BECHET PAUL

DOMAINS OF PROFICIENCY:

- Capability based resources management.
- Electromagnetic spectrum management.
- Interoperability of military communications systems.
- Digital processing of radio signals.
- Assuring the stability of communications systems in an environment characterized by high level of perturbations.
- Multiple access in spread-spectrum radio systems.

SIGNIFICANT RESULTS:

- Development of algorithms for the optimum allotment of resources in FH radio networks.
- Qualitative study of adaptive processing methods in digital radio systems.
- Statistical analysis of radio signals.
- Using simulation techniques in the study of the dynamic adjustment of parameters for FH radio systems.
- Comparative study regarding the spectral efficiency for digital modulations.
- Participation at interoperability activities and exercises regarding NATO communications and information systems - Annual Training (Corps Support-Mobile Subscribers Equipments) - U.S.A., Alabama, Fort McClellan, 6-30 May, 2000.

SIGNIFICANT SCIENTIFIC PAPERS PUBLISHED:

1. **Bechet P.**, Mitran R., Miclaus S., *An Analysis of Frequency Hopping Radio Networks*, Overvoltages in Power, Electronic, Computer and Engineering, pp. 121-124, International Conference on Electromagnetic Disturbances, EMD 2005, Bialystok, Poland, 2005 – journal indexed in ISI Proceedings.
2. **Bechet P.**, Miclaus S., Popa M., Demeter Stefan, Bora M., *Continuous and Digital Modulated Radiofrequency Fields Propagation in Planar Biological Models*, Proceedings of the 2003 IEEE International Symposium on Electromagnetic Compatibility, Istanbul, Turkey, vol. 2, pp. 1241-1244, ISBN 0-7803-7779-6 – journal indexed in ISI Proceedings, Inspec and Google Scholar.
3. Miclaus S.**, Bechet P.**, Demeter S., Olariu O., *Modulation Influence on RF Fields Power Deposition Inside Biological Objects: A Dosimetric Analysis on Layered Planar and Spherical Models*, Proceedings of the International Congress of the International Radiation Protection Association, ISBN 84-87078-05-2, Madrid, Spain, 23-28 May 2004 – journal indexed in the Google Scholar database.
4. **Bechet P.,** Mitran R., Bora M., Popa M., Bouleanu I., *Some Aspects Regarding the Measurement of the Adjacent Channel Interference for Frequency Hopping Radio Systems*, WSEAS Transactions on Signal Processing, ISSN 1790-5022, July 2006 – journal indexed in the Inspec database.
5. Miclaus S.**, Bechet P.**, *Estimated and Measured Values of the Radiofrequency Radiation Power Density Around Cellular Base Stations*, Romanian Journal of Physics, vol. 52, no. 3 – 4, pp. 399 – 410, Publishing House of the Romanian Academy, ISSN 1221-146X, Bucharest, 2007 – journal indexed in the Google Scholar database.

BOOKS PUBLISHED (IN THE FIELD OF RADIO COMMUNICATIONS):

1. **Bechet Paul,** David Adela, Mitran Radu, *Resources Management in Standardized Communications Environments,* Arhip Printing House, Sibiu, 2007, ISBN 973-8962-13-7 (185 pages).
2. **Bechet Paul,** Mitran Radu, Popa Mircea, *Digital Radio Communications – Applications*, Publishing House of the Land Forces Academy, Sibiu, 2006, ISBN 973-7809-52-1 (78 pages).
3. Fagadar Eugen, **Bechet Paul,** Bora Mircea, David Adela, Popa Mircea, *Resources and Capabilities of Military Communications Systems*, Publishing House of the Land Forces Academy, Sibiu, 2006, ISBN 973-7809-54-8 (92 pages).
4. **Bechet Paul,** Mitran Radu, Bora Mircea, Tufis Mircea, *Digital Radio Communications*, Pro Transilvania Publishing House, Bucharest, 2005, ISBN 973-715-044-9 (215 pages).
5. **Bechet Paul,** *Frequency Synthesizers*, Publishing House of the Land Forces Academy, Sibiu, 2001, ISBN 973-8088-61-5 (190 pages).
6. **Bechet Paul**, Goia Gheorghe, Teodorescu Mihai, Bora Mircea, *VHF Frequency Hopping Radio Networks and Equipment*, Publishing House of the Training School for Communications, Information Systems and Electronic Warfare, Sibiu, 2004 (315 pages).
7. Bora Mircea, **Bechet Paul**, Bouleanu Iulian, Goia Gheorghe, Durdun Daniel, Popescu Iulian, The National Military Communications Network – The Strategic Component, Publishing House of the Training School for Communications, Information Systems and Electronic Warfare, Sibiu, 2004 (115 pages).

RESEARCH PROJECTS AT WHICH THE PROJECT MANAGER PARTICIPATED:

Research project proposal, *European Public Health Alert Structure and Information Systems on Electromagnetic Fields,* Application to the European Commission „Public Health Programme 2007", member of the research team, partner: Land Forces Academy, Romania, project manager: Paolo Ravazzani, Politecnico di Milano, Italy.

Grant CNCSIS type A – *Study Regarding the Interoperability of Military Radio Systems*, phase I (2004), funds: 180 millions Lei, and phase II (2005), funds: 250 millions Lei, project manager.

Grant CNCSIS type A - *Application of Some Computational Methods for Measuring the RF Field Absorbed by Exposed Living Beings,* phase I (2004), funds: 130 millions Lei, and phase II (2005), funds: 250 millions Lei, member of the research team, project manager: Demeter Stefan.

Excellency Research Project, CERES, financing contract no. CEEX 05-D11-54-P2/10.10.2005, *Research on Bio-Electromagnetic Interaction and the Biological Impact of Human Exposure to Radio Frequency Electromagnetic and Microwave Fields*, phase I (2005 – Theoretical Studies), funds: 125,000 RON, and phase II (2006 – Simulations, tests and experiments on characterizing the biological exposure at the radiation emitted by microwave/RF sources), funds: 175,000 RON, member of the research team.

Excellency Research Project, CERES, *The Interaction of Microwaves with Molecular and Bio-Molecular Systems*, 2005 - competition, phase II (2006 – Experiments on the interaction of microwaves with molecular and bio-molecular systems), funds: 50,000 RON, and phase III (2007), funds: 10,000 RON, member of the research team.

Excellency Research Project, SECURITY, *Elaboration of an Decisional Instrument for the Optimization of Capabilities Intended to be Used for Specific Actions at the Tactical Level in the Field of National Defense and Security*, phase I (December 2005 – Theoretical Studies: Identifying the types of missions and the specific requirements in conditions of certainty and uncertainty), funds: 10,000 RON, phase II (February 2006 – Theoretical studies: Elaboration of models and characteristics of tactical communications systems), funds: 4,900 RON, phase III (May 2006 – Analysis of the capabilities needed to accomplish specific missions), funds: 4,500 RON, and phase IV (September 2006 – Elaboration and validation of a mathematical model for selecting the capabilities needed for activities carried out in conditions of uncertainty), funds: 5,600 RON, member of the research team.

Grant ANSTI type C – *Contributions to the Study of Frequency Synthesis in Applications,* contract no. 7062/05.11.2001, phase I (2001), funds: 36.2 millions Lei, and phase II (2002), funds: 45 millions Lei, member of the research team, project manager: Demeter Stefan.

Grant ANSTI type T – *Study on Electromagnetic Energy Absorption by Living Beings Exposed to Modulated Microwave Fields from Radar Installations*, contract no. 7062/05.11.2001, phase I, funds: 23.8 millions Lei, and phase II, funds: 45 millions Lei, member of the research team, project manager: Miclaus Simona.