

EU-Funded Research on EMF and Health'

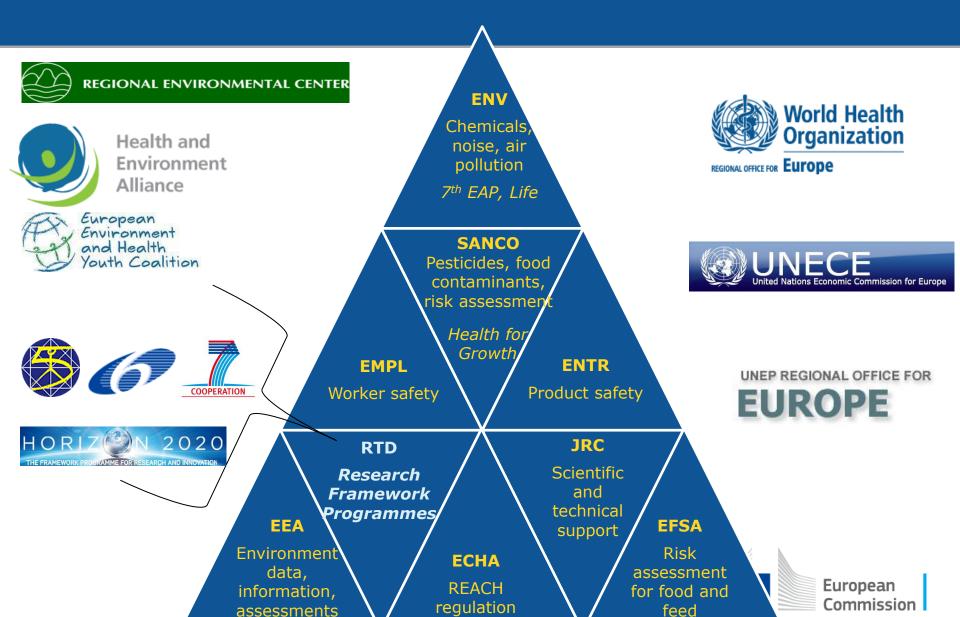


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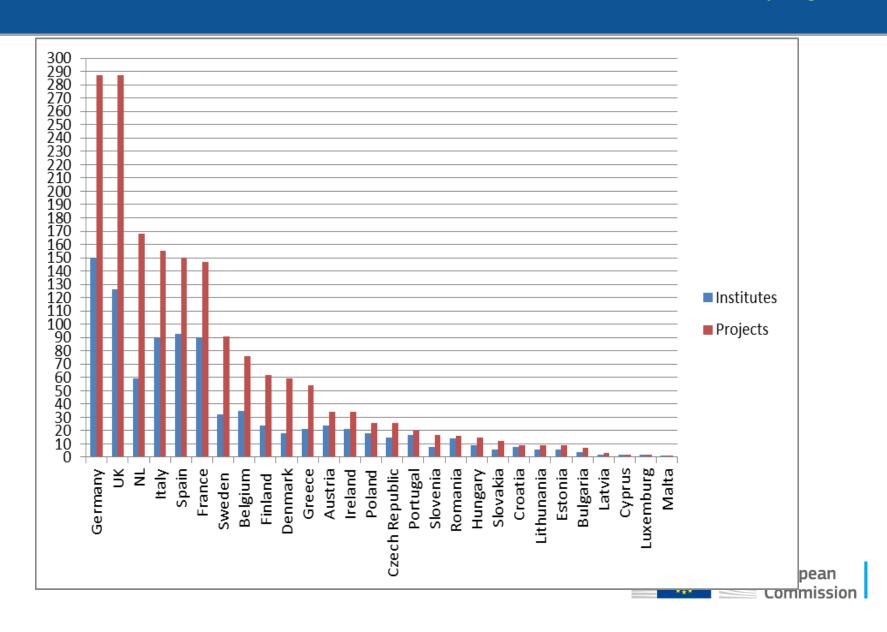
Athens, 28 March 2014

HORIZON 2020

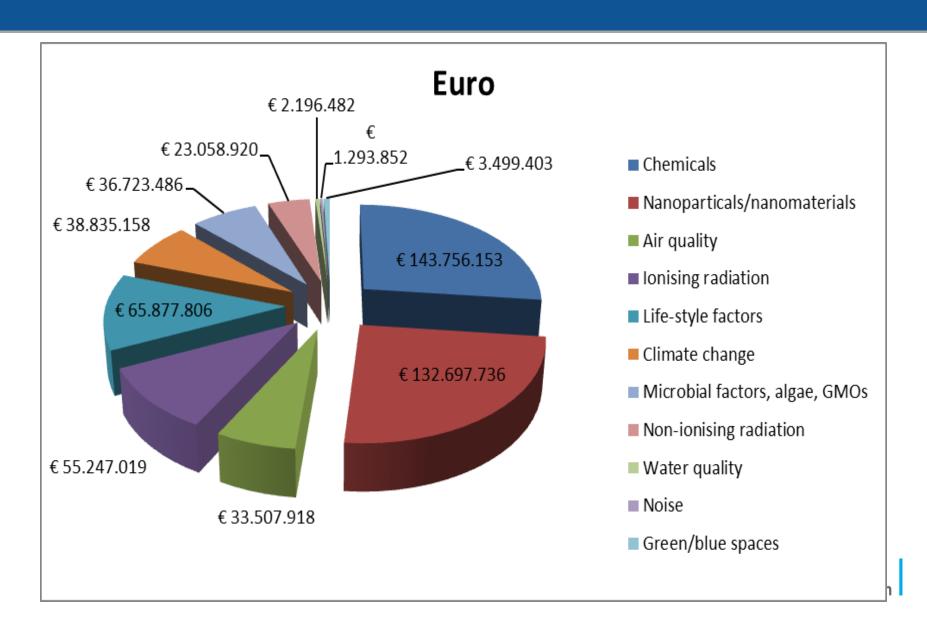
Environment and health actors in Europe



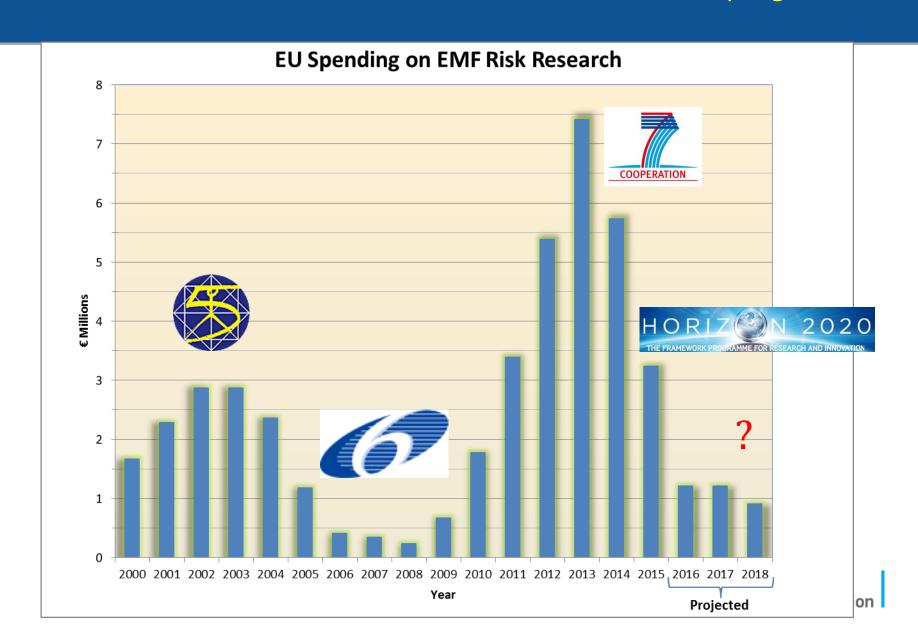
Participating EU countries in FP7-funded environment and health-related projects



Environmental (including life-style) factors addressed in FP7 projects



EMF safety related research funding in EU framework programmes



Research recommendations:

- Health effects of RF exposure in children (SCENIHR opinion 2007, 2009, 2014)
- A large-scale multinational case-control study of brain cancer risk in children in relation to mobile phone use, following a feasibility study (2010 WHO Research Agenda for Radiofrequency Fields)



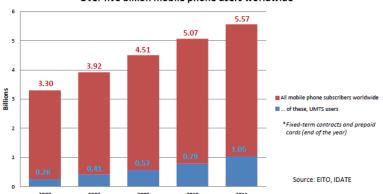




Objective: assess the risk of brain tumours in young people in relation to: (a) childhood and adolescent exposure to EMF and ELF from communication technologies; (b) other potential environmental and host factors



Over five billion mobile phone users worldwide*

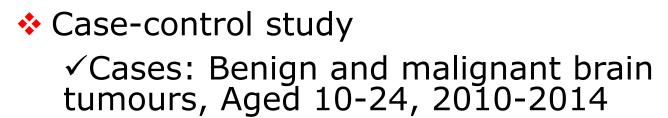


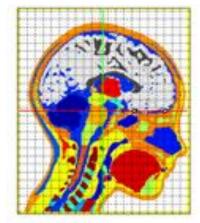
'Follow-up' of INTERPHONE:

- □ Interphone study subjects light users compared to today: Few used the phone more than 10 years; median cumulative call time over life 100 hours; highest group >=1640 hours: about 30 min/day over 10 years
- Not unusual today for people to speak one hour or more, particularly young people
- Need more research, particularly among young people as they may be more vulnerable









- First interviews started in early 2011
- Data collection until Sept 2014 results 2015/2016
- Hurdles to overcome: Participation of hospitals (100's), nb cases, accurate tumour diagnosis and localisation, questionnaire, validation of exposures etc



EU funding

- Austria
- France
- Germany
- Greece
- Israel
- Italy
- The Netherlands
- Spain

Separate funding

- Australia
- New Zealand
- Canada
- India
- Korea
- Japan
- Taiwan



Research recommendations:

- ELF fields Childhood leukaemia (SCENIHR opinions 2007, 2009)
- Development of transgenic mouse models of childhood leukaemia for use in EMF; Evaluation of co-carcinogenic effects of ELF fields (2007 WHO Research Agenda for Extremely Low Frequency Fields)

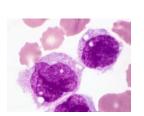








Main objective: To investigate the underlying biophysical mechanisms and to clarify a possible causal relationship between ELF MF exposure and cancer, especially childhood leukaemia



Gain insight into the molecular effects of ELF-MF exposures on cellular signalling and epigenetic signatures



Take advantage of recent advances in the molecular biology of leukaemia, e.g., genetically modified mouse leukaemia models



Better understand exposure of children - obtain personal exposure data; characterise exposure patterns; develop novel measurement equipment for determining the exposure of near-field sources; compare contributions of near-field sources to power line fields →develop validated prediction models enabling estimation of ELF-MF exposure of children in the past, present, and future

Research recommendation:

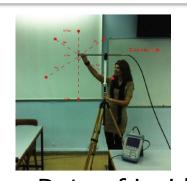
Assess characteristic RF EMF emissions, exposure scenarios and corresponding exposure levels for new and emerging RF technologies; also for changes in the use of established technologies (2010 WHO Research Agenda for Radiofrequency Fields)







Main objective: close knowledge gaps regarding exposure to wireless network devices



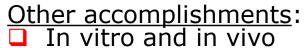
□Exposure: Data of incident EMFs for sources that typically cause whole-body exposure. Exposimeters placed in two different locations of the crèche/school/home/office and record the exposure during one week (BE, EL -153)

measurements).

■Mobile telecommunications and radio broadcast reception (FM) present in nearly all indoor microenvironments. Cellular phone networks (GSM and UMTS) remain a significant source of exposure indoors



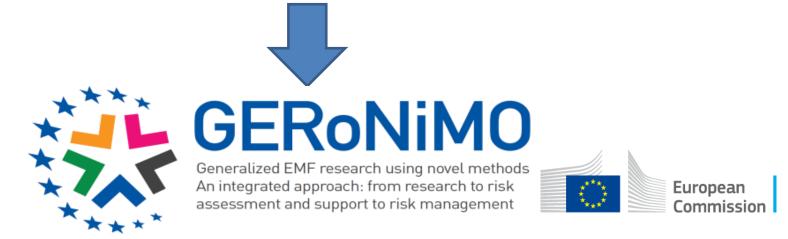
<u>Dosimetry</u>: Fields induced in tissues strongly depend on the anatomy and the posture of the exposed person



- In vitro and in vivo exposures
- Guidance and recommendations were developed for appropriate risk governance for government officials.
- Derivation of guidelines on how exposure to wireless networks can be minimised ('take thome-messages')

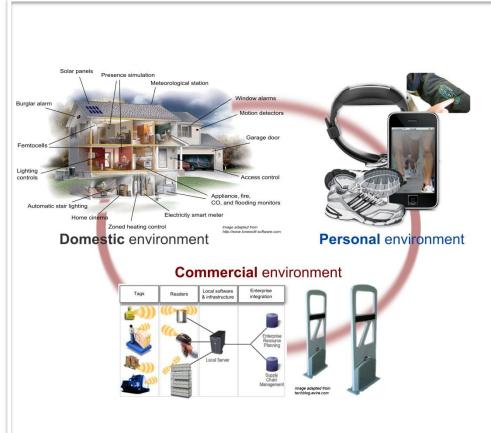
Research recommendations:

- IF fields: Investigation of possible health effects;
- Confirmation of important but preliminary findings;
- Mechanistic/mode of action studies (SCENIHR opinions 2007, 2009, 2014)
- Effects of RF exposure on ageing and neurodegenerative diseases (SCENIHR opinion 2014, 2010 WHO Research Agenda for Radiofrequency Fields)
- Effects of RF exposure on reproductive organs (2010 WHO Research Agenda for Radiofrequency Fields)





www.crealradiation.com/index.php/en/geronimo-home



<u>Main objectives</u>:

- Generate new knowledge on possible health effects of RF and IF (focusing on the risk of cancer, neurodegenerative diseases, behaviour, reproductive outcomes and aging) and on the biological mechanisms underlying these;
- Characterise current and future population levels of exposure in Europe to improve assessment of potential health impacts of EMF exposures in Europe, underpin policy development and propose nontechnological means to reduce exposure.



Research recommendation:

Exposure distribution in the population (SCENIHR opinion 2007, 2009)





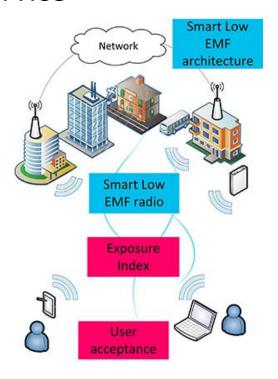






Main objective:

 Develop effective mechanisms to reduce 50% (at least) of the public exposure to EMF, without compromising the quality of service



Objectives:

- Analyse workers' exposure to EMFs from welding;
- Lower SMEs' cost of compliance to the upcoming EU Directive on EMF by providing an economic and easily accessible EMF exposure risk assessment tool



EMF exposure and safety within fully electric vehicles



http://www.hemiseu.org



http://eeepro.shef.ac.uk/ wide-mob



http://www.sintef.no/Projectweb/EM-Safety



Horizon2020- Three priorities

- **European Research Council**
- Future and Emerging Technologies
- Marie Skłodowska-Curie actions
- Research infrastructures

•Excellent science

- Leadership in enabling and industrial technologies
- Access to risk finance
- Innovation in SMEs

Industrial leadership Societal challenges

- Health, demographic change and wellbeing
- Food security,
 sustainable
 agriculture and
 forestry, marine and
 maritime and inland
 water research and
 the Bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, environment, resource efficiency and raw materials
- Inclusive, innovative and reflective societies
- Secure societies
- Science with and for society
- Spreading excellence and widening participation

A new approach to work programmes



- Challenge driven
- Broad topics
- Less prescriptive topic text
- Two-year work programme
- Stronger focus on end-users



Conclusion

The Commission continually evaluates the need for further research, taking into account the results from ongoing projects and other sources.



Additional information available



http://ec.europa.eu/research/environment/index_en.cfm



Thank you for your attention!



Σας ευχαριστώ για την προσοχή σας!

