Forschungsstiftung
Mobilkommunikation
Research Foundation
Mobile Communication

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Project Proposal

*to be submitted by **email** to nicole@mobile-research.ethz.ch AND in **duplicate** (hardcopy) to the President of the Board of the Foundation:*

Prof. Werner Bächtold
Institut für Feldtheorie und Höchstfrequenztechnik
ETH-Zentrum
Gloriastrasse 35
CH - 8092 Zürich

The Proposal can be submitted in English or German

Registration No.
Submission date: ***November 15***

1. General information

1.1. Submitting research unit: Institute of Pharmacology and Toxicology, University of Zurich
Address: Winterthurerstr. 190, University of Zurich, 8057 Zurich
Contact Person: PD. Dr. Peter Achermann
Address:
Tel., fax, e-mail: Tel. 01 635 5954, Fax 01 635 5707, e-mail acherman@pharma.unizh.ch

1.2. Applicants (Name, Surname):

		Position:	Year of birth:
1.	PD Dr. Peter Achermann	Privatdozent, Leiter Schlaflabor	1954
2.	Prof. Niels Kuster	Direktor IT'IS	1957
3.	Dr. Martin Röösli	Wissenschaftlicher Mitarbeiter	1967

1.3. Title of project: Effects of UMTS radio-frequency fields on well being and cognitive functions of human subjects with and without subjective complaints.
Keywords: UMTS, Electromagnetic exposure, Mobile phones, Well being, Cognitive Functions
Disciplines: Health and environment, Health risk assessment, Brain physiology

1.4. Total credit requested: 723 kCHF
Component for salaries: 448 kCHF

1.5. Start date: September 2004 Duration: approx. 1 year

1.6. Does the project belong to a principal theme of the research unit? ☑ Yes, namely: Previous research on effects of electromagnetic fields
Existing since: 1999
☐ No

2. Scientific information

2.1. Abstract (objectives, methods, and expected results).
Please do not exceed frame below.

A Dutch study (Zwamborn et al. 2003) about effects of mobile communication system radio-frequency fields on well being and cognitive functions of human subjects, hereafter called TNO-report, shall be replicated with focus on UMTS-like exposure to electromagnetic fields (EMF). Two field strengths will be applied on two groups of subjects with and without subjective complaints about sensitivity to electromagnetic fields. Based on the results of the TNO-report, we expect to find a reduction of well being following exposure to UMTS radiation, possibly in a dose-dependent manner, but no effect of UMTS radiation on cognitive performance of the subjects.

The study will replicate the UMTS field conditions of the TNO study (1V/m) using an identical exposure setup and will apply an additional field strength of 10 V/m to establish a dose-response relationship. The three treatments (sham, UMTS 1 V/m, UMTS 10 V/m) will be applied in a randomized, double-blind, counter-balanced cross-over design.

Subjects sensitive to EMF will be recruited from a database of the Federal Office of Public Health (BAG) and from a survey performed by the Department of Social and Preventive Medicine, Bern. Subjects insensitive to EMF will form a matched symptom free reference group. On the basis of the TNO-report, sample size for both groups was calculated with a power analysis ($p<0.05$; power 0.8) and will consist of 24 subjects in the sensitive group and of 60 subjects in the non-sensitive group.

Prior to exposure subjects will have to practice cognitive tests that have to be performed during exposure. Construction of the exposure set-up, as well as organ and functional brain tissue specific dosimetry will be performed by members of the IT'IS Foundation. Prior to and after exposure, subjects will have to fill in well-being questionnaires.

Preliminary results are expected ten months after start of the project. Within a year, the entire project should be finished incl. submission of publication(s) to peer-reviewed journal(s).

This replication study will provide valuable insights to the influence of UMTS radiation on subjective well being and cognitive performance and will be an important contribution to the ongoing debate about concerns of possible adverse health effects of the new UMTS technology.

2.2. Detailed information should be given in Appendix 1

Please compose Appendix 1 using the following outline:
(Technical abbreviations and jargon should be avoided or adequately explained)

2.2. Goals, expected results
2.3. Rationale for the proposed project and state of research
2.4. Detailed research plan (experimental approach, methods, milestones, timetable, personnel, duties of each participant including doctoral students)
2.5. Available resources for realization of the project (Equipment, staff, knowledge, experience)
2.6. Expected cooperations
2.7. List of own relevant publications (preferably the latest papers)
2.8. Relevant publications of other authors (preferably the latest papers)
2.9. Significance of project to "Swiss Research Foundation on Mobile Communication"
2.10. Related projects of the Research Unit
2.11. Further information

3. Personnel requirements

	1st participant	2nd participant	3rd participant
Name			
Surname			
Year of birth			
Nationality			
Academic degree			
Doctoral student? If yes: start date?	Please select	Please select	Please select
Name of the supervisor ("Doktorvater")			
Percentage of employment devoted to the project			
Annual salary according to the rules of the research unit			
Requested salary (for Doctoral Students: regular salary of the research unit) Salary 1st year (kCHF)			
Salary 2nd year (kCHF)			
Salary 3rd year (kCHF)			
Salary (total in kCHF)			

Overall total for salaries (kCHF) 448

The CVs of the participants mentioned above need be added to the proposal

4. Other costs

(All figures in kCHF)

4.1. Capital items explicitly required for the project (e.g. material of permanent value such as apparatus, instruments and other equipment)

	Equipment and facilities	1st year	2nd year	3rd year
a)		72.5		
b)				
c)				
d)				
	Total per year	72.5		

4.1. Overall total 72.5

4.2. Consumables (if not to be paid from the ordinary credit; please separate by categories)

		1st year	2nd year	3rd year
a)				
b)				
c)				
d)				
	Total per year			
	4.2. Overall total			

4.3. Other costs: Travel expenses, field expenses, miscellaneous (only if connected with the project; expenses for conferences have to be covered by other funds)

		1st year	2nd year	3rd year
a)	Subcontracts	86		
b)	Reimbursments, Administration, Travel, Experts, Overheads	86.5		
c)	Management activities "Research Foundation Mobile Communicati	20		
d)	Reserves	10		
	Total per year	202.5		
	4.3. Overall total			202.5

Overall total per year	275		
Overall total (4.1.+4.2.+4.3)			275

Explanations for the requested funds should be given in Appendix 2

5. External contributions

(Not included in the requested credit)

5.1. Contributions from other agencies (type of contribution, value in kCHF)

a)		
b)		
c)		
d)		
	Total	0

5.2. Applications to other agencies to finance this project (planned or pending)
(e.g. "Schweiz. Nationalfonds, NF", "Eidg. Kommission für Technologie und Innovation, KTI", other foundations, federal government, cantons, communities; private industry)

Agency: _____

Date of application: _____

Applied for: _____ kCHF

Approved: _____ kCHF

6. Summary of requested credit

(All figures in kCHF)

	1st year	2nd year	3rd year	Total
3. Salaries (total to be transferred to 1.4.)	448			
4.1. Capital items	72.5			
4.2. Consumables				
4.3. Other costs	202.5			
Total per year	723			

Overall total (to be transferred to 1.4.) 723

Remarks

The requested credit comprises no VAT ("MwST").
A detailed budget is provided in Appendix 2.

7. Signature of the applicant

Name: Peter Surname: Achermann, Dr.

Place: Zurich Date: July 22, 2004

Signature

The directorate of the institute ("Institutsleitung") agrees with this proposal

Name/ Surname of head of institute: Prof. Dr. Alexander Borbély

Place: Zurich Date: July 22, 2004

Signature of head of institute

Appendices

- [x] Appendix 1: Scientific information
- [x] Appendix 2: Explanations for the requested funds for material
- [ ] CVs of participants (doctoral students and postdocs)
- [x] List of possible experts
- [ ]
- [ ]
- [ ]

List of Possible Experts

Applicant: PD Dr. Peter Achermann
Title of Project: Effects of UMTS radio-frequency fields on well being and cognitive functions

Please give the names of 3 experts (national and international), who could contribute in the evaluation of the research proposal.

1. Name: Dr. Mirjana Moser
   Title: Dr. Email: mirjana.moser@bag.admin.ch
   Address: Bundesamt für Gesundheit
   Schwarzenburgstrasse 165
   CH-3097 Liebefeld-Bern
   ☑ independent
   Relationship to the applicant:
   Relationship to the project:

2. Name: Prof. Dr. Dieter Imboden
   Title: Prof. Dr. Email: dieter.imboden@env.ethz.ch
   Address: Umweltphysik
   Voltastrasse 65
   ETH Zentrum, VOD C 14
   CH-8092 Zürich
   ☑ Independent
   Relationship to the applicant:
   Relationship to the project:

3. Name: Prof. Dr. A. Zwamborn
   Title: Prof. Dr. Email: zwamborn@fel.tno.nl
   Address: Oude Waalsdorperweg 63
   PO Box 96864
   2509 JG The Hague
   The Netherlands
   ☑ Independent
   Relationship to the applicant:
   Relationship to the project: