo y tiene una duración de 80 horas.

## Form 3: Program of Courses

### 2013 - Title of activity: SYSTEM ON CHIP (SoC) devices in Telemedicine. From Lab on Chip (LoC) to high resolution images

**XXI WINTER COURSE OF CATAI**

**XXVI IMAGE ANALYSIS COURSE OF THE ULL**
04th March-10th March 2013
**SYSTEM ON CHIP (SOC) DEVICES IN TELEMEDICINE FROM LABOC TO HIGH RESOLUTION IMAGES**
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/isco/iscoweb/;
by EFMI (European Federation of Medical Informatics) http://www.efmi.org/
80 Teaching hours

**MONDAY 4TH MARCH, 2013**

16-20h • *Welcome to the Course.* **F. Luengo Orol**, Chancellor of Industrial Development and Technological Innovation. **Prof. Dr. E. Domenech,** Head of the University of La Laguna (ULL), Tenerife. **Prof. Dr. C. Ruiz-Pérez,** Research Vice-Chancellor, Univ. of La Laguna, Tenerife. *NIR-tomography & fMRI applied to Neurology* **Prof. Dr**. **JL Gonzalez Mora**, Physiology. ULL. http://www.nirx.net/breast-imaging.

**TUESDAY 5TH MARCH, 2013**

16-20h • *Photonics based Telemedicine Technologies* **Prof. Dr. A.Ozcan**, Univ.California UCLA. Innovation through photonics. http://www.innovate.ee.ucla.edu/ ;http://biogames.ee.ucla.edu/; http://www.ee.ucla.edu/faculty-ozcan.htm; *BYOD (Bring Your Own Device), gamification and high resolution in Telemedicine*, **Prof. Dr. O. Ferrer-Roca**, UNESCO Chair of Telemedicine, Univ. La Laguna ULL. http://www.teide.net/catai. *Superresolution in digital holographic microscopy by synthetic aperture*. **Prof. Dr. V. Micó**. Physics Faculty. U.Valencia. http://www.uv.es/gpoei/eng/directorio.html

**WEDNESDAY 6TH MARCH, 2013**

16-20h • *Vidyo, High definition videoconference without MCU.* **Frank Ruge** VP Vertical Market EMEA, Vidyo. http://www.vidyo.com. *In-Memory Technology – An Enabler for Personalized Medicine,* **Prof. Dr. Ch. Meinel,** Hasso-Plattner Institute, Potsdam University, Germany, http://www.hpi.uni-potsdam.de/

**THURSDAY 7TH MARCH, 2013**

16-20h • *Project 2020.Future Medical Office.* **Prof. Dr. G. Graschew and V. Guerkan,** Clinical University of the Charité, Berlín, http://www.rrk-berlin.de/op2000. ESA- European Space Agency, ESTEC-European Space Research and Technology Centre, Noordwijk, Holanda, http://www.esa.int/. *Open source EHR and image processing*. **Ing. L. Falcon.** http://health.gnu.org/

**FRIDAY 8TH MARCH, 2013**

16-20h • *New type of images in medicine.* **Prof. Dr. A. Horsch**, Technical Univ. Munich. Germany. http://www.efmi-wg-mip.net/. *Lab on chip analysis systems for viruses* **Ing. Dr. Reiner Gotzens**. MicroTEC. Germany. http://www.microtec-d.com/html/d_company/e_fuehrung.html

**SATURDAY 9TH MARCH, 2013**

16-20h • *Assistant living with images.* **Ing. D. Gonzalez**, Unesco Telemedicine, Canary Islands. http://catai.net/blog/acerca-de-este-blog/. *Images role in e-health.* **Prof. Dr. A. Kastania,** Athens University of Economics and Business, Greece. http://www.aueb.gr/users/kastania/researchank.html.

**SUNDAY 10TH MARCH, 2013**

16-20h • *Students presentation of the IT works*. Coordinator: **Prof**. **Dr. O. Ferrer-Roca**, *Telemetry*, **Mr. J. L. López,** COMITAS Communications. http://www.comitas.es. *Wheels for iPad to build a COW (computer on wheels)*, Double-robotics, http://www.doublerobotics.com/#.

**WORKSHOPS:** Everyday from 8 to 16 h.

Near Infrared images (NIR) and fMRI-functional MRI *(Prof. Dr. J. L. Gonzalez-Mora, F. Rodríguez Hernández, Dr. G. Navarrete García, C. Modroño Pascual); 2.* Robotic surgery and intelligent operating room *(Prof. Dr. A. Alarcó & Dr. A. Bravo); 3.* Double Robotics COW with iPad; 4. Full HD telemedicine with Vidyo (*Ing. J.Gonzalez*); *5.* BYOD & Galaxy camera. *6.* iPhone telepathology with SkyLight. *7.* Dropbox cloud.

## 2014 - Title of activity: 4T-MEDICINE (cancelled)

### XXII WINTER COURSE OF CATAI

### XXVII IMAGE ANALYSIS COURSE OF THE ULL

17th March-23th March 2014

**4T MEDICINE**

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/isco/iscoweb/; by EFMI (European Federation of Medical Informatics) http://www.efmi.org/

80 Teaching hours

***CANCELLED DUE TO LACK OF FINANCIAL SUPPORT***

***The teaching on Telemedicine & Tele-Health (TELEMEDICINA y TELESALUD)of 6 ECTs, carried out in the Carrier of Medicine and officially approved since 10 years ago had to be cancelled. Around 200 students/year that usually take this topic which is the only one existing for Medical training in Spain and in EU could not get trained.***

http://www.ull.es/Private/folder/centros/medicina/material/Plan%20Grado%20Medicina%20ULL%20BOE%2010.1.2012.pdf



*Sexto Curso*

ANUAL

| Asignatura | Tipo | ECTS |
|---|---|---|
| Rotatorio Especialidades Médicas. | OB | 12 |
| Rotatorio Especialidades Quirúrgicas. | OB | 12 |
| Rotatorio Pediatría. | OB | 6 |
| Rotatorio Ginecología y Obstetricia. | OB | 6 |
| Rotatorio Psiquiatría. | OB | 6 |
| Rotatorio Atención Primaria. | OB | 6 |
| Rotatorio Urgencias. | OB | 6 |
| Trabajo Fin de Grado. | OB | 6 |

Optativas: Oferta para el 2.º/3.er cursos, 1.er cuatrimestre:

1. Inglés Para la Medicina.
2. Nutrición y Dietoterapia.
3. Rehabilitación Médica
4. Medicina de la Actividad Física y del Deporte.
5. Enfermedades Tropicales y Salud Internacional.
6. Telemedicina y Telesalud.
7. Reanimación Cardiopulmonar, Medicina Intensiva, Anestesia y Terapéutica del Dolor.
8. Economía de la Salud y Organización del sistema Sanitario.
9. Medicina Sexual y Reproductiva.

REQUISITOS PREVIOS PARA CURSAR LAS ASIGNATURAS DE LA MATERIA:

| Optativas | | |
|---|---|---|
| **Código** | **Primer Cuatrimestre** | **Créditos** |
| 309370901 | Inglés para Medicina | 6 |
| 309370902 | Economía de la Salud y Organización del Sistema Sanitario | 6 |
| 309370903 | Nutrición y Dietoterapia | 6 |
| 309370904 | Rehabilitación Médica | 6 |
| 309370905 | Medicina de la Actividad Física y el Deporte | 6 |
| 309370906 | Enfermedades Tropicales y Salud Internacional | 6 |
| 309370907 | Telemedicina y Telesalud | 6 |
| 309370908 | Reanimación Cardiopulmonar, Medicina Intensiva, Anestesia y Terapéutica del Dolor | 6 |
| 309370909 | Medicina Sexual y Reproductiva | 6 |

http://www.ull.es/view/centros/medicina/Plan_de_estudios_10/es

## 2015 - Title of activity: I-SUMMIT OF THE HUMANIZATION OF HEALTHCARE (H2O)

## I-SUMMIT OF THE HUMANIZATION OF HEALTHCARE

13th-14th February 2015
**HUMANIZATION OF HEALTHCARE**
International Meeting at the Mare Nostrum Resort. Tenerife. Canary Islands. Spain.

**13th February 2015: ROOM MALLORCA**

**9:30** Coffee break

**10:00** Presentation of the H2O project. *Fog & small data*. **Prof.Dr.O.Ferrer-Roca.** Unesco Chair of Telemedicine. University La Laguna. www.teide.net/catai . *Non-intrusive devices.* **Prof.Dr.O.Ferrer-Roca.** Unesco Chair of Telemedicine. ULL. www.teide.net/catai. Discussion

**11:00-12:00** Presentation of the Coordinator. **Manuel Perez Perez**. http://atos.net/en-us/home.html . Presentation of the Partners according the EC demands of CVs. (Competitive Expertise, Roles, Patents, EC project participation, publications). Allocation of the responsible of the web site of H2O.

**13:00** Lunch time

**15:00** Presentation by the Technological Partners of its role in the philosophy of the project. *Fog & IoT*. **Mario Nemirosky & Damian Roca**. Barcelona Supercomputer Centre. http://www.bsc.es/computer-sciences/network-processors . *Standards in connectivity IPv6 and Bluetooth 4.1*. **Antonio Jara**. Ubiquitous. SL & HOPU. http://www.hopu.eu/ . *FHIR into PHR (personal health record)*. **Ing. Rik Smithies**. NProgram Ltd. http://www.nprogram.co.uk/. *Peres: Food control devices*. **Kristina Alesiuniene** Ars Lab Ltd. Lithuania. http://www.getperes.com/ . *Magic bands*. **Alan Dalton** et al. Univ Surrey.UK. http://www.surrey.ac.uk/physics/people/alan_dalton/. *Risk minimization with open hardware*. **Luis Falcon**. Unesco chair of telemedicine. www.teide.net/catai. Discussion.

**16:30** Coffee break

**17:00** *Building the FOG*. *Intelli-agents*. **Herman Kaindl**. Technical University Wien. https://www.ict.tuwien.ac.at/en/mitarbeiter/kaindl *Software infrastructure cloud computing.* **Gabriele Giameto**. Engeneering SL. www.eng.it (Round table with Technological partners coordinated by **Prof.Dr.O.Ferrer-Roca & Mario Nemirosky**) Location and functioning of the e-PHAs and management of alerts. Security. Small data location & availability. Discussion.

**18:00** End of the session. Free time.

**14th February 2015: ROOM MALLORCA**

**9:30** Coffee break

**10:00** *Parameters for a healthy life*. **Dr. Alberto Lazzero**. Zohe. http://www.zohe-ehealth.org/ . *Role of the Personal Health Assistant*. **Ginetto Menarello & Paola Obbia.** School of Nurses of Torino and Family Health Nurse. Presentation of the High Qualify Nurses partners of its role in the philosophy of the project. **Antonio Jara.** University of Applied Science Western Switzerland (HES-ESO) http://www.hevs.ch/fr/mini-sites/projets-produits/aislab/ Statistical partners in the Markovian & Bayesian decision for the e-agents. Discussion.

**11:00-12:00** *Envisaged Business Model*. **Tram Nguyen Thrinh.** Vitanlink. www.vitanlink.com. Presentation by the Insurance and Business partners of its role in the philosophy of the project. *Expatriates support.* **Dr. Stephen Krotsch**. Allianz Worldwide partners. www.allianzworldwidecare.de . *Innovations in Home care*. **Dr Michel Paoli**. Innovation in Intermutuelle Assistance. www.imagroupe.eu Discussion

**13:00** Lunch time

**15:00** **Antonio Jara**. University of HES-SO. http://www.hes-so.ch/ Presentation by the Statistical Responsible Partners of the Pre-trial survey details, Trial requirements and

distant control and evaluation of the trials. Envisaged publication periods. Techniques for monitoring the impact of the project in the Social media.

**16:30** Coffee break

**17:00** Summary of all data discussed in order to face a cohesive group to gain the challenges of the project. *Role of the HealthBrain in p-medicine.* **Prof.Dr.O.Ferrer-Roca**

**17:30** **Manuel Perez Perez**. Coordinator discussion of the Schedule and requirements of the Consortium and of the Call in Horizon 2020. Partner responsible of the Web Page of the project

**18:00** **Manuel Perez Perez**. Discussion of the project budget and distribution of the partners. Free time.

**2012-13 - Title of activity: MASTER EN DERECHO SANITARIO- UIB.**
http://catai.net/blog/2012/07/master-de-derecho-sanitario/

**2014-15 - Title of activity: MASTER EN DERECHO SANITARIO- UIB.**

## Form 4: Press Release

**http://www.cunoticias.com/noticiasde/curso-avanzado-tecnologico-de-analisis.php**
**http://www.comminit.com/en/node/121255/38**
**http://www.iweee.org/2010/speakers.html**
**http://instapedia.com/m/Telemedicine**
**http://en.wikipedia.org/wiki/index.html?curid=774446**
**http://en.wikipedia.org/wiki/UNESCO_Chair_in_Telemedicine**
**http://raisingchooks.typepad.com/raising_chooks/2010/06/a-little-about-the-history-of-telemedicine.html ç**
**http://www.yatedo.com/s/companyname%3A%28%28unesco%29+OR+%28telemedicine%29%29+AND+%28jobtitle%3A%28%28chair%29%29+OR+profession%3A%28%28chair%29%29%29/all**
**http://jsahealthmd.com/tag/telemedicine/**
**http://www.mmdnewswire.com/virtual-microscopy-application-ipad-34658.html**
**http://www.europa-eu-un.org/articles/en/article_8653_en.htm**
**http://www.reference.com/browse/telemedical**
**http://www.springerlink.com/content/687pt00001m33564/**
**http://www.springerlink.com/content/687pt00001m33564/fulltext.pdf Translational Oncology**
**http://eldigitaldecanarias.net/enviar46763.php**
**http://iphone-pc.net/tag/freetoplay**
**http://www.iweee.org/2010/speakers.html.**
***http://www.eldigitaldecanarias.net/noticia46763.php***
**http://www.juventudcanaria.com/es/noticias/index.php?id=10111**
**http://www.gobiernodecanarias.org/noticias/index.jsp?module=1&page=nota.htm&id=124173**
**http://www.cenetec.salud.gob.mx/descargas/comite_e-Salud/FOROjunio08.pdf**
**http://www.infoamerica.org/primera/guia_catedras.pdf**
**http://www.cunoticias.com/noticiasde/facultad-de-medicina.php**
**http://www.ull.es/viewullnew/institucional/prensa/Noticias_ULL/es/335810**
**http://www.tribunadecanarias.es/index.php?name=News&file=article&sid=18918&theme=Printer**
**http://www.ull.es/modules/ullnew/view.aspx?id=257097**
**http://lavozdetenerife.com/not/23181/_una_catedratica_de_la_ull_utiliza_tecnologia_de_realidad_aumentada_para_impartir_anatomia_patologica/**
**http://www.ull.es/viewullnew/institucional/prensa/Noticias_ULL/es/2337324**
http://www.ull.es/modules/ullnew/view.aspx?id=2547628
http://www.ull.es/Private/portal/institucional/prensa/pressclippdf/2014/06/22/pressclip2547775.pdf
http://www.ull.es/Private/portal/institucional/prensa/pressclippdf/2014/06/21/pressclip2547789.pdf