



# ICNIRP 7th International NIR Workshop

Edinburgh, United Kingdom, 9-11 May 2012



## International Research Agenda

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## Contents

- The EU FP7 Project
- ARIMMORA
- SEAWIND
- MOBI-KIDS



"This earbud phone comes with a 5 year warranty or until your brain's fried - whichever comes first."



## The EU 7<sup>th</sup> Framework Programme (“7<sup>th</sup> FP”)

- The '**knowledge triangle**' - **research, education and innovation** - is a core factor in European efforts to meet the ambitious Lisbon goals.
- The broad objectives of FP7 have been grouped into four categories:  
**Cooperation, Ideas, People and Capacities.**
- Specific programme corresponding to the main areas of EU research policy. All programmes work together to promote and encourage the creation of European poles of (scientific) excellence.





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# Arimmora





## ARIMMORA

- Title: **Advanced Research on Interaction Mechanisms of ElectroMagnetic Exposures with Organisms for Risk Assessment**
- Instrument: FP7, Collaborated project
- Total Cost: 4,248,437.20 €
- EC Contribution: 3,249,970.70 €
- Duration: 36 months
- Start Date: 01/10/2011
- Consortium: 9 partners from 6 countries
- Project Coordinator: IT'IS Foundation (Switzerland)
- Project Web Site: [www.arimmora-fp7.eu](http://www.arimmora-fp7.eu)



Key Words: Leukaemia, ELF, dosimetry, cellular signalling, disease models, epigenetic, risk assessment, biophysical modelling



## ARIMMORA

- “The ARIMMORA project will use advanced, highly sensitive tools in comprehensive studies designed to detect interaction mechanisms for ELF-MF effects on organisms, or, alternatively, show their absence. “

- from the ARIMMORA Project Rationale





## ARIMMORA

- “aims to examine relevant biophysical mechanisms for a possible causal relationship between ELF-MF exposure and cancer, especially **childhood leukaemia**.”
- “will develop and apply novel experimental and computational techniques to close knowledge gaps in **ELF-MF exposure assessment**, especially levels and temporal patterns of exposure for European children.”
- “will test likely interaction mechanisms using advanced **in vitro, ex vivo and in vivo biological models** under well-defined exposure conditions.”

*- from the ARIMMORA objectives*



## ARIMMORA

“ARIMMORA will investigate the possible impact of ELF-MF exposure on four processes:

- 1) Epigenetic dynamics associated with hematopoietic cell lineage commitment and differentiation; epigenetic signatures will be monitored genome-wide, and mechanisms underlying eventual “misprogramming” will be addressed in gene promoter models;
- 2) Alteration of signalling processes in cells;
- 3) Induction of possible cytotoxic effects on CD8-positive T-cells;
- 4) Genesis or evolution of childhood leukaemia in advanced genetically modified animal models.”





## ARIMMORA's partners

- Foundation for Research on Information Technologies in Society (Switzerland)
- University of Basel, Department of Biomedicine (Switzerland)
- Weizmann Institute of Science (Israel)
- Fraunhofer-Institute of Toxicology and Experimental Medicine, Division Toxicology and Environmental Hygiene (Germany)
- University of Veterinary Medicine Hannover, Foundation (Germany)
- Schmid & Partner Engineering AG (Switzerland)
- Agencia Estatal Consejo Superior de Investigaciones Científicas (Spain)
- International Agency for Research on Cancer (France)
- Consiglio Nazionale delle Ricerche, Istituto di Ingegneris Biomedica (Italy)



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The  
**SEAWIND Project**





## SEAWIND

- Title: **Sound exposure and risk assessment of wireless network devices**
- Total Cost: 4 M€
- EC Contribution: 8 M€
- Duration: 36 months
- Start Date: 01/12/2009
- Consortium: 8 partners from 5 countries
- Project Coordinator: IT'IS Foundation (Switzerland)
- Project Web Site: [www.seawind-fp7.eu](http://www.seawind-fp7.eu)





## SEAWIND methodology

A comprehensive measurement protocol is in use to acquire incident field exposure data for current and future wireless technologies.

Fields induced in the human body are calculated numerically using high-resolution surface models derived from anatomical MRI scans.

The effects of specific exposure conditions on the functions and DNA of cultured human cells and animal tissues are the subjects of experiments using exposure systems designed, manufactured and installed during the course of the project.

Safety and risks associated with various wireless technologies will be evaluated using findings from SEAWIND and the current body of scientific literature.



## SEAWIND

- Foundation for Research on Information Technologies in Society (Switzerland)
- Interdisciplinary Institute for BroadBand Technology (Belgium)
- University of Aalborg, Department of Electronic Systems (Denmark)
- Aristotle University of Thessaloniki, Department of Physics (Greece)
- Fraunhofer-Institute of Toxicology and Experimental Medicine, Division of Toxicology and Environmental Hygiene (Germany)
- University of Basel, Department of Biomedicine (Switzerland)
- Dialogik GmbH (Germany)
- Schmid & Partner Engineering AG (Switzerland)



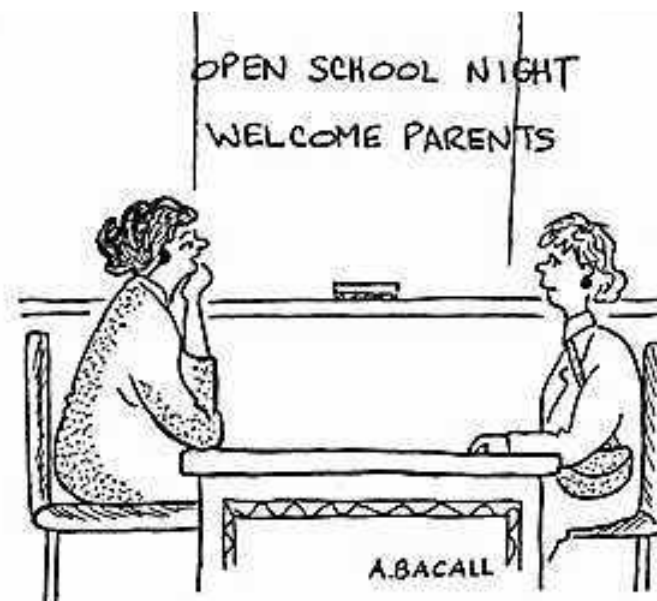
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**mobi-kids**

Study on Communication Technology,  
Environment and Brain Tumours in Young People



search ID: aba0496

"Your son pays attention in class, but only to his iPod and cell phone."





## MOBI-KIDS

- Title: **Risk of brain cancer from exposure to radiofrequency fields in childhood and adolescence**
- Total Cost: 5.7 M€
- EC Contribution: 3.5 M€
- Duration: 60 months
- Start Date: 01/03/2009
- Consortium: 14 partners from 12 countries
- Project Coordinator: CREAL (Spain)
- Project Web Site: [www.mbkds.com](http://www.mbkds.com)
- Key Words: mobile phones, children, RF, brain tumour





## MOBI-KIDS rationale

- “Among the childhood malignancies, brain tumours are the second most common malignancy, after leukaemia. The incidence of these tumours in young people under 20 years of age has been increasing recently.
- As for example in Germany, in 2007 the incidence rate for children under 15 years was 3.4 (per 100000).
- In Canada, the incidence rate between 2000 and 2004 was 2.9 (per 100000) for children aged between 5-9 years and 2.2 (per 100000) for children in the age of 10-14 years.
- In the UK, each year around 450 children and young adults under 18 years are diagnosed with a brain tumour.”



## MOBI-KIDS

- “MOBI-KIDS is an international **multi-centric case-control study** on risk factors for **brain cancer** in young people.
- Experts from **16 European and non-European countries** are involved in the study.
- The analysis of data from the study to evaluate the relation between different factors in the general environment of young people and the risk of brain tumours.



## MOBI-KIDS and INTERPHONE

- **“The project builds upon the methodological experience (both in terms of exposure assessment and epidemiological design) collected within the Interphone study.**
- Particular attention is being paid to issues of potential selection bias related to the very low response rates of population-based controls - by selecting hospitalised controls with specific diagnoses, representative of general population and unrelated to phone use - and potential recall errors - validating questionnaire responses with network operators and repeat questionnaires.
- Improved exposure indices for RF are being derived taking into account spatial distribution of energy in the brain at different ages; ELF from the phones will be considered, as well as other sources of EMF in the general environment of young people.



## MOBI-KIDS partners

- University Of Ottawa (CANADA)
- Association pour la recherche epidemiologique dans les cancers de l'enfant et l'adolescent (FRANCE)
- France Telecom SA (FRANCE)
- Health Protection Agency HPA (UNITED KINGDOM )
- Monash University (AUSTRALIA)
- Universita Degli Studi Di Torino (ITALY)
- Ludwig-maximilians-universitaet MUENCHEN (GERMANY)
- Medizinische Universitaet WIEN (AUSTRIA)
- The Gertner Institute For Epidemiology & Health Policy Research, LTD (ISRAEL)
- Universiteit Utrecht (NETHERLANDS)
- The University Of Auckland (NEW ZEALAND)
- Fundacio IMIM (SPAIN)
- National And Kapodistrian University Of ATHENS (GREECE)



## References

- <http://cordis.europa.eu/>
- [http://ec.europa.eu/research/fp7/index\\_en.cfm?pg=understanding](http://ec.europa.eu/research/fp7/index_en.cfm?pg=understanding)
- [http:// http://arimmora-fp7.eu/](http://http://arimmora-fp7.eu/)
- [http:// http://seawind-fp7.eu/](http://http://seawind-fp7.eu/)
- [http:// http://www.mbkds.net/](http://http://www.mbkds.net/)





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**THANK YOU!**

**MARAMING SALAMAT PO!**