

ANEXA I

Baza de date cu proiecte de cercetare în domeniile Life Science, tehnologii de mediu si chimie cu aplicații spațiale

Proje ct No.	Title	Funded by	Time	Coordinator	Partners	Budget (euro)	Web site
1	New elemental and molecular depth profiling analysis of advanced materials by modulated radio frequency glow discharge time of flight mass spectrometry (EMDPA)	Sixth Framework Programme for Research and Technological Development (FP-6 European Commission)	2006-2010	HORIBA Jobin Yvon, France	-National Institute of Lasers, Plasma and Radiation Physics, Romania -The University of Manchester, UK -Institute for Analytical Sciences, Germany -Swiss Federal Institute for Materials Science and Technology, Switzerland - TOFWERK, Switzerland -Centre de Physique des Plasmas et de leurs Applications Toulouse, France - University of Oviedo, Spain - University of Catania, Italy - ALMA Consulting Group, France	263 498	http://www.emdpa.eu/index.php?id=48
2	Single step 3d deposition of complex nano-patterned multifunctional oxidex thin films (3 DEMO)	Sixth Framework Programme for Research and Technological Development (European Commission) (FP6-NMP)	2006-2010	Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland	-National Institute for Lasers, Plasma and Radiation Physics, Romania -ABCD Technology , Switzerland - SCIPROM, Switzerland -SAFC Hitech, UK -University of Southampton, Optoelectronics Research Centre (ORC), UK -SAES Getters S.p.A., Italy -Centre National de la Recherche Scientifique (CNRS), France	3 058 800	http://www.3d-demo.org/
3	Advanced Composite Structure for Spacecraft Applications (ADCOSSPA)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania	2007-2009	National Institute for Research and Development in Electrical Engineering (INCDIE ICPE-CA), Bucharest, Romania	- National Institute of Aerospace Research "Elie Carafoli", Bucharest, Romania -S.C. Compozite S.R.L. Brasov, Romania	NA	http://www.icpe-ca.ro/supersolid/index.php
4	Aerodynamic Validation of Emission Reducing Technologies (AVERT)	Sixth Framework Programme of the European Commission (FP6-2005-Aero-1)	2007-2009	Airbus, UK	- National Institute of Aerospace Research "Elie Carafoli" (INCAS), Bucharest, Romania - Dziomba Aeronautical Consulting, Germany - EADS Deutschland GmbH Corporate Research Center, Germany - Technische Universitat Berlin, Germany - DLR - Deutsche Zentrum Fur Luft -und Raumfahrt e.V., Germany - Airbus, Spain	Total cost: 7 494 957 EU contribution: 3 900 000	http://www.avert-aero.eu/default.htm

					<ul style="list-style-type: none"> - Universidad Politecnica de Madrid, Spain - Alenia Aeronautica, Italy - Dassault Aviation, France - Laboratoire de Mecanique de Lille, France - University of Poitiers/ENSMA/CNRS, France - Paragon, Greece - Vyzkumny a zkusebni letecky ustav, a.s., Czech Republic - University of Manchester, UK - University of Nottingham, UK 		
5	Vulnerability assessment and mapping of groundwater resources to ensure their sustainable use (ECAVAS)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN2)	2007-2010	Romanian Space Agency (ROSA), Bucharest, Romania	<ul style="list-style-type: none"> - National Institute of Hydrology and Water Management, Bucharest, Romania - University of Bucharest, Romania - Adara Media SRL, Bucharest, Romania 	400 000	http://ecavas.rosa.ro/prezentare.html
6	Nano in the high frequency components based on carbon nanostructures for communication and environmental monitoring (NANO-HF)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN2)	2007-2010	-National Institute of Research and Development in Micro technology, Bucharest, Romania	<ul style="list-style-type: none"> -National Institute of Research and Development for Material Physics, Bucharest, Romania -University Politechnica of Bucharest, Romania -SITEX45, Bucharest, Romania 	455 000	http://www.imt.ro/nano-hf/
7	Millimeter wave devices on metamaterials microprocessed by laser ablation (METALASER)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN2)	2007-2010	National Institute of Research and Development in Micro technology, Bucharest, Romania	<ul style="list-style-type: none"> -National Institute of Research and Development for Material Physics, Bucharest, Romania -University Politechnica of Bucharest, Romania - National Institute for Research and Development in Electrical Engineering (ICPE-CA), Bucharest, Romania 	455 000	http://www.imt.ro/metalaser/
8	Developing soft lithography techniques for micro-nanophotonics (LISOFT)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN2)	2007-2010	National Institute of Research and Development in Micro technology, Bucharest, Romania	<ul style="list-style-type: none"> - .S.C. PROOPTICA S.A, Bucharest, Romania - National Institute of Research and Development for Material Physics, Bucharest, Romania 	455 000	http://www.imt.ro/lisoft/parteneri.php

9	Advanced femtosecond laser system for metamaterials and photonic crystals nanostructuring (FEMAT)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania	2007-2010	National Institute for Lasers, Plasma and Radiation Physics (INFLPR), Bucharest, Romania	-National Institute for R&D in Microtechnologies (IMT) , Bucharest, Romania - PRO OPTICA SA (PROOPTICA), Bucharest, Romania -University Politehnica Bucharest, Physics Chair 1 (UPB), Bucharest, Romania	455 000	http://ssll.inflpr.ro/FEMAT/
10	Laser processing of nanostructured oxide thin films for transparent electronics and conventional(PROLAF)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania	2007-2010	-University Politehnica Bucharest, Physics Chair 1 (UPB), Bucharest, Romania	-National Institute for Lasers, Plasma and Radiation Physics (INFLPR), Bucharest, Romania - Institute of Chemistry "Ilie Murgulescu" of Chemistry and Physics – Romanian Academy, Bucharest, Romania 3.SC Apel Laser SR, Bucharest, Romania	455 000	http://www.infim.ro/~lab190/old_page/Proiecte/Proiecte/Prolaf/web-page_ro/PROLAF_ro_files/slide0001.htm
11	Synthesis of vitreous SiO ₂ -based, with high doping control, with applications in photonics and optics required to achieve nanostructures and nano-scale circuits intergrate (VITROFOTONANOSIN)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania	2007-2010	National Institute of Glass SA, Bucharest, Romania	- National Institute of Research and Development for Material Physics, Bucharest, Romania - University Politehnica Bucharest, Physics Chair 1 (UPB), Bucharest, Romania - National Institute of Research and Development for Optoelectronic INOE 2000, Bucharest, Romania -S.C. METAV - CERCETARE DEZVOLTARE S.A. , Bucharest, Romania -S.C. PROOPTICA S.A , Bucharest, Romania	455 000	http://www.vitro nanofotosin.lx.ro /
12	The research and the development of a membrane reactor for ultrapure hydrogen production that supply the fuel cells (ReMeHPC)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania	2007-2010	National R&D Institute for cryogenics and isotopic technologies - ICSI Rm. Valcea,Romania	-Institute of Physical Chemistry "Ilie Murgulescu" Romanian Academy - ICF , Bucharest, Romania - University of Pitesti - The research centre of advanced materials - UPIT-CCMA, Romania - National Institute for Research and Development of Isotopic and Molecular Technologies Cluj-Napoca - INCDTIM, Romania - S.C. Transilvania Proiect S.R.L. - TP, Romania	455 000	http://www.icsi.ro/pncdi2/21-004/index_eng.html
13	The Analysis and Control of Thermoacoustic Instabilities Inside the Combustion Chamber of an Aircraft Engine (ITACA)	National Center of Management Programmes (CNMP) – Ministry of Education, Research,	2007-2010	COMOTI National Research and Development Institute for Gas Turbines Bucharest, Romania	-Faculty of Aerospace Engineering, University Politehnica, Bucharest, Romania - Institute of Mathematical Statistics and Applied Mathematics, Bucharest, Romania - AEROSTAR SA – Bacau, Romania	455 000	http://www.comoti.ro/en/Proiect_ITACA.htm?pag=1

		Youth and Sport, Romania					
14	Functional compatibility of special electrical equipment with magnetic ferrofluid (CFEEL)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PNCDI 2, Ideas)	2007-2010	National Institute for Research and Development in Electrical Engineering (ICPE-CA), Bucharest, Romania	- National Institute of Research and Development and Tests for Electro technical (ICMET), Craiova, Romania -ARFT Timisoara - Polytechnic University Bucharest, Romania -SC ROSEAL Odorheiul Secuiesc, Romania	466 000	http://www.icpe-ca.ro/ro/feromag21-043
15	New nano-structural materials for hydrogen storage (HISTOMAT)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PNCDI 2, Ideas)	2007-2010	National Institute for Research and Development in Electrical Engineering (ICPE-CA), Bucharest, Romania	National Institute for Research and Development in Electrical Engineering (ICPE-CA), Bucharest, Romania	218 000	http://www.icpe-ca.ro/UserFiles/File/faza%20%20-%20PN%20%20nr.%20222/index.htm
16	Environment Friendly Energy Use For Metal Hydrides Heat Engine Powered by Solar or Residual Energy (TECMOT)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania	2007-2010	Național Institute for Research and Development of Isotopic and Molecular Technologies (INCDTIM) Cluj-Napoca, Romania	- Național Institute for Research and Development for Nonferrous and Rare Metals (INCDMNR - IMNR), Bucharest, Romania - Național Institute for Research and Development of Materials Physics (INCDFM), Bucharest, Romania - Național Institute for Research and Development for Electrical Engineerig (INCDIE ICPE-CA), Bucharest, Romania	455 000	http://itim-cj.ro/PNCDI/PN%2011%2021-023%20PARTENARIATE/ABOUT%20OUS.htm
17	Ferromagnetic and superparamagnetic ordered nanoparticles configurations (ORDONANOMAG)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania	2007-2010	Național Institute for Research and Development of Isotopic and Molecular Technologies (INCDTIM) Cluj-Napoca, Romania	-The National Institute for Research and Development of Materials Physics, Bucharest, Romania - Babes-Bolyai University, Cluj-Napoca, Romania - The Technical University, Cluj-Napoca, Romania	455 000	http://www.itim-cj.ro/~cleostean/ordonanomag/index_en.htm
18	Composites for efficient hydrogen storage at ambient temperatures – clean energy source for fuel cells (COST-H)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania	2008-2011	Național Institute for Research and Development of Isotopic and Molecular Technologies (INCDTIM) Cluj-Napoca,	-The National Institute for Research and Development of Materials Physics, Bucharest, Romania - Babes-Bolyai University, Cluj-Napoca, Romania	455 000	http://www.itim-cj.ro/PNCDI/cost-h/index.htm

				Romania			
19	Transparent oxide semiconductor nanostructures with controlled properties by doping with applications in optoelectronics, spintronics and piezotronics (NANOSEMOXI)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PNCDI 2, Ideas)	2008-2010	National Institute for Research and Development in Electrical Engineering (ICPE-CA), Bucharest, Romania	- The National Institute for Materials Physics (NIMP), Bucharest, Romania - National Institute for Research and Development of Isotopic and Molecular Technologies (INCDTIM) Cluj-Napoca, Romania - Transylvania University, Brasov, Romania	455 000	http://www.icpe-ca.ro/ro/nanosemoxi
20	Solar cells based on thin films obtained by alternative technologies for producing clean energy (VOLTERA)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania	2008-2011	National Institute for Research and Development in Electrical Engineering (ICPE-CA), Bucharest, Romania	-University of Bucharest-Faculty of Physics, Romania -University "Valahia" – Environment and Energy Research Department, Targoviste , Romania - The National Institute for Laser, Plasma & Radiation Physics (INFLPR), Bucharest, Romania	460 000	http://www.icpe-ca.ro/ro/voltera
21	Rocket for satellite launching of on low orbit – subsystems development, unconventional fuels (VLS-DS/CN)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN2)	2008-2011	University Politehnica of Bucharest – Research Center for Aeronautics and Space (UPB – RCAS)	-Romanian Space Agency - National Institute of Aerospace Research "Elie Carafoli", Bucharest, Romania -Electromecanica Ploiești SA, Romania -SC Tohan SA, Brasov, Romania -CN Romarm SA, Bucharest, Romania -Syscom 18, Bucharest, Romania -Comfrac Project, Bucharest, Romania	460 000 (state budget) 235 000 (co-financing)	http://www.pubrcas.ro/satellite%20launching%20rocket.html
22	Secure and more reliable aeronautical structures repaired with smart composite materials (SFSAR)	National Centre for Programme Management (CNMP) –Ministry of Education, Research, Youth and Sport, Romania	2008-2011	Institute of Research for Aeronautical Structures (STRERO SA), Bucharest, Romania	- Politehnica University of Bucharest, Romania - National Institute of Aviation (SC INAV S.A.), Bucharest, Romania - SC IAR S.A. Brasov, Romania	640 000	http://www.straero.ro/prj.php?act=ong&etap=sfsar
23	The increase of the energetic efficiency of the turbo-engines used in the cogenerative cycle by development of new advanced Ti-base materials and special surface coatings (MANTITU)	National Center of Management Programmes (CNMP) – Ministry of Education, Research, Youth and Sport, Romania	2008-2011	COMOTI National Research and Development Institute for Gas Turbines Bucharest, Romania	-SC ZIROM SA, Giurgiu, Romania - Polytechnic University Bucharest (Center for Special Materials Research and Expertise – CEMS), Romania - SC PLASMA JET SRL, Bucharest, Romania -SC MIP METAV IND PROD SRL, Bucharest, Romania	472 000	http://www.comoti.ro/en/Proiect_MANTITU.htm?pag=1
24	Turbofan engine nacelle aerodynamic optimization to increase flight safety and reducing pollution levels	National Center of Management Programmes (CNMP) – Ministry of	2008-2011	COMOTI National Research and Development Institute for Gas	- GECL , Bucharest, Romania - INCAS, National Institute of Aerospace Research "Elie Carafoli" - University Politehnica Bucharest - "Gheorghe Mihoc-Caius Iacob" Institute of Mathematical Statistics	100 000	http://www.comoti.ro/ro/Proiect_OPATAN.htm

	(OPATAN)	Education, Research, Youth and Sport, Romania		Turbines Bucharest, Romania	and Applied Mathematics of Romanian Academy, Bucharest, Romania		
25	Modern, performant, low-grade pollution technology destined to achieve hard surfaces for the aircraft components and turboengines used to produce energy (TESUPAV)	National Center of Management Programmes (CNMP) – Ministry of Education, Research, Youth and Sport, Romania	2008-2011	COMOTI National Research and Development Institute for Gas Turbines Bucharest, Romania	- Polytechnic University Bucharest (Center for Special Materials Research and Expertise – CEMS), Romania - SC PLASMA JET SRL, Bucharest, Romania -SC MIP METAV IND PROD SRL, Bucharest, Romania - Calculation and Testing Institute for Aero Structures – SC Astronautics STRAERO S.A. Bucharest, Romania	273 000	http://www.comoti.ro/en/Proiect_TESUPAV.htm
26	Mechanisms of thiols photo-oxidation by reactive species generated in the phthalocyanines 6ic el6ist6ation	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania	2009-2010	-Laboratoire de Chimie Physique et Rayonnement Alain Chambaudet UMR EA, France - The National Institute for Lasers, Plasma, and Radiation Physics, Romania	-The National Institute for Lasers, Plasma, and Radiation Physics, Romania -Laboratoire de Chimie Physique et Rayonnement Alain Chambaudet UMR EA, France	NA	http://lsg.inflpr.ro/BRANCUSI2.html
27	Mathematical models for complex limit state in composite materials	National Council of Scientific Research in Higher Education (CNCSIS), Ministry of Education, Research, Youth and Sport, Romania	2009-2011	Institute of Research for Aeronautical Structures (STRERO SA), Bucharest, Romania	NA	37 000	http://www.straero.ro/prj.php?act=ong&etap=memslicomp
28	Micro and nanostructured zirconia based compositional grade materials for termo-resistant structures with application in 6ic el6is and aeronautics (GRAZIR)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania	2009-2013	National Institute for Research and Development of Non-ferrous and Rare Metals (INCDMNR – IMNR), Ilfov, Romania	- National Institute for Aerospace Research “Elie Carafoli”, Bucharest, Romania - University “Politehnica” Bucharest (Biomaterials Research Centre), Bucharest, Romania - National Research and Development Institute for Gas Turbines – COMOTI, Bucharest, Romania - Plasma Jet S.A., Ilfov, Romania	414 000	http://www.imnr.ro/6ic el/index_eng.html
29	Electrical degradation and lifetime reserve estimation of polymeric cables insulations (DEDIC)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PNCDI 2, Ideas)	2010-2012	National Institute for Research and Development in Electrical Engineering (ICPE-CA), Bucharest, Romania	- University Politehnica of Bucharest (Electrical Materials Laboratory – ELMAT), Romania - University Montpellier (Energy and Materials Department), France		http://www.icpe-ca.ro/lib/files/siteDEDIC/en/objective.html
30	Laser printing of organic/inorganic material for	Seventh Framework Programme	2010-2013	Centre National de la Recherche	-National Institute for Lasers, Plasma and Radiation Physics, Romania -Toplink Innovation, France	4 160 000	http://www.e-lift-project.eu/

	the fabrication of electronic devices (E-LIFT)	'Cooperation' – Research theme: 'Information and communication technologies' (FP7-ICT)		Scientifique (CNRS), France	-Acxys Technologies, France - Tagsys, France - Association pour la Recherche et le Developpement des Methodes et Processus Industriels – ARMINES, France -Paul Scherrer Institut, Switzerland - Eidgenoessische Materialpruefungs- und Forschungsanstalt, Switzerland -Microsens S.A., Switzerland - Laser Micromachining Limited-LML, UK -University of Southampton, UK - National Technical University of Athens, Hellas - Biosensor S.R.L., Italy - National Council of Research, Italy - University of Barcelona, Spain		
31	Sensors based on perovskite complex structures for detection and identification of hazardous substances	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania	2012-2015	National Institute for Research and Development of Non-ferrous and Rare Metals (INCDMNR – IMNR), Ilfov, Romania	NA*	680 000	http://uefiscdi.gov.ro/userfiles/file/PARTENERIATE/Competite_2011/REZULTATE%20FINALE/TIP%202/T2%20-%20D8.pdf
32	Environmental toxic and flammable gas detector based on silicon carbide MOS sensor array (SIC-GAS)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania	2012-2015	National Institute for Research and Development in Electrical Engineering (ICPE-CA), Bucharest, Romania	- Politechnica University of Bucharest, Romania - National Institute for Research& Development in Microtechnology, Bucharest, Romania - SC CEPROCIM SA, Bucharest, Romania - SC InterNET SRL, Bucharest, Romania	680 000	http://www.icpe-ca.ro/en/partnerships/priorityareas
33	Interdisciplinary research on multifunctional hybrid particles for bio-requirements (INTERBIORES)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania	2012-2015	Institute of Macromolecular Chemistry "Petru Poni", Iași, Romania	- University of Medicine and Pharmacy "Gr. T. Popa", Iași, Romania - National Institute for Research and Development in Physics, Iași, Romania - S.C. Incerplast S.A., Bucharest, Romania - S.C. Rezistoterm S.R.L., Iași, Romania	160 000	http://www.umfiiasi.ro/Cercetare/Granturi/Lists/Granturi/DispForm.aspx?ID=94
34	Thin film photodetectors – new concepts and studies for aerospace applications (CONDAS)	-National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania -Romanian Space	2012-2015	National Institute for Research and Development in Micro technology (IMT), Bucharest, Romania	NA	NA	http://star.rosa.ro/downloads/ListProiecteCDI_PropuseFinantare_C1_2012_STAR.pdf

		Agency (CDI-STAR)					
35	Research Project on the Development of an Original Fuel Cell Technology Dedicated to Long-Distance Outer Space Manned Missions (FctoOutSpace)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania -Romanian Space Agency (CDI-STAR)	2012-2015	S.C. ET Innovative Solutions S.R.L., Constanta, Romania	NA	NA	http://star.rosa.ro/downloads/ListaProiecteCDI_PropuseFinantare_C1_2012_STAR.pdf
36	Composite structures resistant at dynamic loadings applied with high deformation speeds used in the field of collective protection	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN2)	2012-2015	University Politehnica of Bucharest, Romania	NA	682 000	http://www.cndi.ro/wp-content/uploads/2012/06/T2-D8.pdf
37	Innovative method and system for the detection of drug traces by plasma-laser assisted mass spectrometry (PN-II-PT-PCCA-2011-3.1-1136)	ANCS	2012	Agavni Surmeian --ational Institute of Laser Plasma and Radiation Physics	NA	510.000 lei	http://uefiscdi.gov.ro/userfiles/file/PARTENERIATE/Competite_2011/REZULTATE%20FINALE/TIP%201/T1%20-%20D8.pdf
38	Services and applications for emergency response (51EU)	ANCS	2010	Ion Nedelcu - ROSA	NA		http://uefiscdi.gov.ro/userfiles/file/CAPACITATI/PC7/Lista%20proiecte%20acceptate%20la%20finantare%202011.pdf
39	Spaceborne Multiple Aperture Interferometry and Sequential Patterns Extraction Techniques for Accurate Directional Ground and Infrastructure Stability Measurements (PN-II-PT-PCCA-2011-3.2-1448)	ANCS	2012-2015	SC Advanced Studies and Research Center SRL (ASRC) (Gavat Inge)	NA	2.990.000,00	
40	Orbital reaction vector, electronically-assisted with low-pressure propulsion	ANCS	2012	Association Dedicated to Development in Astronautics (Tarata	NA	2.996.200,00	http://www.cndi.ro/wp-content/uploads/

	module, for space and commercial applications (PN-II-PT-PCCA-2011-3.2-1760)			M.)			2012/06/T2-D8.pdf
41	Platform for Geoinformation Support of Disaster Management (PN-II-PT-PCCA-2011-3.2-0575)	ANCS	2012	National Meteorological Adm. (G. Stancaie)	NA	2.950.000,00	http://www.cndi.ro/wp-content/uploads/2012/06/T2-D8.pdf
42	Secured high volume free space optical communications based on computer generated holograms (PN-II-PT-PCCA-2011-3.2-0862)	ANCS	2012	Institutul National de Cercetare –Dezvoltare pentru Microtehnologie (IMT) (Kusco C.)	NA	1.950.000,00	http://www.cndi.ro/wp-content/uploads/2012/06/T2-D8.pdf
43	Environmental toxic and flammable gas detector based on silicon carbide MOS sensor array (PN-II-PT-PCCA-2011-3.2-0566)	ANCS	2012-2015	National Institute for Research and Development in Electrical Engineering (Neamtu J.)	- Politechnica University Bucharest (G. Brezeanu) - National Institute for Research & Development in Microtechnology (F. Craciunoiu) - SC CEPROCIM SA (I. Iordache) - SC InterNET SRL (D.V. Ofrim)	3.000.000,00	http://www.icpeca.ro/en/partnerships/inpriorityareas
44	Intelligent radio/video station aided GPS/Galileo for meteor detection (PN-II-PT-PCCA-2011-3.2-1322)	ANCS	2012	SC ELCOS PROIECT SRL (Birlan M.)	NA	3.000.000,00	http://www.cndi.ro/wp-content/uploads/2012/06/T2-D8.pdf
45	Ground-based Radar for very high precision Displacement measurements (PN-II-PT-PCCA-2011-3.2-1678)	ANCS	2012	University Politehnica Bucharest (Datcu M)	NA	3.000.000,00	http://www.cndi.ro/wp-content/uploads/2012/06/T2-D8.pdf
46	Composite structures resistant at dynamic loadings applied with high deformation speeds used in the field of collective protection (PN-II-PT-PCCA-2011-3.2-0622)	ANCS	2012	University Politehnica Bucharest(Mihai A).	NA	3.000.000,00	http://www.cndi.ro/wp-content/uploads/2012/06/T2-D8.pdf
47	Interdisciplinary research on multifunctional hybrid particles for bio-requirements (INTERBIORES) (PN-II-PT-PCCA-2011-3.2-0428)	ANCS	2012-2015	PETRU PONI Institute of Macromolecular Chemistry (Chiriac A)	- Universitatea de Medicină și Farmacie "Gr. T. Popa" din Iași - Institutul Național de Cercetare Dezvoltare pentru Fizică Tehnică din Iași - S.C. Incerplast S.A. București - S.C. Rezistoterm S.R.L. Iași	2.950.000,00	http://www.umfiiasi.ro/Cercetare/Granturi/Lists/Granturi/DispForm.aspx?ID=94
48	Interactive Meteosat Meteorological Application	ESA	2009-2010	European Space Agency- Plan for European	NA	NA	http://www.asc.ro/en/event_afisare/index/Interac

				Cooperating State			tive-Meteosat-ESA-Educational-Software-for-Meteorological-Applications
49	ROKEO - Romanian Knowledge-Centered Earth Observation	ESA-PECS	2009-2012	ROSA RC - Romanian Space Agency Research Centre	- ASRC - Advanced Studies and Research Center - University Politehnica Bucharest	NA	http://www.rosa.ro/index.php/en/esa/article/proiecte/proiecte-internationale/12-esa/308-rokeo.html
50	GISHEO - On demand Grid Services for High Education and Training in Earth Observation	ESA-PECS		Universitatea de Vest Timisoara - UVT	- West University of Timisoara - Romanian Space Agency - National Institute for Aerospace Research - Technical University of Cluj-Napoca		http://gisheo.info.uvt.ro/trac/
51	Content Based Query Concept for Exploration and Discovery of Information in Earth Observation and Medical Libraries (CONCEDE)	STAR	2012-2015	Universitatea Politehnica Bucuresti-Centrul de Cercetare pentru Informatie Spatiale (Vaduva C.)	NA	NA	NA
52	Research for development a telemedicine expert system for proving optimal medical on site response in disasters and emergency situations management (using the latest technology in biosensors, satellite communications, satellite navigations, IT etc. (TELEDIM)	STAR	2012-2015	IAROM SA (Bivolani D.)	NA	NA	NA
53	Advanced monitoring system of urban vegetation dynamics and predictive assessment of climatic and anthropogenic stressors impacts on Bucharest metropolitan area from satellite and <i>in situ</i> biogeophysical data (BUGREEN)		2012-2015	Institutul National de Cercetare Dezvoltare pentru Optoelectronica INOE 2000 (Zoran M.)	NA	NA	NA
54	Studies and systems for Romania's participation in the GNSS-GALILEO program	ROSA	2005-2015	SC IAROM SA Bucharest	-SC AEROSTAR SA Bacau -INTERGIS GRUP SRL Bucharest -Technical University of civil engineering of Bucharest		http://www.iarom.ro/#projects

55	Integrated security system for ventilation installations from strategical national interest buildings in case of chemical or biological attack SIPROV	CNMP, Programme 4 - Partnerships in priority areas	2012	Scientific research center for CBRN defence and ecology (N. Grigoriu)	- Military technical academy (MTA) - S.C. SINTACTIC GRUP SRL (SG) - S.C. ECOPROIECT SRL - Institutul National de Cercetare dezvoltare turbomotoare COMOTI Bucuresti (INCDT COMOTI)	1.980.000	http://www.comoti.ro/en/Proiect_SIPROV.htm?pag=1#
56	Laborator Aeropurtat pentru Cercetari Atmosferice de Mediu (ATMOSLAB)	Fondul European Dezvoltare Regionala pentru Programul Operational Sectorial "Cresterea Competitivitatii Economice",	2010-2011	INCAS (S.Radnef)	NA	18.000.000	http://www.incas.ro/index.php?option=com_content&view=article&id=238&Itemid=167
57	Joint Cypriot-Romanian Air Pollution Dispersion Research Studies for EU Harmonization (CY-ROMAN-AIR)	ANCS	2009	National Institute for Aerospace research Elie Carafoli – INCAS (D. Damian)	- University of Cyprus department of civil and environmental engineering		http://mail.incas.ro/PN%20II%20-%20Capacities/Cy-Roman_air_eng/index.html
58	Dezvoltarea de inhibitori naturali prieteni mediului, pe baza de extracte de plante, destinati combaterii atât a coroziunii, cât si a depunerilor de crusta (ICC) din instalatiile termice" - PLANTINHIB	ANCS	2008-2011	Institutul National de Cercetare-Dezvoltare pentru Inginerie Electrica ICPE-CA (INCIE ICPE-CA) (Lingvay I.)	- Institutul National de Cercetare-Dezvoltare Chimico-Farmaceutica - Universitatea Politehnica Bucuresti - Institutul de Biologie Bucuresti	826.451,22	http://www.icpe-ca.ro/ro/plantinhib
59	Towards an operational GMES land monitoring core (52EU)	FP7	2011	Ion Nedelcu - ROSA	NA	NA	NA
60	Growth and Survival of Colored Fungi in Space (CFS-A)	PECS/ESA	2010-2011	D. Hasegan - ISS, Măgurele	NA		http://www.nasa.gov/mission_pages/station/research/experiments/CFS-A.html
61	A multi-km3 sized Neutrino Telescope (Km3Net)	EU FP7	2008-2012	Ulrich F. Katz, Univ. Erlangen, Germany	39 institutions (ISS-member)	5000000 euros	http://km3net.org/home.php
62	Astronomy with a Neutrino Telescope and Abyss environmental REsearch", Mediterranean Sea (ANTARES)		1996-2010	M. Circella <i>INFN – Bari, Italy</i>	35 institutions (ISS-member)		http://antares.in2p3.fr/
63	"Portable Telemedicine Workstation Definition and Specification–PTW"	ESA - PECS	2009-2012	V. Vălean –National Institute for Lasers, Plasma and Radiation Physics/ ISS			http://www.astrobionix.com/ls_mj_olnir_toulouse_telemedizin.pdf
64	GEOLAND2 - Towards an	European Comission	2008-	INFOTERRA GmbH	ROSA , and 50 other partners		http://www.gme

	Operational GMES Land Monitoring Core Service (project number 218795).	-FP7	2012				s-geoland.info/
65	SAFER- GMES Emergency Response Service	European Comission -FP7	2008-	Infoterra Germany (ITD)	ROSA –and 57 other partners		http://www.emergencyresponse.eu
66	Balkan GEO Network – Towards Inclusion of Balkan Countries into Global Earth Observation Initiatives (Ref. Num.: 265176)	European Comission -FP7	2010-2013	University of Novi Sad	ROSA –and 14 other partners	990189 euros	http://www.balkangeo.net/
67	Metode avansate de analiza si control in hemodinamica cu aplicatii in chirurgia vasculara periferica (MAACH)	UEFCDI	2008-2011	Univ. Politehnica Bucuresti (Ing. Danaila Sterian)	-Univ. Tehnica Cluj Napoca -SC Advanced Studies and Research Center SRL -Univ. de Medicina si Farmacie Iuliu Hatieganu Cluj-Napoca -Instit. National de Medicina Aeronautica si Spatiale G-ral Dr. Av V. Anastasiu -Spitalul Clinic Judetean de Urgenta, Cluj-Napoca	2016227 lei	http://www.aero.pub.ro/wp-content/uploads/Contracte
68	Sistem integrat de caracterizare, monitorizare si antrenare asistata a locomotiei umane (CAMONAL)	UEFCDI	2008-2011	Institutul National de Cercetare pentru Sport (Profesor univ. dr. de Hillerin Pierre Joseph)	-Spitalul Universitar de Urgenta Elias Bucuresti -Univ. Politehnica Bucuresti -SC Onlinesolutions Media SRL -SC Advanced Studies and Research Center SRL	2159500 lei	http://www.camonal.sportscience.ro
69	Sistem integrat de avertizare timpurie, monitorizare si analiza a riscului la seceta pentru Romania (SIAT)	UEFCDI	2008-2011	Agentia Spatiale Romana (Dr. Savin Elena)	-Administratia Nationala de Meteorologie -Institutul National de Cercetare Dezvoltare pentru Imbunatatiri Funciare ISPIF Bucuresti -SC Geosystems Romania SRL -Univ. de Stiinte Agronomice si Medicina Veterinara Bucuresti	2022000 lei	http://siat.rosa.ro
70	Aparatura stiintifica si experimente de bord si la sol pentru monitorizarea oboselii neuromusculare a pilotilor in effort dinamic (AEXON)	UEFISCDI	2008-2011	Universitatea de Medicina si Farmacie Craiova (Tarata Mihai)	- Universitatea de Medicina si Farmacie Craiova - Centrul de Cercetari si Incercari in Zbor Craiova - SC IPA SA - Societate comerciala pentru cercetare, proiectare si productie de echipamente si instalatii de automatizare	1999480	http://www.ipacv.ro/aexon
71	Sistem pentru detectarea, clasificarea si identificarea factorilor subacvatici locali generatori de riscuri de securitate (SECRIS)	UEFISCDI	2008-2014	Centrul de Cercetare Stiintifica pentru Fortele Navale Constanta (Slamnoiu Georgica)	- Centrul de Cercetare Stiintifica pentru Fortele Navale Constanta - Universitatea Nationala de Aparare Carol I Bucuresti - SC Eltex Echipamente Electronice Industriale SRL Bucuresti - Directia Hidrografica Maritima Constanta - Agentia Spatiale Romana - S.C. DIGITAL BIT S.R.L. Bucuresti	2138190	http://www.cnm.p.ro:8083/pncdi2/program4/2008/main/index.php?&we=a4e9428fad82837902e19b9a12e1443f&wf=detail&id=2485&wc hk=863997e2c8b6ca3c0d9ffcc410085804
72	Cercetari pentru dezvoltarea unui sistem pilot de	UEFISCDI	2008-2011	SC IAROM SA Bucuresti (Bivolan	- SC IAROM SA Bucuresti - S.C. ELPROF S.A. Bucuresti	2450000	http://www.iarom.ro/docs/sistel

	telemedicina pentru monitorizarea, diagnosticarea, localizarea si salvarea persoanei via satelit (SISTELMED)			Dorel)	- Universitatea Politehnica Bucuresti - Universitatea de Medicina si Farmacie Carol Davila Bucuresti		med.pdf
73	Software Platform for pollution risk assesment in the case of soil and groundwater based on GIS technology and in-situ electrokinetic bioremediation technologies (BIOREGIS)	-National Centre for Programmes Management – (CNMP) Ministry of Education, Research, Youth and Sport, Romania -Institute for Computers (ITC-S.A.), Bucharest, Romania -PSV Company, Bucharest, Romania	2007-2010	Institute for Computers (ITC-S.A.), Bucharest, Romania	- PSV Company, Bucharest, Romania - National Centre of Geodesy, Cartography, Photogrammetry and Remote Sensing, Bucharest, Romania - The National Research & Development Institute for Industrial Ecology, Bucharest, Romania - Research Institute for Soil Science and Agrochemistry, Bucharest, Romania	276 000 (state budget) 75 000 (co financing)	http://bioregis.itcnet.ro/index_en.html http://bioregis.itcnet.ro/eng/rezultate.html
74	Electronic Nanodevices Based on Oxidic Materials NANOXI	Complex research project financed by the Programme of Research of Excellence (CEEX 2005), of Ministry for Education and Research (MEdC)	2007-2010	National Institute for Research and Development in Microtechnologies (IMT), Bucharest, Romania	-University Politehnica of Bucharest, Romania -Institute of Physical Chemistry "I.G. Murgulescu" Romanian Academy, Romania -National Research and Development Institute for Electrical Engineering- ICPE-CA, Bucharest, Romania -S.C. METAV-RESEARCH &DEVELOPMENT S.A., Bucharest, Romania	455 000 (state budget) 11 000 (co financing)	http://www.imt.ro/nanoxi/en/publications.htm http://www.imt.ro/nanoxi/en/results.htm
75	Advanced modeling methods and techniques based on the theory of deformable surfaces used in computer-aided surgery and other procedures for modeling anatomical structures (MoDef)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN II / Partnerships Programme)		Technical University Cluj-Napoca, Romania	NA	364 000	http://dicomge.utcluj.ro/modelf http://www.cnmp.ro:8083/pncdi2/program4/competitie/main/index.php?&we=26531b94a8aa9ff7df5c5d983a506cd6&wf=detail&id=1336&wchk=099d55887ad1f51a61febfb2777cd363
76	PhotoNIC amorphous NANOSTRUCTURES for Optoelectronics (NAFO)	National Authority for Scientific Research (ANCS)- Ministry of		-National Institute of Research and Development for Material Physics,	- National Institute of Glass SA, Bucharest, Romania -- National Institute of Research and Development for Optoelectronic INOE 2000, Bucharest, Romania	455 000 (state budget)	http://www.infim.ro/~lab150/projects/2007/PNCD2/PN2P/NAFO/inde

		Education, Research, Youth and Sport, Romania (PN II / Partnerships Programme)		Bucharest, Romania		28 500 (co financing)	x.html
77	<i>TWO-DIMENSIONAL CARBON NANOSTRUCTURES, PLASMA SYNTHESIS AND POTENTIAL APPLICATIONS (2D – NANO)</i>	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN II / Partnerships Programme)	2007-2010	National Institute for Lasers, Plasma and Radiation Physics, Bucharest, Romania	- Petroleum-Gas University Ploiesti, Romania - National Institute for Material Physics, Bucharest, Romania	455 000	http://plasmatic.inflpr.ro/2D-NANO/2D-NANO_Engleza.htm
78	Security elements with ferromagnetic microwires and field sensor for applications in electronic detection validation (FIRMAGIC)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN II / Partnerships Programme)	2007-2010	National Research and Development Institute for Electrical Engineering- ICPE-CA, Bucharest, Romania	- Institute for Research and Development for Cellulose and Paper, Romania - SC MEDAPTEH SRL, Bacau, Romania	432 000 (state budget) 52 000 (co financing)	http://firmagic.icpe-ca.ro/ http://www.cnm.p.ro:8083/pncdi2/program4/competitie/main/index.php?&we=26531b94a8aa9ff7df5c5d983a506cd6&wf=detail&id=256&wchk=6e1f2d87925161979dd2a8e21ba44bb7
79	The design and development of high-resolution dual-energy X-ray Radioscopic and Tomographic mobile and autonomous system destined for fast identification of the explosive materials during the antitero interventions (DUALTOMO)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN II / Partnerships Programme)	2007-2010	ACCENT PRO 2000 S.R.L., Bucharest, Romania	-University of Bucharest - Faculty of Physics, Romania - MIRATELECOM S.A, Bucharest, Romania	325 000 (state budget) 65 000 (co financing)	http://www.accent.ro/dualtomo.html
80	Research on implementation human blood detoxification by magnetic separation using support magnetic particles (MAGSEPDETOX)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN II / Partnerships Programme)	2007-2010	National Institute for Research and Development for Technical Physics (IFT), Iasi, Romania	-Institute of Macromolecular Chemistry "Petru Poni", Iasi, Romania -Technical University "Gheorghe Asachi", Iasi, Romania -University of Medicine and Pharmacy "Grigore T. Popa", Iasi, Romania	425 000	http://www.phys-iasi.ro/~bav08 http://www.cnm.p.ro:8083/pncdi2/program4/competitie/main/index.php?&we=26531b94a8aa9ff7df5c

		Programme)					5d983a506cd6&wf=detail&id=557&wchk=28c5a86d2965cd11e9c7d80b588fb3a9
81	Detection and identification of dangerous substances using ion mobility spectrometry coupled with mass spectrometry (MOBSPEC)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN II / Partnerships Programme)	2007-2010	National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj-Napoca, Romania	-Babes-Bolyai University Cluj-Napoca, Romania -National Institute for Research and Development of Cryogenic and Isotopic Technologies-ICSI, Rm. Valcea, Romania -Technical University Cluj – Napoca, Romania	444 000	http://www.itim-cj.ro/PNCDI/MOB_SPEC%28CCUNA%29/engleza.htm#_Results_disemination:
82	Proton Threshold States in Nuclear Stellar Cycles Mg - Al (PTSMgAl)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN II / Partnerships Programme)	2007-2010	Horia Hulubei National Institute of Physics and Nuclear, Bucharest, Romania	-Engineering - IFIN HH -Institute for Space Sciences - ISS -University Politehnica of Bucharest - UPB	455 000	http://iss30.nipne.ro/gpsm/proj/p tsmgal/en/pub.html
83	Smart Detector for Toxic Gases (DIG)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN II / Partnerships Programme)	2007-2010	National Institute for Research and Development Lasers, Plasma and Radiation, Bucharest, Romania	-N.B.C. Defence and Ecology Scientific Research Center, Romania -University Politehnica of Bucharest, Romania -S.C. Pro Engineering S.R.L., Romania -METAV-CD S.A. , Romania	455 000 (state budget) 46 000 (co financing)	http://dig.inflpr.ro/results.html
84	Composite textile structures for electromagnetic radiation protection systems (SIR)	National Authority for Scientific Research (ANCS)- Ministry of Education, Research, Youth and Sport, Romania (PN II / Partnerships Programme)	2007-2010	Technical University “Gheorghe Asachi”, Iasi, Romania	-National Research and Development Institute for Electrical Engineering- ICPE-CA, Bucharest, Romania -Institute of Macromolecular Chemistry “Petru Poni”, Iasi, Romania -University of Medicine and Pharmacy “Grigore T. Popa”, Iasi, Romania -.SC MEDAPTEH SRL, Romania	455 000 (state budget) 7 000 (co financing)	http://www.sirpro.ro/
N	Mobile system for biological and chemical detection, identification and monitoring	National Authority for Scientific Research (ANCS)-	2007-2010	Center of Scientific Research for NBC Defense and Ecology,	-Center of Medical-Military Scientific Research, Romania -University Politehnica of Bucharest, Romania - University of Bucharest, Romania	432 000 (state budget)	http://www.nbce.ro/index.php/pncd2/proiect/6/ro

(LITECAT)	Ministry of Education, Research, Youth and Sport, Romania (PN II / Partnerships Programme)		Romania	-SC UTI SYSTEMS SA, Romania	26 000 (co financing)	
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*NA-Not Available

Project No.	Project Summary
1	<p>EMDPA will provide research laboratories and industry with a unique “multi-dimensional” analysis tool of all types of layered materials, allowing direct, simultaneous elemental and molecular quantitative measurements with a sensitivity down to 100 ppb in the depth profiling mode for all elements of the Periodic Table, in observed zones of 16ic el16ist dimensions, through the development of a Micro Modulated or Pulsed Radio Frequency Glow Discharge Time of Flight Mass Spectrometer.</p> <p>Such instrument represents a major breakthrough as it will change the way surface and depth profiling analysis is regarded, being ultra fast, easy to use and low cost. The instrument is dedicated to the depth profiling of advanced materials made of conductive and/or non-conductive thin layers down to the 16ic el16is scale.</p> <p>The EMDPA project aims to input radically new knowledge into the development of an innovative ultra fast, easy to use and low cost micro modulated or pulsed RF GD-TOF mass spectrometer dedicated to the surface analysis and depth profiling (16ic el16is (nm) depth resolution) of new materials with conductive and non-conductive thin layers down to the nm scale – including metal/inorganic/organic multilayers, self-assembled monolayers, doped polymers and biomaterials</p> <p>Moreover, EMDPA will provide an affordable “multi-dimensional” advanced material characterization, allowing direct simultaneous elemental and molecular measurement with a sensitivity of 100 ppb in the depth profiling mode for all elements, with 16ic el16ist spatial resolution.</p>
2	<p>3D-DEMO is an international research project funded by the European Commission (FP6). It proposes a new vision in thin film deposition that will associate effectively cost 16ic el16ist16a, flexibility and sustainability based on Laser-Assisted Chemical Beam Epitaxy (LACBE) process. The proposed method will allow to grow multi-component oxides with 3D patterning of properties during the growth in only one step (3D selective and graded properties at the micrometer and 16ic el16is scale).</p> <p>Thin film deposition and patterning is a key challenge in device 16ic el16ist16atio and the implementation of novel functionalities. Complex oxide materials have long been considered as very promising because they exhibit a wide range of properties not to be found easily in other materials. However, the production of structured high quality films of complex oxides is still very challenging. We are proposing a new vision in thin film deposition that will associate effectively cost 16ic el16ist16a, flexibility and sustainability based on a Laser-Assisted Chemical Beam Epitaxy (LACBE) process with the following features: high quality films; epitaxial growth; controlled stoichiometry; 3D patterning.</p> <p>Laser-Assisted Chemical Beam Epitaxy may well be the key to provide the future device requirements that today’s methods can not address. Laser-Assisted Chemical Beam Epitaxy will allow to grow multi-component oxides with 3D patterning of properties during the growth in only one step (3D selective and graded properties at the 16ic el16ist and 16ic el16is scale). In particular, the objective of 3D-DEMO is to study the growth of complex oxide thin films for electro-optic and piezoelectric applications. 3D-DEMO will develop hardware and processes for Chemical Beam Epitaxy (CBE) to: (1) achieve good film uniformities on 100 to 150 mm wafers, (2) allow for systematic stoichiometric variations in combinatorial research, (3) allow for in-situ structured growth by laser assistance.</p>
3	<p>The objective of the project was the development of composite carbon-carbon and carbon-polymer advanced with structural performance, Thermo-mechanical and tribological high appropriate environmental standards and international requirements that replace conventional materials.</p> <p>The derived objectives:</p> <ul style="list-style-type: none"> -greening of air and land transport (asbestos-free friction materials), improved comfort and safety of passengers and looking for future transport solutions by implementing advanced CC composite with structural performance, thermal, mechanical and tribological high, the corresponding terms environmental standards and international requirements -connection to current research in the field of advanced materials in aerospace applications, as the integration in the European FP7 programs and interdependence consistent with the strategic research agendas of European Platforms EuMaT, ACARE ERTRAC

	<p>- forming a core of young professionals in a field of advanced materials for aircraft and aerospace</p> <p>- collaboration between entities of research and development, innovation and economic agents</p> <p>-dissemination</p>
4	<p>AVERT is a Specific Targeted Research Project within the thematic priority <i>Aeronautics & Space</i> of the Sixth Framework Programme of the European Commission, involving 17 high-profile partners from all over the European Union. The project began in January 2007 and will have a duration of 36 months. It's contract number is AST5-CT-2006-030914. The AVERT project will deliver upstream aerodynamics research that will enable breakthrough technology and innovative aircraft configuration leading to a step change in aircraft performance.</p> <p>The project will contribute towards:</p> <ul style="list-style-type: none"> • strengthening the competitiveness of the European manufacturing industry; • improving the environmental impact of aircraft concerning emissions <p>The main objective of the AVERT project is the development and industrialization of active flow control technologies for application to a realistic configuration, thereby reducing drag significantly.</p> <p>AVERT aims for a 10% improvement in cruise lift-to-drag ratio in addition to that promised by the 'pro-green' configuration.</p>
5	<p>The overall objective of the project is to test, validate and apply the latest methods used at European level on the characteristics of Romania hydrostructures, so maps of vulnerability obtained to form a standardized support necessary to fulfill legislative requirements in the field of water resources protection, domain approached in European programs (COST 65, COST 620) where Romania has not been present until now.</p> <p>Develop maps of vulnerability to different types of aquifers by applying the methodology developed, test and validate it on the pilot areas. Working methodology applied in European countries requires the use of specific parameters monitored with modern equipment, techniques and data storage mapping based on the use of GIS, application of advanced concepts for analysis of groundwater flow and contaminant transport. Evaluation is generally qualitative and there are several methods of determination. New research directions aimed to identifying the needs for development of a dynamic link between groundwater numerical models and methods based on overlapping maps and indexes. In Romania, European legislation was implemented by adapting the WFD and is currently working on adapting groundwater directive. Main method for assessing groundwater vulnerability map is overlap method, not even their usual combination of mathematical modeling method indexes or contaminant transport. Current state of knowledge in the field but not before the Romanian socio-economic development and climate change that is reflected in critical situations in terms of the water reached, both in terms of both quality and quantity. Sustainable management of groundwater resources is one of the key elements to ensure a sustainable development in Romania, both socially and economically.</p> <p>The development of a methodology for determining the vulnerability of aquifers will provide the framework for the development of vulnerability maps for all aquifers in Romania, at a European standardization.</p> <p>Maps and information contained in them will be used by agencies and institutions in water management in order to ensure sustainable development of society.</p>
6	<p>The project is dedicated nano components based on carbon nanostructures (carbon nanotubes and graphene) working in GHz specific wireless communications and sensors that monitor the environment. Nanoelectronics is currently the most developed of nanoscience, based on unique physical phenomena that occur in components and nano-electronic circuits. Nanoelectronics is a peak field of high technologies and includes in-depth knowledge of quantum mechanics, electronics, materials science and chemistry. In recent years, several research institutes in Romania (NIRD-Microtehnologie (IMT), INCD Materials Physics), University Politehnica Bucharest reached critical mass required both the multidisciplinary knowledge of nanoelectronics as well as the endowment with modern facilities apartura and specific underlying nanotechnology nano components. The existence of this critical mass of knowledge both at nano-scale physical phenomena as well as a basic infrastructure for the nano, encouraged us to propose this project with a very avansata. Proiectul theme aims to design, simulation and implementation of three demonstration use properties of carbon nanostructures, much higher than current semiconductor materials and thereby to implementaeze a set of nanotechnologies capable of producing nanoscale circuits based on carbon nanotubes (CNT) and graphene on a small scale.</p>
7	<p>STAGE I Studies and analysis regarding the geometries of metamaterial devices structures for millimeter wave frequencies (results)</p> <p>STAGE II Simulations of experimental CRLH structure models in millimeter wave range (results)</p> <p>STAGE III Design of functional models of CRLH media in millimeter wave range and execution of an experimental model of transmission lines on artificial CRLH media through laser ablation microprocessing (results)</p> <p>STAGE IV</p>

	<p>Design of a functional model of millimeter wave device structures on metamaterials</p> <p>STAGE V</p> <p>Development of a functional model of millimeter wave devices structures and functionality and utility demonstration of the models</p>
8	<p>Conventional nanolithography techniques are limited to the formation of two-dimensional structures in a limited number of materials and flat surfaces. Soft lithography concept suggests a new approach to Nano: advanced nanolithography techniques will be used to prepare master's, and it will still be transferred in organic polymers or other materials using procedures such as molding, printing, embossing or combinations them.</p> <p>LISOFT main purpose of the project is to develop new processes for making and replicating micro and nanophotonics components based on soft lithography techniques (molding, embossing, nano-imprint). The project aims to develop new photonics fabrication techniques, their application to the development of micro-and nano-photonics structures and their use in applications. LISOFT is a complex project, which includes all stages from development to application development materials, all stages are interconnected.</p> <p>Partners have global features: software design, technological equipment, equipment characterization (eg equipment with e-beam nanolithography, installed in 2006, is one of the country).</p> <p>Based on these techniques can be carried Components micron and submicron photonic detailing a cheap technology. Made components (eg diffraction gratings, resonators, polarized surface acoustic wave devices, lenses, prisms, etc..) Will be multiplied and transferred to a high degree of fidelity in organic and hybrid materials.</p> <p>Leading the development of these technologies will be exploited in the future both new research and the introduction in manufacturing the industrial partner (P1) of products and systems and internationally will result in improved participarii partners in international projects and to extend the market.</p>
9	<p>By materials ablation with fast pulsed lasers (femtoseconds), the thermal effect round the ablated area is negligible. By laser beam focusing at diffraction limit, good quality and reproducible micro-processing with sub micron resolution can be obtained on metals, plastics, and dielectrics. Due to the very high laser pulse power density (GW-TW/cm²), the nonlinear optical effects of multiphotonic absorption are dominating. So, laser radiation can be absorbed even in transparent materials for the fundamental wavelength (775 nm, in our case). Multiphotonic absorption took place in smaller volumes than laser focused spot size, only where the laser intensity overtakes the threshold of the nonlinear optical effect. For some photopolymerizable materials in UV (387 nm, second harmonic of our laser), periodic structures with hundreds of nm in size can be made by two photon absorption polymerization. Due to these peculiarities in interaction with materials, the femtosecond pulsed lasers can be an efficient tool in the technologies for nano-structured materials manufacturing.</p> <p>Negative refractive materials, very intensive studied worldwide in the last years, open the possibility for new basic phenomena and for promising applications as well in electromagnetic waves communications, development of super lenses with sub-wavelength resolution and antireflective materials. Such new artificial materials can be made as metamaterials (MTM) structures or photonic crystals (CF). MTM are artificial periodic structures with cell dimension much smaller than the electromagnetic radiation wavelength. The incident wave "sees" MTM like a homogenous structure; the refraction prevails over diffraction and scattering phenomena. In this case, the negative refractive index in a certain frequency domain is given by the simultaneous negative electric permittivity and magnetic permeability realization. CF are periodic structures interacting with photons like semiconductor crystals with electrons. Since photonic crystals lattice period is comparable with the wavelength, diffraction and scattering phenomena determine the frequency band gaps or frequency bands related to a negative refractive index.</p> <p>"Classical" techniques used to manufacture such structures are microelectronic processing (vacuum deposition of metallic or dielectric layers, photolithographic processing). The actual worldwide tendency of extending MTMs from GHz to THz and further to optical domain requires innovative technologies able to lead the processing resolution in the nanometric domain. The scientific novelty and complexity of the project is given by the association of microelectronic processing techniques with the photonic ones based on femtosecond pulsed lasers (the project will use the oscillator-amplifier laser CPA 2101 from INFLPR). We have in view the improvement of the processing resolution down to the nanometric level and the manufacturing of new complex nano-structured materials functioning at high frequencies (GHz, THz, infrared), materials that usually are not accessible through the microelectronic techniques alone. The Project has two main general objectives:</p> <ol style="list-style-type: none"> 1. The increasing of the research & development competitiveness by up-grading the existing femtosecond laser facility from INFLPR with advanced computer assisted systems, to achieve the sub-micron processing resolution of the new complex nano-structured materials. 2. Metamaterials processing and direct laser writing of photonic crystals according to the elaborated models. The new materials characterization in order to validate the processing techniques and to develop new devices for communications in the range of GHz to infrared frequencies.
10	<p>The project aims to study the structural transformations and physical phenomena that occur in ultraviolet laser processing of nanostructured oxide thin films with applications in transparent electronics and conventional. Will perform and study of oxide thin films: HfO₂, SiO₂, ZnO, Co₃O₄, and mixed oxides doped with electrical properties conducting, semiconducting and insulating films with magnetic properties, with applications in transparent electronics and conventional.</p> <p>Laser irradiation is an unconventional method of processing thin films, which allows the use of thermal and photothermal nonequilibrium processes induced by laser radiation in the ultraviolet, the production of materials and micro and nano scale structures with new electrical and optical properties.</p>

	<p>Is expected to get a significant effect of nitrogen doping of ZnO oxide films produced by sol-gel technology for obtaining semiconductor films with p-type conduction</p> <p>Most of oxide films studied in the project will be achieved through sol-gel method to obtain nanostructured oxide films with nanometer thickness, stoichiometry controlled, reproducibility and uniformity on large areas.</p> <p>The main structural data will be obtained by viewing movies section (cross section XTEM) by transmission electron microscopy. Layers are structurally characterized by SEM, AFM, XRD and spectroscopic methods. The films will be characterized by electrical measurements for evaluating their applications in electronics characteristic or transparency and conventional.</p> <p>The preliminary obtaining oxide films with special properties, especially in the field of transparent conductive oxides and semiconductors and properties film or high-k oxide (HfO₂) deposited on silicon, as well as new experimental data on the phenomena of laser radiation interaction with matter</p>
11	<p>Advances in optical lithography underlying design of semiconductor devices reduction.</p> <p>Implementation of the F2 laser (157 nm) is printed silica point reduction to 70 nm. Research in order to obtain a material suitable for the optical wavelength initially turned to CaF₂. This material has significant shortcomings, including thermal expansion greater than 30 times that of vitreous silica. A new solution is the Vitreous silica doped with fluorine. It has been shown that this material can be optical transmission greater than 80% at 157.6 nm.</p> <p>Outstanding thermo-mechanical properties of quartz glass of high purity, especially very low thermal expansion coefficient and high resistance to thermal shock underlying research on doping with lanthanides vitreous matrix. Thermal shock resistance for medium laser Nd: SG (Nd: glass quartz) is 12.0 W / cm approx. 1.5 times higher than Nd: YAG, 7.9 W / cm.</p> <p>The overall objectives of the project are:</p> <ol style="list-style-type: none"> 1-Making a versatile technology for the synthesis of vitreous SiO₂-based, with high doping control for applications in photonics and optics required to achieve nanostructures and nano-scale integrated circuits. 2 Obtaining made based on a new technology-based materials SiO₂ doped with F-, to extend the 157.6 nm UV transmission. 3 – Obtaining a new class of applications of nonlinear active medium based on lanthanides doped SiO₂ with low thermal expansion coefficient and high resistance to thermal shock. <p>The project is part of research: 1. Information Technology and Communications, specific research objectives:</p> <p>1.7 Nanoelectronics, photonics and integrated micro, namely:</p> <p>Nanoelectronics: 1.7.1 Testing of new materials and technologies for nanostructures and nano-scale integrated circuits.</p> <p>Photon: 01/07/10 November photonic materials.</p>
12	<p>The project is focus on experimental model development for reformer to obtain ultra pure hydrogen from methane gas, based on the most promising and new technology for steam reforming of methane gas membrane reactor.</p> <p>The novelty of theme consist in:</p> <ul style="list-style-type: none"> • develop for the first time, on national plan, the pure hydrogen production problem using membrane reactors; • open new perspectives in using of advanced methods for pure hydrogen production studied on national and international plan; • contributes at obtaining of advanced knowledge into a new field, very new on global plan. <p>The complexity of project is accentuated by:</p> <ul style="list-style-type: none"> • development of a new technique for pure hydrogen production, membrane reformer respectively; • the number, complexity and diversity of specific parameters which are studied; • the complexity and number of analysis and measurements which must developed: mass spectrometry, gas-chromatography, diffraction with X rays, microscopy of atomic force, electric and electronic measurements, acquisition and data processing; • concomitant development of a new techniques and knowledge from different fields as organic chemistry, inorganic chemistry, analytical chemistry, physics-chemistry, physics, mechanics, electricity, electronics and automatizations.
13	<p>The excessive pollution produced by the aircraft engines has to be drastically reduced due to new regulations concerning environment protection. To cope with Nox emissions reduction the future turboreactor engines will be characterized by lean premixed flames (increase of the air/fuel ratio). This improvement leads, among others, closer to the flame blowout limit, which means reduction of the burning temperature. In these conditions the pollutant emissions are decreased but appear thermoacoustic instabilities. The acoustic resonance induced by flame fluctuations can generate big pressure oscillations inside combustion chamber. These thermoacoustic instabilities can produce, among growth of the acoustic emissions, even deterioration of the mechanical properties of the structure.</p> <p>General Objectives</p> <ol style="list-style-type: none"> 9. Development of new techniques and technologies for thermoacoustic instabilities mechanisms observed inside the combustion chamber of the aircraft engines ; b) The proposition of new type of system that can control actively the suppression of these instabilities for a wide range of operation conditions .

	<p>Specific objectives and estimated results</p> <ol style="list-style-type: none"> Construction of a combustion chamber model for experimental tests; Dominant frequencies identification at the inlet of the combustion chamber; Comparison between experimental and numerical results; Interpretation of the obtained results and identification of the instabilities mechanisms; Active control system proposal for instabilities suppression. <p>The novelty of this project are the usage of high performance computing programs and modern technologies of active control of flame stability in low premixed combustion.</p>
14	<p>Final results of the project: A prototype transformer cooling agent having one magnetic ferrofluid.</p> <p>Novelty:</p> <ul style="list-style-type: none"> Process modeling of heat transfer and fluid flow study magnetic external electric and magnetic fields (experimental model designed) Finalize procedure for obtaining and characterization of ferrofluid samples of different concentrations to be used by the partner ICMET Craiova. Magnetic fluid sample preparation used as cooling agent transformers, Preparation of magnetic fluid samples for use on bushings
15	<p>Project objectives:</p> <p>The overall objective of HISTOMAT is to develop new solid hydrogen storage materials that can lead to an efficient storage system in terms of cost, safe and comfortable with possible applications in vehicles on-board storage. For the purpose of this idea, applying innovative research in the field of nanostructured carbon materials and their doping with inorganic compounds will lead to a new nanostructured hybrid materials that could combine a proper pore structure (eg large surface area and narrow pore large amount) with the presence of metals that act to enhance the ability of these materials to store hydrogen. Also, for Areus optimize storage capacity of solid materials, synthesis and characterization of the studied material must be accompanied by a fundamental understanding of phenomena and processes occurring during detention and release hydrogen, while remaining mindful of the specific operating conditions of the materials as they are defined by their applications</p> <p>Development of a hydrogen storage system, secure, mobile and efficient in terms of cost is a solution to the so-called hydrogen economy. Unlike gasoline, hydrogen is gaseous at room temperature and diffuses through the coating container due to the small size of the molecule, which makes it difficult to store. Storage technology such as high-pressure containers or liquid hydrogen storage systems are well developed, but it has drawbacks unacceptable on energy density, cost, complexity, safety, reliability, and during refueling. Besides these traditional hydrogen storage systems, there is an increasing interest in other types of storage such as solid specific materials where hydrogen interacts and binds to surface molecular network. In the last decade, several studies have been directed toward the development of a suitable material for this type of hydrogen storage, in any case, a suitable material for hydrogen storage has not yet been found. A characteristic of the material plays an important role in hydrogen storage behavior is the enthalpy of adsorption. Although activated carbon adsorption enthalpy shows a very small (about 6 kJ / mol), corresponding to a physical adsorption process and of the resulting weak links of hydrogen molecules on the surface of carbonic adsorbents, metal hydrides shows the adsorption enthalpy values relatively high (classical materials aproximetiv 80 kJ / mol), resulting very strong links between hydrogen and metal. Therefore, if physical adsorption are required very low temperatures and high pressures for storing acceptable amount of hydrogen, on the other hand, if chemisorptiei on metal hydrides is a certain amount of energy required to break the strong ties between metal and hydrogen, reducing the overall efficiency of this option.</p> <p>Carbon materials facility has the advantage that it can be adjusted in terms of structural and chemical properties and in addition, they have a low weight compared with traditional hydrides. Thus, a potential hydrogen storage material can be a material that can combine the advantages of hybrid carbon materials and metal, minimizing the disadvantages of both when used separately. These materials could have a physical adsorption enthalpy between 6-80 kJ / mol, lightweight and porous structure adjusted to increase storage capacity.</p>
16	<p>The main goal of this project is to search and develop metallic hydrides integrated systems for hydrogen applications concerning energy conversion and development of a metal hydrides based heat engine powered by solar energy or residual energy. Characteristic for these hydrides systems is the wide area of possibilities to absorb hydrogen at low pressure from any source of hydrogen, to storage it and deliver this hydrogen at high pressure (compression ratio more than 30). This is used to develop a heat engine using hydrogen like a working fluid, powered by solar energy or residual heat, able to convert heat energy directly in mechanic energy in a Brayton cycle.</p> <p>The main purposes of our proposal are the following:</p> <ul style="list-style-type: none"> Development and characterization of hydrogen absorbent alloys with high storage capacity, and great equilibrium pressure differences at little temperature gradients (dP/dT), acquired by the modeling of their properties, based of the solid state physics and surfaces studies. Elaborate new technical solutions based on advanced materials, for development of a hydrogen thermal compressing module, with fast mass and heat transfer using residual thermal energy or thermal energy from solar heat.

	<ul style="list-style-type: none"> · Research and development of hydrogen expansion module for water pumping actuation, able to work at high pressure and without hydrogen leakages. · Development of a water pumping system based on a metal hydride heat engine powered by solar energy, able to deliver water, at convenient flow and head pump, in solitude places without conventional energy access.
17	<p>Objectives-Stages</p> <p>Synthesis methods for obtaining FePt and CoPt ferromagnetic nanoparticles with narrow spatial distribution.</p> <p>Synthesis and characterization of the magnetic assemblies with narrow spatial distribution and structures of nanoparticles in porous alumina matrix.</p> <p>Correlation between structure characteristics, synthesis parameters and magnetic properties.</p> <p>Realization of ordered and auto ordered nanoparticles structures. Correlation between synthesis parameters and the characteristics of the ordered structures.</p> <p>Functionalization of the nanostructures based on magnetic nanoparticles and biocompatible polymers or copolymer blocs. Evaluation of their applicative potential.</p>
18	<p>The getting of some original materials, by recentness approaches, that can hydrogen store on bord, is the general objective of this project, in order to increase RD competition in a priority field, nominated by European Technological Platform “Hydrogen and Fuel Cells”.</p> <p>The project is centered upon the international up-to-date requirements, in accordance with goal and objectives of PNCDI-2. Promotion of clean energy technologies, environment conservancy measures and decreasing emissions with greenhouse effect, through achieving advanced materials for efficient use of (hydrogen) energy and advanced technologies for modern transportation vehicles based on fuel cells. It tackle the quite new direction for hydrogen storage materials MOF – composites.</p> <p>The main purposes of our proposal are the following:</p> <ol style="list-style-type: none"> 1. Obtaining of efficient hydrogen storage materials with parameters required for mobile applications; 2. The extension of MOF and composites synthesis to large scale; 3. Development of a new storage method, more efficient than liquid hydrogen storage concerning energy consumption; 4. The build-up of the storage tank based on this method;
19	<p>Objective of the project consists in developing new oxide semiconductor optical properties, electrical (metal type, n or p-type semiconductor, dielectric) and dilute magnetic semiconductors (DMS), with controlled properties by doping.</p> <p>The final results of the project:</p> <ul style="list-style-type: none"> -Realization Technologies thin diluted magnetic oxide semiconductor materials with controlled doping -New elements of design, originality: <p>NANOSEMOXI project is original in that it exploits a wide range of properties of ZnO doped with magnetic ions and especially seeks control of charge carriers associated with ZnO structure and in close correlation with how to prepare the nanostructures of thin layers. Despite numerous articles on ZnO, the relationship between defect chemistry, Preparation and properties is elucidated. Despite its simple formula, ZnO has a very high defect chemistry. Defects have been studied for over 40 years but now must resume in the context of new applications using nanostructured materials.</p>
20	<p>The objectives of the project are:</p> <ul style="list-style-type: none"> -Setting target models photovoltaic structures. - Tehnologiiilor modeling of obtaining photovoltaic cells. - Synthesis and characterization of photovoltaic structures based thin. - Developing technology (laboratory) for obtaining photovoltaic cells. - Getting demonstrators devices.
21	<p>Project Overview</p> <p>VLS-DS/CN is a project that aims at developing functional subsystems that form a modern vector and at creating the basis for a sustainable development in this field. The success of this project is based on the experience of the partners in the required areas for completion of all the subsystems. The main components are the hybrid rocket engine (MRCH), the solid-fuel rocket engine (MRCS), the inertial guidance system (INS) and the carrying vector.</p> <p>General objectives and estimated results</p> <p>The technical objectives start from the idea of creating the basis for a sustainable development in the field, so that we are not aiming at finalizing immediately a specific vector with which to launch a satellite in space, but we aim at solving the critical issues of the main functional subsystems that are part of a modern vector. Therefore, the technical objectives of the project become:</p> <ul style="list-style-type: none"> Developing a laboratory model of a performance hybrid rocket engine (MRCH), with traction control, and a small-scale engine; Developing a laboratory model of a solid-fuel rocket engine (MRCS) of high traction which can ensure a high initial speed for the ground launching option , and of a small-

	<p>scale engine;</p> <p>Developing a laboratory model of a inertial guidance system (INS) that allows precise entering of the useful payload (the satellite) and of a telemetry equipment on the required orbit;</p> <p>Developing a small-scale vector and launching it on a high trajectory; developing these subsystems as laboratory models and by solving the main technical and technological issues represent the quantifiable objectives of the project, objectives that will represent the foundation for the next step accomplishment – a vector for launching satellites in accordance with our particular vision in a European regional cooperation project.</p> <p>The scientific objectives are represented by carrying out studies correlated with numerous experimentations that can led to mastering the phenomena specific to the technical objectives previously described, out of which we mention:</p> <p>The thermochemistry of burning in MRCH and MRCS;</p> <p>Traction control;</p> <p>Aerodynamics of hypersonic speeds in rarefied atmosphere,</p> <p>Dynamics of orbital launching;</p> <p>Defining risk zones and launching safety</p>
22	<p>The project integrates research internationally on the development of advanced materials with applications in aerospace industry leading main objective is increasing the safety, monitoring and repair of aircraft structures, fiabilizarii and operation, based on the use of a new generation of composite called smart. New smart materials called composites resulting from the combination of in situ matrix of electro-mechanical MEMS microdispozitive able to provide on-line information about the structural integrity.</p>
23	<p>The project MANTITU, integrates perfectly in PN II at the prioritary field 2 Energy, research direction 2.1 Lasting energetic systems and technologies; energetic security, research theme 2.1.3 The increase of the energetic efficiency on the entire energetic chain, with special accent on the reduction of the energy loss in the public and residential buildings and at the industrial consumers.</p> <p>The objective of the project is the execution of an energetic system (the turbine which works in cogenerative cycle) with characteristics superior to the actual ones (increased power and efficiency concomitant with the decrease of the fuel consumption) having in view to respect the principle of lasting development.</p> <p>The specific objectives of the project are the development of new technologies and materials from the type of titanium aluminide intermetallic alloys, concomitant with a new type of materials and technologies destined to the thermal resistant surface coatings for Ti-base alloys. Scopul proiectului este clar si bine definit, cresterea eficientei 22ic el22is a turbomotoarelor utilizate in ciclul cogenerativ la producerea energiei electrice, aburului si apei calde. The goal of the project is clear and well defined the increase of the energetic efficiency of the turboengines used in cogenerative cycle for the producing of electric energy, steam and warm water.</p>
24	<p>The project goal is to achieve high performance products in terms of optimizing aerodynamics by reducing overall air resistance coefficient of the nacelle. Improved performance turboprop engine installed in the nacelle involves reducing the specific fuel consumption and thus reduce emissions and increase traction by reducing losses in the group turbine air intake system in the engine and exhaust, weight reduction. The results of experimental research study will result in the national interest, publishing articles in magazines, national and international patents</p> <p>Reliability inertial icing, reducing vibration and noise produced products installed turbine nacelle group are also important goals of the project, the results constitute the first step towards the development of high-tech products industry transferable.</p> <p>General objectives</p> <ol style="list-style-type: none"> 1. Chemical pollution reduction, fuel economy respectuv turboprop engine installed in the nacelle by: <ul style="list-style-type: none"> - Reducing weight and aerodynamic resistance of the nacelle; - Lower losses gazodinamic route (air intake / exhaust) turboprop engine and oil cooling system. 2. Reliability installed turbine nacelle group by: <ul style="list-style-type: none"> - Achieving a reliable defrost system; - Establishing an efficient system for cooling the engine and nacelle ventilation and to minimize the risk of fire. 3. Reducing pollution and noise by soundproofing capotajelor nacelle composite materials.
24	<p>The project integrates perfectly in PN II at the prioritary field 3 Environment, research direction 3.1 Methods and mechanisms for reducing environmental pollution; research theme 3.1.1 Technologies with low degree of pollution, especially the energy transport and output.</p> <p>The project has as main objective the elaboration of technologies and achievement of new materials, destined to achieve hard surfaces for the aircraft components and for the turboengines used to produce energy, very low degree of pollution with no negative effects on humans.</p>

	<p>The specific objective of the project is the elaboration of the new specific technologies for the surface coverings which must have a high degree of hardness, using HVOF thermal spray process, obtaining in this context new special materials for the achievement of the special properties required by the aircraft and turboengines components.</p> <p>The goal of the project is the replacement of some strongly environmental polluting technologies and materials, having carcinogen effect on people, such as the hard chrome plating, with non-polluting technologies and materials (almost zero effect in the case of the project proposal) such as the HVOF thermal spray and WC/Co materials. The hard chrome plating is a technique that has been used for 50 years and it is an essential process associated both with the achievement of hard surfaces of the new pieces but also with the maintenance activities. This technology uses the chromium in the hexavalent state which is a known carcinogen and an environmental polluter. The environmental protection agencies from the most developed countries imposed in a first stage standards for the hexavalent chromium (MACT) and established permissible exposure limits (PEL) in the workplace of 100 milligrams / m³. The extremely recent studies have indicated that even at these standards the risk of cancer is very high, the presumed value which would lower the risk in a tolerable range would be between 0.5 – 5 milligrams / m³. At the present, all the highly industrialized countries from EU and USA study different possibilities for the hard chrome replacement, the most advanced ones in this direction being the North American states.</p> <p>The best results were obtained with the thermal spray coating process using the high velocity oxygen fuel (HVOF) technique.</p> <p>For the pieces of great importance such as the aircraft and turboengine components, the assimilation of a new method for the achievement of hard surfaces is very complex because the performances which have to be reached are very high and their attestation very complicated.</p> <p>The Romanian proposal is the hard chrome replacement, even for the extremely pretentious pieces, with a surface covering of thermal spray coating type according to a technology especially created for each support material using HVOF technique and a contribution material from the WC/Co group (in concordance with the support material).</p>
26	<p>The project aimed to contribute in the understanding of the interaction processes between the photo-generated reactive species (excited photosensitizers, oxygen singlet) and biomolecules as proteins and their compounds.</p> <p>According with the initial project objectives, the following research activities and results were performed and obtained:</p> <p>The selection and identification studies regarding the compounds of interest in thiol photo-oxidation mechanisms, namely the proteins: BSA, I, Lysozime and the aminoacids: cysteine, tryptophan, tyrosine and on the other side the photosensitizers methylene blue and phthalocyanines with diamagnetic metals (Zn, Cu, Fe Co, Ni).</p> <p>The development of the experimental set-up for the time resolved measurements of oxygen singlet phosphorescence emission in the interaction with biomolecules aiming to elucidate the mechanism of thiols oxidation.</p> <p>The photophysical basic data as the quantum yields and the lifetime of the oxygen singlet generated by the studied phthalocyanines were obtained.</p> <p>The experimental study regarding the thiols photo-oxidation by oxygen singlet; the constant of the oxygen singlet quenching produced by the cysteine was determined.</p> <p>The photo-oxidation of cisteine to cistine by UV 23ic el23ist23 in the presence of the photosensitizer Zn-phthalocianine, was emphasized using Raman spectroscopy.</p> <p>The 23ic el23is generation of oxygen singlet by the biological molecules as the aminoacids (23ic el23ist, tyrosine) and the proteins (human seric 23ic el23, bovine seric 23ic el23) was measured via the phosphorescence emission of oxygen at 1270nm.</p> <p>The development of a Laser Raman Spectroscopy 23ic el23is for the study of the changes in biomelecule structures induced by photo-oxidation was performed at INFLPR site, by the guide and support of the 23ic el partner. The system was tested on biological samples as cysteine and cistine as solid and water solution samples and gave good results.</p> <p>The know-how transfer between the two teams in the complementary domains of Raman spectroscopy and the time resolved spectroscopy for oxygen singlet phosphorescence detection was made 23ic el23ist23a.</p> <p>The modifications in the conformational structures induced by UV irradiation on I, BSA, cysteine, tyrosine residue, was studied by Raman Spectroscopy.</p> <p>Studies of the photo-oxidation produced by the singlet oxygen generated by the laser excited methylene blue on the biological compounds, the proteins: BSA, lysozime, the amnioacids: 23ic el23ist, tyrosine, were performed. The oxygen singlet quenching constants by these compounds in heavy water solutions at different pD were determined. These parameters are important in establishing the protein conformational structure and the exposure level of the aminoacids present in proteins to the harmful UV radiation.</p> <p>The results of the actual project were presented at 3 international conferences and are the base of a paper in preparation for the submission to a peer-review journal.</p> <p>Due to the good and fruitful collaboration during the present project, they were envisaged and established the bases and the frame of an application for a cotutele doctorate in the annual programme « DOCTORAT EN CO-TUTELLE » of the French Embassy in Romania.</p>
27	<p>Mathematical models for complex limit state Composite Materials</p> <p>stage I – 2009: Analysis of Mathematical Models Current areas not covered by the criteria of Fracture</p> <p>stage II – 2009: Setting priorities in addition to the criteria</p> <p>stage III – 2010: Defining and validating criterion Tsai-WU numerical and physical experiments</p>
28	<p>Functionally graded materials (FGM) are modern multifunctional materials that allow efficient use of homogeneous materials by introducing some gradual properties (mechanical,</p>

	<p>thermal, electric) variations by using composition, structure, texture and/or phase distribution gradients. The proposed project is accomplished by a multidisciplinary team from research and higher education and aims to increase partners' competence in the research domain 7. Innovative materials, processes and products in the frame of Programme 4 of the national R&D plan.</p> <p>The project is based on the latest results in the field known by the authors from the specialized literature, on partners' experience that continue in a synergic way their previous works and on their collaborations developed in this field with well known European partners. The main proposed activities are: - the synthesis of doped ZrO₂ based nanopowders with controlled distribution of constituents (core/shell) by environmental friendly chemical methods: hydrothermal, sol-gel;</p> <ul style="list-style-type: none"> - to produce new FGM type materials to be used for multi-layered thermal barrier coatings by different technologies (hydrothermal/electrochemical deposition, spin coating deposition, air plasma spray-APS and high velocity oxy fuel – HVOF) using nanopowders with controlled microstructure; - to study the correlation between synthesis/deposition methods and thermal and mechanical properties of materials; - to develop a complex testing methodology suitable for the elaborated materials and structures to be applied on the entire technological flow. Tests will be performed in extreme thermal conditions (rapid thermal shock). <p>The testing method will be compared with the conventional evaluation methods. Certain applications will be identified according to material performances (thermal barrier, thermal shock, thermal fatigue, mechanical resistance) that will be evaluated on natural models which will be subjected to tests on stand developed to experiment micro-engines and/or turbo-engine stand. The novelty and complexity degree is given by: - the use of core/shell powders to obtain the proposed multilayered structures; - the thermodynamic and kinetic studies focused on nucleation and growth processes occurring at the deposited film – metallic substrate interphase; as well as – the use of advanced testing methods to establish the properties of these materials. Among the proposed analysis, special attention will be paid to quick thermal shock test that will allow the study of delamination – exfoliation mechanisms and of the micro-structural changes induced by the temperature changes at a rate up to 100^osup>C/s. The proposed methodology will assure the preparation of new protective coatings with improved resistance at thermal-mechanical shocks by creating an intermediate layer with specific adherence characteristics and an exterior ceramic layer of TBC type. Technical-scientific results of the project will be jointly used and disseminated according to the Industrial Property Rights Agreement that will be signed in the first stage of the project. The participation of CNRS/PROMES Font Romeu, France stakeholder will assure the consultancy needed for the valorification of the innovative solutions according to the general and specific objectives stated in the Roadmap elaborated by Technological European Platform–EuMaT. All the partners are involved in FP6 and/or FP7 projects and/or proposals that are connected to the present field. The obtained results will assure active participation to submit further joint proposal in FP7 Programme.</p>
29	<p>Project PN-II-RU entitled Electrical degradation and lifetime reserve estimation of polymeric cables insulations is a postPhD project, for young PhD having max.35 years old, financially supported by CNCSIS UEFISCSU.</p> <ol style="list-style-type: none"> 1. Realization of minicables samples. 2. Measurements of 24ic el24 samples. 3. Water trees development. 4. Measurements of treed samples. 5. Realization of the computation model. 6. Realization of the ageing state estimation and remaining lifetime.
30	<p>The main objective of this project is to use the Laser-Induced Forward Transfer (LIFT) process as a high resolution printing technique for organic and inorganic material. It has been successfully applied so far in laboratory-scale trials for the deposition of various materials (organic, inorganic, polymers, biomaterials, ...) and the 24ic el24ist24 of devices such as OLEDs or TFTs. This process can print millions pixels per second and doesn't require any post-annealing. The ability of printing such a diverse range of materials with a unique process opens up new perspectives for increasing the performances of devices.</p> <p>e-LIFT integrates expertises in laser physics, chemistry and microelectronics from academics, integrators and product manufacturers from industry in order to validate this printing technology, define its capabilities and its limits, and finally to ensure its successful transfer towards real-world applications in manufacturing. Some specific applications will be addressed and that will lead to the 24ic el24ist24 and 24ic el24ist24ation of components like TFTs, OLEDs, sensors, energy harvesters, and the laser printing of the most promising of these composites onto RFID tags. This scientific effort will pave the way to the definition of the laser printing prototype together with reliability and productivity considerations.</p>
31	<p>http://uefiscdi.gov.ro/userfiles/file/PARTENERIATE/Competite_2011/REZULTATE%20FINALE/TIP%202/T2%20-%20D8.pdf</p>
32	<p>There is a high need for gas microsensors in many areas of the industry. Some applications request sensors that can operate in high temperature and chemically reactive environments.</p> <p>The objective of our project is to develop a silicon carbide (SiC) MOS capacitor sensor which can detect environmental toxic and flammable gases. This type of sensor is well suited for such application because it has high selectivity and sensitivity, fast response, short recovery time and low power consumption. The use of silicon carbide is a key feature that allows the sensor to function at high temperatures.</p>

	<p>Several innovative material and structures will be developed that will increase the performances of the present SiC MOS capacitor sensors. Every structure will be highly sensitive to a certain type of gas. Structures with different characteristics will be integrated in an array in order to increase the range of gases that can be detected precisely. A drive circuit will be developed. Its purpose is to measure the output of the gas sensor and transmit it to a PC. On the PC a custom software application will be developed. This application receives the measured values from the drive circuit and analyzes them in order to determine the concentration and type of the detected gas. The sensors and drive circuit will first be designed and simulated. Then the SiC MOS structures will be characterized using a semiconductor characterization system and a controlled environment chamber. C-V characteristics will be plotted for all the structures in different gas mixtures environments. Then, the sensors and the drive circuits will be fabricated and the custom software application will be developed. The prototype will be tested in the controlled environment chamber and in real applications and the necessary adjustment will be performed.</p> <p>Stage I: Theoretical& conceptual models of environmental toxic and flammable gas detector based on silicon carbide MOS sensor array; Identify sources of toxic and flammable gas emissions from building materials industry; Studies of technological process for fabrication of the MOSiC gas sensors; Studies and preliminary experimentations of thin film technological compatible with SiC substrate. (07-12. 2012)</p> <p>Stage II: Industrial research: Design and simulation of different SiC MOS sensor structures; Experiments for solubility of the interest gases in different metal electrodes; Experiments for the optimal technological parameters for oxide layer ; Experiments for fabrication M/O/on SiC substrate; Designing experimental model; Designing masks, Designing the equipment for testing the gases detector; Design of subassemblies. (01-12. 2013)</p> <p>Stage III: Industrial research: Elaboration of the experimental model; Fabrication of masks batch; Advanced simulation of functional model; Subassembly of gas sensors testing equipment elaboration; Making the equipment for testing gas sensors in a controlled environment chamber from low to high concentrations; Optimizing the structure and the technological process; Designing a novel fully electrically isolated package for high temperature sensors; (01-12. 2014)</p> <p>Stage IV: Industrial research: Experiments of detector; Utility& functionality of model demonstrate; Design and implementation of the sensor drive circuit, connection between the circuit, computer and the sensor array; development of the custom software application; Characterization, testing and calibration of the entire assembly; Demonstration of functionality and reliability of the SiC MOS detectors in the real conditions from industrial plants. (01-07. 2015).</p>
33	http://www.umfiasi.ro/Cercetare/Granturi/Lists/Granturi/DispForm.aspx?ID=94
34	http://star.rosa.ro/downloads/ListaProiecteCDI_PropuseFinantare_C1_2012_STAR.pdf
35	http://star.rosa.ro/downloads/ListaProiecteCDI_PropuseFinantare_C1_2012_STAR.pdf
36	http://www.cndi.ro/wp-content/uploads/2012/06/T2-D8.pdf
37-38	LIPSA INFORMATII
39.	<p>The project develops innovative monitoring services for critical infrastructure stability, slopes and seismic movements. For this, the experts will merge the latest technologies and knowledge in the field, such as spaceborne Synthetic Aperture Radar (SAR), with original approaches and research that will enhance present space and Earth based techniques.</p> <p>The operational specialized services to be developed within the project are:</p> <ul style="list-style-type: none"> - Critical Infrastructure Monitoring Service (CIMS) - case study: Cernavoda Nuclear Power Plant (Romania); - Slope Instability Monitoring Service (SIMS) - case study: the adjacent versants of the nuclear plant; - Seismic Movement Monitoring Service (SMMS) will be developed by integrating data corresponding both to the Cernavoda region and the city of Bucharest (Romania), well-known as one of the capitals with the highest seismic risk in the world. <p>The project proposes an interdisciplinary approach, where SAR data and processing techniques will be integrated into the current Nuclear Power Plant monitoring system and into the seismological knowledge. The ultimate envisaged goal is to improve the input to existing structural stability and seismic models and increase their efficiency.</p> <p>The main task of ASRC team within the project is to develop new GMES Downstream services demonstrated and validated for the project sites, with application to other similar sites (urban areas, other infrastructure elements, etc.).</p>
40.-42	LIPSA INFORMATII
43.	<p>There is a high need for gas microsensors in many areas of the industry. Some applications request sensors that can operate in high temperature and chemically reactive environments.</p> <p>The objective of our project is to develop a silicon carbide (SiC) MOS capacitor sensor which can detect environmental toxic and flammable gases. This type of sensor is well suited</p>

	<p>for such application because it has high selectivity and sensitivity, fast response, short recovery time and low power consumption. The use of silicon carbide is a key feature that allows the sensor to function at high temperatures.</p> <p>Several innovative material and structures will be developed that will increase the performances of the present SiC MOS capacitor sensors. Every structure will be highly sensitive to a certain type of gas. Structures with different characteristics will be integrated in an array in order to increase the range of gases that can be detected precisely. A drive circuit will be developed. Its purpose is to measure the output of the gas sensor and transmit it to a PC. On the PC a custom software application will be developed. This application receives the measured values from the drive circuit and analyzes them in order to determine the concentration and type of the detected gas.</p> <p>The sensors and drive circuit will first be designed and simulated. Then the SiC MOS structures will be characterized using a semiconductor characterization system and a controlled environment chamber. C-V characteristics will be plotted for all the structures in different gas mixtures environments. Then, the sensors and the drive circuits will be fabricated and the custom software application will be developed. The prototype will be tested in the controlled environment chamber and in real applications and the necessary adjustment will be performed.</p>
44.-47	LIPSA INFORMATII
48.	<p>An educational software application for teaching students on satellite meteorology was developed within the project. Interactive Meteosat (IM) represents a case study in the ESA EO educational website for secondary schools, Eduspace.</p> <p>ASRC's task was to prepare IM as a web-based interactive application user friendly for students and teachers across Europe, built entirely with standard compliant free and open source software applications, such as OpenLayers, GeoServer and GDAL.</p> <p>The application allows users: to observe and to record meteorological observations, to upload them onto Eduspace, to compare them with what they see on the Meteosat satellite imagery and with other observations submitted throughout Europe.</p> <p>The main functionalities of the application are:</p> <ul style="list-style-type: none"> - displaying imagery from Meteosat weather satellite using a Map Viewer and a Geostationary Viewer;- zooming;- panning;- introducing quantitative geotagged data (current conditions, wind direction, wind speed, cloud cover, elevation and temperature)- displaying GLOBE data.
49	<p>The system is built from RoKEO and RoSSE servers. It is considered as a connection point between the EO knowledge users, data suppliers and services providers offering them a real time interaction possibility. Services providers can upload their products to RoSSE servers offering a constant access to the services for the registered users. The RoKEO and RoSSE main objective is to provide the opportunity for connecting different services from different suppliers from the Romanian Portal for Earth Observation, in order to extend the already on the market products and services. capabilities</p>
50.-53	LIPSA INFORMATII
54.	<p>Galileo-GNSS represented a major project, which proposed significant objectives, such as: highlight of economical areas which will benefit from European system Galileo, evaluate the conditions which must be accomplished by Romanian economy so that the system become operative on the whole Romanian territory, proposal for technical projects which prepares the achievement of conditions for Romania's adhering to the Galileo project, identify the areas in which Romania can participate with the own industry to the development of Galileo project, defining some major applications which economically stimulate the interest of industry for using the GPS-Galileo technology.</p> <p>The project's stages:</p> <p>Stage 1: Definition of basic strategic directions for Romania's participation to the GALILEO programme;</p> <p>Stage 2: Study about the technical and economical conditions for Romania joining to GNSS-GALILEO programme;</p> <p>Stage 3: Definition of the Pilot Center for GALILEO Applications (ANSAT) - implementation stages;</p> <p>Stage 4: Definition of the pilot applications;</p> <p>Stage 5: Database development in the way of interoperability between the GALILEO system and the NAVSTAR and GLONASS systems;</p> <p>Stage 6: Study and experiments about the interoperability between the GALILEO system and the two existing functional systems;</p> <p>Stage 7: Performing pilot applications and training programmes for using of the GPS technology;</p> <p>Stage 8: Finishing of pilot applications;</p> <p>Stage 9: Elaboration of Romania's strategy for joining GALILEO programme and its means of implementation for the years 2005 – 2015;</p> <p>Stage 10: Final report.</p>

55.	<p>The project presumes conceiving and realization of a protected ventilation system against terrorist chemical attacks (ex: nerve agents) or biological ones (viruses, bacteria) for strategical national interest buildings. The system will also assure the supply of the building with a high quality air, filtrated, purified and deodorized and will optimize the energy consumption of airing.</p> <p>The project puts in value and uses the latest gas detection technologies and real time decontamination by accomplishing: microcontroller gas detectors, automatic decontamination blocks, purifying blocks, automatic stop blocks etc.</p> <p>By using phenomenological and numerical advanced models, there will be made simulations of all the attack possibilities with highly toxic substances and biological agents. This is how can be identified the optimal solutions of placing the detector networks, decontamination blocks and safety stops.</p>
56.	LIPSA INFORMATII
57.	<p>The proposed project addresses Air Pollution Dispersion in Urban Areas, currently a major health and safety issue in European Union with a very high priority policy both in the Cypriot and Romanian Governments. Both countries are urgently required to comply with increasingly restrictive EU Air Quality Laws (eg. EU/234t/243t) while knowledge and research infrastructure in the associated field are only now being initiated in both countries.</p> <p>In particular, the proposed project aims to achieve harmonization of urban wind and pollution dispersion. The idea is to examine the applicability of results derived from Northern-Europe under the South and Central perspective. It should be noted that harmonization of micrometeorological results and models is a high priority research area in EU as also revealed by the major EU COST 732 project in which the Cypriot co-director is involved.</p> <p>In Romania, at INCAS there have been performed theoretical research on numerical models as well as experimental research in wind tunnels on physical models. The complexity of numerical modelling will allow the use of INCAS's facilities for studying a great amount of more or less complex phenomena which occurs at real scale. This research was conducted in order to achieve a better understanding and knowledge of flow in the atmospheric boundary layer and it's interaction with the polluted areas, of the phenomena of dispersion and it's mechanisms, of complex modelling techniques and to improve specialized aerodynamic wind tunnels and mathematical modelling in order to obtain a high level of generality programs.</p> <p>All over the world, there are similar programs that use mathematical and physical modelling, both methods involving great amounts of both human and material resources. Among the wind engineering laboratories is worth mentioning the Fluid Dynamics and Diffusion Laboratory Colorado, State University, Fort Collins, Colorado, from USA (J.E. Cermak) and wind engineering laboratory from France that is equipped with a CSTR chambre (J. Gandemer). The studies that these labs have developed are based on mathematical models and very complex experimental research in wind tunnels.</p> <p>The project concentrates on basic knowledge development of such complex phenomena, both on flows inside atmospheric boundary layers and on dispersion and diffusion mechanisms of pollutants in atmosphere, improvement of physical numerical modelling tools in experimental facilities. At the same time is based on software implementation for numerical models in pollutant dispersion phenomena.</p> <p>The field site concerns the UCY new university campus. UCY hosts an air pollution monitoring site that monitors both data of air pollutants and wind meteorology. These wind data are going to be analyzed through numerical models, high performance computing infrastructure and complex experimental activities in wind tunnel.</p>
58.	<p>În perspectiva dezvoltării durabile, respectiv asigurarea pe termen lung a unor condiții optime de muncă și viață sănătoasă, problematica combaterii coroziunii și a depunerilor de crustă în sistemele termice prezintă o importanță deosebită. Datorită coroziunii oțelului în contact cu agentul termic -apa- din instalațiile termice, durabilitatea și siguranța în funcționare a echipamentelor este limitată. În urma depunerilor de crustă, datorită rezistenței termice ridicate a crustei, scade substanțial atât randamentul energetic al instalațiilor termice (cazane, boilere etc.), cât și siguranța în exploatare a acestora (se pot produce supraîncălziri locale ale peretelui, iar la fisurarea crustei crește brusc temperatura agentului termic și implicit presiunea din instalație, ceea ce poate produce avarierea sau explozia instalației).</p> <p>În instalațiile industriale, care de obicei funcționează în circuit închis (recircularea agentului termic) problematica se rezolvă tradițional prin tratarea corespunzătoare a apei din instalație (consacrat cu fosfat de sodiu) și adăos de inhibitori de coroziune sintetici, cu impact negativ asupra sănătății și asupra mediului. Relativ recent (1993-1996), în cadrul proiectului JOU 2-CT92-0108, pentru sistemele geotermale, care prin specificul lor (sălinitate ridicată – în special saruri alcaline și alcalino-pământoase Ca și Mg, conținut de CO₂, H₂S etc.) prezintă risc de coroziune și de crustă ridicate, au fost dezvoltate produse sintetice: - polielectroliti saruri de trietaolamina, - polielectroliti maleici, copolimeri ai acidului maleic cu amine aromatice, - copolimeri alcoolici ai pipiridinei - care prezintă efect dublu de inhibitor ICC, respectiv inhibă atât procesul de coroziune, cât și formarea crustelor. Atât sinteza cât și utilizarea acestor produse au impact negativ asupra mediului.</p> <p>În cadrul proiectului, se propune realizarea, caracterizarea fizico-chimică și structurală, experimentarea (determinarea atât a eficienței anticorozive, cât și de inhibare a formării de crustă) a unui nou produs ICC pe baza de extracte de plante din flora autohtonă. Se propune realizare / caracterizare, atât la nivel „model experimental”, cât și la nivel „prototip”. De asemenea, se propune determinarea stabilității produsului ICC prototip, în vederea stabilirii duratei maxime de stocare („termen de garanție”). Deci, proiectul se finalizează printr-un produs nou ICC - prototip certificat, cu referențialul definitivat (specificație tehnică) și foaia de catalog aferente. De asemenea, se propune realizarea unui studiu de strictă</p>

	<p>specialitate (biologie), respectiv Studiul conditiilor pedoclimatice din România, optime dezvoltarii plantelor ale caror extracte prezinta efect ICC, precum si al impactului asupra mediului a utilizarii industriale a acestor plante.</p> <p>Prin realizarea noului produs ICC (pe piata mondiala, deocamdata nu exista produs ICC din extras de plante) si utilizarea lui în sistemele termice industriale – dar fiind naturale, netoxice, si în sistemele termice casnice deschise (apa calda menajera), – se contribuie atât la conservarea mediului (prevenirea de acumulari de produse chimice sintetice), cât mai ales la protejarea instalatiilor termice, respectiv cresterea duratei si sigurantei în exploatare. Pâna în prezent, departamentul de productie al ICCF Bucuresti a manifestat interesul pentru punerea în fabricatie si comercializarea noului ICC.</p>
59.	LIPSA INFORMATII
60.	Objective is to determine the effect of microgravity and cosmic radiation on the growth and survival of coloured fungi species. The proposal "Growth and survival of coloured fungi in space" is based on experiments both on the Earth and in Space inside of microcapsules made by experts from Romanian ISS. The fungal species choose for experiments belong to 6 genera selected as organic material decomposers, possible contaminants of materials destined for interplanetary travel, aggressive biodeteriogens of artworks and wooden buildings . Those, containing melanin are protected against UV rays.
61.	KM3NeT, an European deep-sea research infrastructure, will host a neutrino telescope with a volume of several cubic kilometres at the bottom of the Mediterranean Sea that will open a new window on the Universe. The telescope will search for neutrinos from distant astrophysical sources like gamma ray bursters, supernovae or colliding stars and will be a powerful tool in the search for dark matter in the Universe. An array of thousands of optical sensors will detect the faint light in the deep sea from charged particles originating from collisions of the neutrinos and the Earth. The facility will also house instrumentation from Earth and marine sciences for long term and on-line monitoring of the deep sea environment and the sea bottom at depth of several kilometers.
62.	<p>The ANTARES Collaboration is constructing a large area water Cherenkov detector in the deep Mediterranean Sea, optimised for the detection of muons from high-energy astrophysical neutrinos. The observation of high energy neutrinos will open a new window on the universe. The primary aim of the experiment is to use neutrinos as a tool to study particle acceleration mechanisms in energetic astrophysical objects such as active galactic nuclei and gamma-ray bursts, which may also shed light on the origin of ultra-high-energy cosmic rays. At somewhat lower energies, non-baryonic dark matter (WIMPs) may be detected through the neutrinos produced when gravitationally captured WIMPs annihilate in the cores of the Earth and the Sun, and neutrino oscillations can be measured by studying distortions in the energy spectrum of upward-going atmospheric neutrinos.</p> <p>ANTARES is constructing and deploying a detector with a surface area of 0.1 km², a first step toward a kilometric scale detector.</p> <p>ou can choose one of these links, or start from the first link and browse page per page. Explanations about the images can be obtained when the mouse pointer is over it.</p>
63.	The "Portable Telemedicine Workstation Definition and Specification-PTW" is in process to be implemented with Romanian official body for emergency situations and its potential users are:- Public and private health-care system;- Critical medicine, trauma and emergency medical units;- Police, fire-defense, civil guard, border police, military. The PTW helps for:- Public health-care system covering remote, infrastructure-less, unprivileged areas;- Management of natural and industrial disasters, providing healthcare support;- Hazardous situations connected to human security, border security, conflict; critical medicine, trauma and emergency situations in pre-clinic phase.
64.	<p>With the ongoing climate change, the pressure on nature biodiversity and our own living conditions increases steadily. To mitigate these threats by effective adaptation strategies and counter measures a frequent and area-wide monitoring of the environment is crucial to provide decision makers with accurate, up-to-date and reliable information on the changing conditions of our natural resources.</p> <p>Within the GMES initiative (Global Monitoring for Environment and Security) the Land Services provide cross-border harmonised geo-information at global to local scales in a time- and cost-effective manner. These monitoring services have been defined, developed and implemented within a series of projects funded by the European Commission (geoland, BOSS4GMES) and the European Space Agency (GSE Land, GSE Forest Monitoring).</p> <p>Building upon their results, geoland2 aims to organise a qualified production network, to build, validate and demonstrate operational processing lines and to set-up a user driven product quality assurance process.</p> <p>The architecture of geoland2 is made up of two layers: The Core Mapping Services provide land cover, land use and land cover change, as well as a range of bio-physical parameters as an input to more elaborated products while the Core Information Services offer specific information for European Environmental Policies and international treaties on Climate Change, food security and the sustainable development of Africa.</p>
65.	<p>Every year, fires, floods, earthquakes and volcanic eruptions, landslides and other humanitarian crises claim the lives of thousands of citizens in Europe and around the world. With climate change, the frequency or intensity of such events may even increase.</p> <p>In the frame of the GMES Program (Global Monitoring for Environment and Security), the GMES Emergency Response Service reinforces the European capacity to respond to emergency situations: It provides a reactive cartographic service to the registered users involved in the management of humanitarian crisis, natural disasters and man-made emergency situations with timely and high quality products derived from Space Observation.</p>

	<p>The GMES Emergency Response Service is based on two pillars: The Emergency Response Service: The first priority is the delivery of Emergency Response products, available in rush mode, to European Civil protections and Humanitarian actors. These Emergency Response Service is on the forefront of the GMES service and therefore its most visible part. The Emergency Support Service: Sustaining and completing this service, the Emergency Support service provides reference products and situation maps. These geo-information products are specifically dedicated to the preparedness and recovery phases of the crisis.</p>
66	<p>Inclusion of all Balkan countries into GEO and their contribution to GEOSS is of great importance, since only a comprehensive EO framework can lead to better understanding and more intelligent utilization of the environmental resources, increased quality of life and faster economic development. The importance and benefits from participation in global EO initiatives have already been recognized by several Balkan countries. However, a great number of Balkan countries are still not members of GEO.</p> <p>This project aims to identify existing EO-data providers and users in the wider Balkan region, to determine their status, potentials and needs, and to coordinate EO players by establishing proper interfaces and networking between them. A broad analysis of gaps and complementarities of EO activities within the region will be performed, with the emphasis on user needs in the specific context of the Balkan region. The consortium has been carefully constituted to include key players both from EO-data provider and EO-data user communities, from all Balkan countries. Participants from other EU countries are also included to allow straightforward identification of mechanisms for leveraging, developing and coordinating EO capacity building initiatives in the region, and to ensure that the Project outcomes will be in line with the currently designed Shared Environmental Information System and with Infrastructure for Spatial Information in Europe.</p> <p>Main outcomes of the Project will be the creation of a permanent web-based networking facility, and the design of roadmaps and recommendations for an active, coordinated and sustained participation of all Balkan countries in global EO initiatives. These outcomes will also present a contribution to GEO task CB-09-03 „Building Institutional Capacity to Use EO” and specifically to subtask CB-09-03b „Establishing Regional Capacity Building Networks”.</p>
67 .	<p>Scopul fundamental al proiectului este diminuarea ratei de esec a operatiilor de reconstructie vasculara periferica prin identificarea unor solutii de control pasiv al curgerii in configuratii complexe de tip bypass. Datele statistice arata ca aproximativ o treime din interventiile chirurgicale de tip bypass esueaza in aproximativ 24 de luni. Gasirea unor solutii pentru cresterea duratei de permeabilitate a bypassului, prin controlul al curgerii, are efecte sociale extrem de favorabile asupra vietii si activitatii pacientilor. Proiectul va realiza un sistem integrat format din: modele matematice ale curgerilor nestationare ale fluidelor ne-Newtoniene in incinte cu pereti elastici, pachete software si standuri experimentale pentru analiza si controlul curgerilor in sisteme biologice. Obiective specifice. 1. Proiectarea si realizarea unui simulator vascular: Constructia unui stand experimental care sa permita obtinerea in vitro a unor curgeri pulsatorii, similare celor care au loc, in vivo, printr-un bypass de artera femurala. Acest stand experimental ar fi primul de acest tip si complexitate construit in tara noastra. 2. Investigatii experimentale (in vitro) ale curgerii pulsatorii prin bypassuri utilizind tehnica PIV: Determinarea cu precizie ridicata a marimii instantanee si a distributiei spatiale a vectorilor viteza ai curgerii prin bypass. Se va realiza pentru prima data in tara, cartografierea prin PIV a cimpului de viteze intr-un bypass de artera femurala. 3. Reconstructia 3D din informatii CT: Algoritmi si programe de calcul pentru reconstructia tridimensionala bazata pe CT; modele virtuale realiste de bypass. 4. Simularea numerica a curgerii sangelui prin artere cu stenoza si configuratii tip bypass: a) intelegerea mecanismelor fizice din arterele cu stenoze si bypass si optimizarea acestora si b) realizarea si testarea unui program de calcul pentru simularea curgerii in astfel de configuratii, cu modele constitutive ne-Newtoniene. c) analiza instabilitatilor curgerii pulsatorii, d) optimizarea geometriei bypass-ului. 5. Investigatii medicale si monitorizarea solutiilor de bypass: Identificarea zonelor vulnerabile conform predictiilor modelelor numerice si experimentale si stabilirea pozitiiilor lor in geometria reconstructiei. Evaluarea fezabilitatii chirurgicale a solutiilor tehnice propuse de ingineri pe baza celor doua modele. Dezvoltarea si consolidarea unei gandiri/perspective hemodinamice a chirurgilor vasculari in abordarea unui bypass.</p>
68.	<p>Se propune un sistem integrat de conversie a datelor de cinematica a locomotiei umane, in timp real, prin calcule de dinamica inversa, in informatii de dinamica segmentara. Se creeaza un instrument de: caracterizare individuala a eficientei miscarilor, antrenament complementar asistat, in activitati in conditii de limita. Sistemul va fi utilizat la: antrenamentul cosmonautilor/pilotilor, contramasuri in conditii de microgravitatie sau recuperarea individualizata a persoanelor cu deficiente locomotorii de cauze diverse, antrenarea eficienta a personalului pentru misiuni speciale si a sportivilor</p>
69.	<p>Seceta este unul din dezastrele naturale majore care cauzeaza pagube importante vegetatiei naturale, agriculturii si societatii. Romania este una dintre tarile cele mai vulnerabile si cele mai afectate de seceta. In 2000, 2003 si 2007 seceta a afectat in Romania productia agricola, rezervele de apa si sanatatea populatiei. In cadrul proiectului va fi elaborat un sistem integrat de prognoza, avertizare timpurie si managementul secetei pe teritoriul Romaniei combinand informatii satelitare, date masurate si modelare numerica. Proiectul raspunde obiectivelor PDCD12 de stabilire de parteneriate pentru cercetare si creare de cunostinte pentru a raspunde situatiilor create de dezastrele naturale.</p>
70.A	<p>Scop (i) Aparatura si experimente de bord pentru monitorizarea cantitativa neinvaziva a oboselii neuromusculare a pilotilor pentru experimente pe platforme spatiale; (ii) Cresterea vizibilitatii cercetarii stiintifice romanesti. Proiectul este relevant prin (i) noutate in domeniul analizei si monitorizarii performantei umane in pilotaj in aviatia speciala si in spatiu; (ii) fundamentare pe cercetari de nivel inalt; (iii) aplicativitate in evaluarea performantei umane; (iv) crearea unei baze metodologice si cantitative pentru modelarea computerizata a comportarii umane adaptive in spatiu.</p>
71.S	<p>Sistemul SECRIS va asigura, detectia, clasificarea si identificarea obiectelor subacvatice, inspectia carenelor navelor si a platformelor marine, barajelor, ecluzelor, constructiilor</p>

	<p>portuare, monitorizarea parametrilor mediului marin (natura fundului, salinitate, temperatura etc.), detectia si inspectia conductelor si cablurilor de telecomunicatii subacvatice, suport in operatiunile de foraj marin prin inspectii vizuale si monitorizarea lor si in constructia unor structuri submerse si observatii asupra stratului de sedimente de pe fundul apei si asupra florei si faunei marine. Subsistemele si echipamentele din compunerea sistemului vor asigura operarea independenta a acestuia. Sistemul va fi compus din vehicul subacvatic dotat cu senzori sonar, video etc., subsistem de lansare/recuperare a vehiculului subacvatic, consola; de operare dotata; cu software aplicativ. Sistemul are portabilitatea necesara; dispunerii la bordul unei ambarcatiuni ce va asigura transportul in zona maritima cercetata si conditii pentru utilizarea in cercetarea mediului marin, precum si conditii de lucru pentru personal.</p>
72.	<p>Proiectul propune dezvoltarea unui sistem pilot de telemedicina prin realizarea unui sistem informatic de monitorizarea parametrilor vitali, diagnosticarea, localizarea, salvarea persoanei aflata in situatii de criza (soldati, salvatori, exploratori, persoane din zone izolate, calamitate,etc) si dezvoltarea unei retele inteligente mixte, de comunicatie a datelor, informatiilor si voce. Sistemul va avea o structura modulara, alcatuita din sistem de achizitie, monitorizare si comunicare individual, sistem central de supraveghere, alertare si comanda, sistem mobil de interventie si aplicatii soft.</p>
73	<p>The project intends to develop an ensemble of software modules, integrated in a single platform, suitable for oil products based pollution risk management through processes of identification, analysis, monitoring/systematic reporting of soil and groundwater pollution risk factors, through execution of plans to reduce pollution by means of involvement of some innovative <i>in-situ</i> technologies based on electrokinetic bioremediation associated with their efficiency evaluation during the entire life cycle of the project.</p> <p>Software implementation will use modalities that are similar to those met in the specific reference European methodology, integrating the application of geographical information systems (GIS) through specialized modules and the involvement of imagistic controlling that will provide significant information on the health state of a specific area towards an interested authority and will contribute to take strategical and tactical decisions in order to prevent and to act by means of planning, budgeting and monitoring of the economical/social performance. The obtained values of the indicators of soil and groundwater oil pollution will be represented at territorial scale, so that digital maps will be obtained; on their basis critical areas will be evidenced in the case of pollution and the information maintenance/updating will be kept in a spatial database, a history of these interest values being able to be built.</p> <p>Innovative accelerated <i>in-situ</i> remediation technologies will be provided to decontaminate (based on bacterial inoculus and electrokinetic dispersion) soil and groundwater. Through integration of the information provided by software tools and remediation technologies, elaboration of an assesment methodology of cost-profit ratio and risk are in view, that are significant for interested stakeholders (scientific, industrial, public/administrative ones) to build a definition framework for a best practice in the field.</p> <p>The present project thus deals with the following general objectives:</p> <ul style="list-style-type: none"> • building the structure of relational, standardized databases, in order to store information characteristic to soil pollution risk analysis and its remediation; • improvement of the risk pollution assessment methodology for Romania and its informatical implementation; • development of software platform for evaluation and pollution risk management, based on GIS technologies, that leads to the achievement of the following measurable objectives correlated with the project Work Plan: <ul style="list-style-type: none"> • relational, standardized, databases structures compatible with GIS format; • research reports regarding the improvements added to pollution risk assessment methodology; • hazard-vulnerability-risk software modules based on the improved pollution risk assessment methodology; • a functional pollution risk assessment software platform. <p>Due to the complexity of the analysis, the deep approach of each distinct component is necessary, so that it is to be able to optimally contribute within the entire ensemble towards application of a hazard-vulnerability-risk assessment methodology at the impact level of soil and groundwater pollution for the specific pilot area selected for the analysis.</p>
74	<p>The main objective of this proposal is related to the creation of nano-electronic devices based on new materials with advanced functionalities, corresponding to the next generation of devices under research and development by the electronic industry. This objectiv may be fulfilled due to the complementarity in the research expertise of the partners in the proposal.</p> <p>The tasks to perform in order to achieve the main objective are related to the stages outlined in the Working Plan of the proposal, as follows :</p> <p>1-st Stage: Build-up of the models-routes-methodology for the deposition and characterization of ultrathin oxidic films.</p> <p>2-nd Stage: Deposition of ultrathin oxidic films and characterization of their properties.</p> <p>3-rd Stage: Modelling/simulation of the materials and device test structures.</p> <p>4-th Stage: Achieving the first nano-demonstrators.</p> <p>In the 1-st Stage, the specific task is to establish the general theoretical and experimental models of the materials, based on models in solid state physics and quantum physics. The</p>

	<p>task will be carried out by modelling/simulation using specialized software packages; the techniques used will lead to the development of new models of the material of interest in the proposal.</p> <p>In the 2-nd Stage, the specific task is to obtain thin films with the physical and chemical properties as required by the application device; extensive measurements of the properties of the materials will be performed. The activities to be carried out for the fulfilment of this task are experimental in nature and involve the development of various technologies for the films deposition. High resolution techniques will be used in the characterization of the material properties.</p> <p>In the 3-rd Stage, the specific task consists in the correlated study of material properties and deposition processes; physical models of the material properties will be developed based on the experimental results. The activities of this task are activities implying the analysis and processing of experimental data, as well as correcting actions for the improvement of the material properties.</p> <p>In the 4-th Stage the specific task consists in the execution of the demonstrators. The resulting activities are complex technological activities and activities for the device characterization from the point of view of the technological execution and from the point of view of device functional performance.</p>
75	<p>Deformable model theory is a branch of forefront scientific, multidisciplinary, which appeared and developed in the last two decades, fueled by practical problems in medicine, computerized image processing and physics. Notions deformable surface deflection curve, broadly called snakes, were introduced in 1987 and 1988 by D.Terzopoulos, M.Kaas and A.Witkin, knowing the explosive growth of 2D and 3D anisotropic model (Terzopoulos, Cohen), through adaptive 2D and 3D face models, generically called g-snakes (Rougons-Preteux) to multiscale segmentation models (Sochen, Bresson etc.). Computer applications in medical imaging have seen, in turn, rapid development and proliferation, while gaining sophistication and precision, just remember using finite element method in the study of cylindrical or spherical surfaces related to segmentation of anatomical structures. The proposed project aims to study rigorous mathematical point of view, the energy associated with a functional-deformable surfaces and development of mathematical algorithms to determine the minimum performing this function. The theoretical results obtained are used to study the behavior of the abdominal wall undergo surgery. The project aims to achieve, in a software environment developed in the context of partnership, using Visual C++ in rural Visual DotNet, a model tridimensional the wall abdomen to simulate its movement under conditions of normal in patients with hernia post-operative and after surgery protetica.Vor be implemented in the same environment software and other means of assistance modeling procedures anatomical structures such as the case of orthodontic prosthetics, and a core expert to assist decision-surgical and other therapies intervention</p>
76	<p>The project proposes to obtain photonic structures based on chalcogenide materials: containing chalcogenide materials: sulfur, selenium, tellurium in combination with other elements. Will be prepared in the first stage massive chalcogenide glasses based on chalcogenide combinations with arsenic, antimony, tin and germanium. Bottles will be prepared by the method of cooling the melt mixture components. These bottles will serve as targets for thin film deposition by means of evaporation / spray supports optical glass and / or silicon. Will be investigated structural and optical properties of glasses so large and thin layers.</p> <p>Will produce photonic structures (photonic crystals) by depositing alternating layers of chalcogenide. Each deposited layer will radiate with UV radiation of a laser to create a network of parallel lines (diffraction grating) layer. Impress layer and creating lines will be based on the phenomenon of transformation fotostructurala chalcogenide material. Next layer will be similarly impressed with the light, but the orientation line network will be built at an angle of 90 degrees from the previous layer. In this way the packaging successive layers with different orientation of the network to obtain a printed photonic structure hidden. This structure will be-developed by chemical attack in the presence of weak bases. Unexposed portions are dissolved (negative photoresist effect). Remaining complex structure is a photonic crystal structure type, in reality a photonic amorphous.</p> <p>3D photonic structures will be investigated in terms of quality optical and optical width intervals prohibited. Photonic structures will enable the execution of applications in the near infrared gap's getting controlled spontaneous emission amplifiers, luminescent emitters, lasers, photovoltaic devices, splitters and multiplexers in optoelectronic circuits.</p>
77	<p>Main objectives:</p> <ol style="list-style-type: none"> 1. Elaboration of a reproducible technique for obtaining the 2D nanostructured carbon material by radiofrequency plasma jet. Defining of working parameters space, the range of values which lead to the synthesis of 2D nanostructured material; 2. Elaboration of the growth mechanism which would allow the optimization of the growing process; 3. Obtaining of carbon materials with high concentration of CNW (2D nanostructured carbon); 4. The assessment of potential applications of 2D carbon nanostructures, pointing toward the field emission properties.
78	<p>The goal of the project is to obtain and characterize magnetic materials in the form of wires micron, which by incorporating them into securities, they can be notified by electronic detection devices, which allow validation of these securities. Objective is to achieve intelligent materials in the form of stamps with micron embedded wires used in electronic detection validation. The project will address several scientific and technical issues such as technological possibilities trial preparation micron wire, metal special magnetic properties, complex characterization microwires and systems which include the design and modeling of magnetic materials, manufacturing and test experimental models demonstrating experimental model functionality and results dissemination.</p>
79	<p>Project main goal:</p> <p>We aim to design and prototype manufacture a new dual-energy X-ray Radioscopy and Tomography system dedicated for the use within antitero interventions for the fast</p>

	<p>identification of the content of the suspect luggage and packages. More than any of the already existing systems from the market, that offers only images of the overlapped objects projections from luggage with coloured map of organic materials (a very vague class of materials which could equally be: water, soap, chocolate or C4, Semtex, etc), we hereby want to implement the following features:</p> <ul style="list-style-type: none"> • Radioscopic images of luggage content represented in values of Atomic effective Number and computing the luggage weight; • 2D tomograms or cross-sections of scanned luggage with representations in Atomic effective Number and Density values, without any inside objects superimposing; • Measurement and identification of the dangerous substances by dual-energy X-rays Radioscopy and Tomography, through high-accuracy measurements of Atomic effective Number and Density values and comparison with values from a database. <p>The general and specific objectives of the project are the followings:</p> <ul style="list-style-type: none"> • Design, optimization and development of an autonomous mobile X-Ray system destined for increasing the antitero interventions efficiency by fast and accurate identification of the explosives from the suspect baggage and packages; • Design and development of a application-dedicated autonomous 2D detector based on fast translation of an X-ray linear array detector. • Design and development of a dedicated mechanical assembly for scanning geometries optimization in order to reach a very short time of intervention; • X-ray dual-energy technology improvement within the mobile radioscopy and tomography • Modeling and optimization of the function relating the Zeff and Density values with two energies radiation attenuation coefficients; • Modeling and development of high accuracy system calibration method; • Doing tests and experiments for improving the system performance; • Presentation of the system within conferences, demonstrations for the possible beneficiaries, performance presentation and promotion; • Presentation of some results in scientific papers.
80	<p>The project aims to contribute to theoretical and experimental substantiation of a rapid detoxification process human blood when treating stroke victims exposed to radiological, chemical or bacteriological, patients receiving systemic anticancer agents or those with renal insufficiency. The proposed method falls into the category of nanotechnologies. It is based on the use of functionalized superparamagnetic nanospheres with specific receptors, which are injected intravenously and move freely in the human bloodstream. After a short time, specific toxic species covered in the bloodstream form complex magnetic nano spheres toxins. Subsequently blood is made to circulate outside the body through a catheter implanted venous and arterial or a portable high gradient magnetic separation field. Magnetic toxic complexes are retained by magnetic separation cells and detoxified blood is reintroduced into the human bloodstream. Project objectives include the synthesis and characterization of functionalized magnetic nanospheres specific superficial receptors, bio stabilization of nano sphere to extend their life time in the bloodstream, theoretical analysis, design and implementation of portable extracorporeal cell capture toxic complex magnetic and magnetic-capture process optimization filtration experiments in vitro.</p>
81	<p>The general objective of this project is the realization of an experimental model of tandem (coupled) instrument ion mobility spectrometer (IMS) having a non-radioactive ionization source - quadrupole mass spectrometer (QMS), with which the dangerous substances could be detected and identified. The accomplishment of this general objective will be done by mean of a series of specific objectives mentioned in the paragraphs below.</p> <p>The originality of this proposal relies in the construction in premiere in Romania of this kind of tandem instrument IMS-QMS; this implies solving, using innovative solutions, a couple of complex problems, such as: ensuring the stability of ion beam generated by the non-radioactive ionization source with corona discharge, transfer with a good efficiency of ion current from the IMS analyzer within the QMS spectrometer, and the realization of a special electronic circuit which will ensure detection of both positive and negative ions.</p> <p>The interface that will ensure the ion transfer between the two spectrometers would be the object of a patent proposal.</p> <p>To solve these complex problems of this project, a consortium has been formed, consortium that reunites four prestigious Romanian institutions: two national research institutes and two universities. Moreover, the realization of the proposed objectives will definitely allow the initiation and participation to international scientific collaborations, especially in preparing project proposals in the E.U. FP7.</p> <p>General objective of the project: Realization of an experimental model for a tandem ion mobility spectrometer - quadrupole mass spectrometer, for detection and identification dangerous substances from the chemical warfare agents' category.</p> <p>Specific objectives are:</p> <ul style="list-style-type: none"> - O-1. Analysis of the ionic transport system and vacuum system, for design and construction of the interface and of the non-radioactive ionization source. - O-2. Design of mechanical and electronic components of the ion mobility analyzer. - O-3. Design of mechanical and electronic components of the quadrupole mass analyzer.

	<ul style="list-style-type: none"> - O-4. Construction and testing of the mechanical and electronic components of the tandem IMS-QMS. - O-5. Conception and realization of software products dedicated for controlling the IMS-QMS tandem instrument. - O-6. Elaboration of a methodology for operating the equipment. - O-7. Experimentation and verification, then presentation and demonstration of the functionality for the tandem analyzer of IMS-QMS type, by using simulant substances (chemical compounds having chemical structure very similar with that of CWAs, but much lower toxicity).
82	<p>The proton threshold states are low-energy resonant nuclear states, located at proton breaking threshold; these states could play an essential role in stellar cycle evolution. This project aims to study proton threshold states of astrophysical interest in the ^{27}Si nucleus, emerging from proton capture reaction by the ^{26}Al radioactive nucleus, (Mg Al stellar cycle). The ^{26}Al is an anomalous isotope, evidenced by Spatial Techniques and Cosmochemistry of Meteorites; it was found in large amount in Interstellar Medium of our Galaxy. The burning reaction of ^{26}Al is not known in details; in this respect it is important to investigate ^{27}Si states resulted from low energy proton capture of ^{26}Al (specific energy for non-explosive stellar cycles).</p> <p>The method for studying proton threshold states in ^{27}Si is based on Shell Model for mirror nuclei ($_{13}\text{Al}^{27}$, $_{14}\text{Si}^{27}$) and on Thomas-Ehrman threshold effect. The scope of this study is Spectroscopic Data on Proton Threshold States in ^{27}Si nucleus: energy, spin, parity, spectroscopic factor. These data are then used in reconstruction of capture reaction $^{26}\text{Al}(p,\gamma)^{27}\text{Si}$ cross-section and in calculus of stellar reaction rate. A similar study was recently performed (ISS, IFIN-HH, University Munich) for proton threshold states of ^{23}Mg nucleus (product of proton capture by radioactive nucleus ^{22}Na) for elucidation of some problems of Ne-Na stellar cycle.</p>
83	<p>The project deal with the accomplishment of a <i>smart detector</i> able to identify and quantify <i>toxic gases of neurotoxic and general action class</i> (warfare chemical agents, industrial toxic gases). The detector will be of matrix type, envisaging 3-6 sensors with surface acoustic wave, wich allow in general toxic gas detection at a concentration in air of ppm or under ppm. The detector will have a alarm level an order of magnitude below the warning level of the concentration for the toxic gas which is going to be identified. It is pursued a real time reaction detector or a delay in resposivity of maximum 2-5 seconds. It will be a robust and portable.</p> <p>General objective:</p> <p>Development of a smart sensor, matrix type, with surface acoustic wave, intended for toxic gases detection, neuurotoxic or with general action. The detector will permit toxic gases detection at a level in air of ´ ppm and under ppm, and wil have a alarm threshold minimum lees one order of magnitude less under alarm concentration.</p> <p>specific objectives:</p> <ul style="list-style-type: none"> the study of some ad/absorbent materials, chemical sensitive to the toxic agents, based on the utilization of the nanocompozite materials (with nanoparticles < 10 nm with high surface area); the characterization of the material response and the selection of the optimal ones for the whole range of chemical compounds which are going to be identified and environmental conditions; fabrication of the matrix surface acoustic wave sensor; fabrication of the integrated electronic system for the signals processing; elaboration of the identification and quantification algorithm , which processes the information got from each element of the sensor matrix; development of suitable software; modeling and simulation of the identification and quantization; demonstration of the sensor functionality; publications, scientific communications WEB site , CD; submission of a one or more invention patents (apparatus and methods)
84	<p>The goal of our project is to obtain and characterization of textile composite structures protection systems electromagnetic radiation. The project will address several scientific and technical issues such as technological possibilities of preparing study materials / textile structure composites with electromagnetic shielding properties, characterization of complex components and structures results, design and modeling of protection systems electromagnetic radiation, development and testing of experimental models, demonstrating the functionality of the experimental model and dissemination of results.</p>
85	<p>Mobile system detection, identification and biological and chemical monitoring is a detection system capable of performing a wide range of biological agents (including biological agents cultivated in the laboratory) and toxic industrial real-time. Since the average retention using bacteria / virus / bacterial toxins / industrial toxins a suspension of nanoparticles, synthesized controlled and specific activities to retain microorganisms and industrial toxins, this system is different from existing similar systems nationally and internationally, so that method, as well as detection technique and technology.</p> <p>Detection is done in three steps:</p> <ol style="list-style-type: none"> 1.fixare: bacteria / viruses / bacterial toxins / industrial toxins are retained by fixing the nanoparticle surface chemical activity and specific; 2.separare: bacteria / viruses / bacterial toxins / fixed industrial toxins are separated by magnetic discrimination in a specially configured magnetic field;

3.analizare: depending on the degree of discrimination and opto-chemical fingerprint of tryptophan distribution in microorganisms and toxic nature retained, identify the type of bacteria / virus / bacterial toxin / toxic industrial units through an optical scanning and reading specially designed. Worldwide, it is the first system that simultaneously fulfills functions of detection, identification and monitoring of biological and chemical environmental factors, including remote areas, is equipped with high performance hardware and software for remote data transmission, small size, reliable and easily transportable and can detect virtually an unlimited number of biological and chemical agents.

Project No.	Project achievements (publications)
1	http://www.emdpa.eu/index.php?id=48 http://www.emdpa.eu/index.php?id=21&tx_ttnews[tt_news]=46&tx_ttnews[backPid]=1&cHash=862705fe33
2	http://www.3d-demo.org/project/publications/publications.html
3	http://star.rosa.ro/downloads/ListaProiecteCDI_PropuseFinantare_C1_2012_STAR.pdf http://www.icpe-ca.ro/lib/images/pagini/1295094735Raport_stiintific_2009-web.pdf
4	http://www.avert-aero.eu/dissemination/dissemination.htm
5	http://ecavas.rosa.ro/enrezultate.html
6	http://www.imt.ro/nano-hf/
7	http://www.imt.ro/metalaser/e_papers.html
8	http://www.imt.ro/lisoft/parteneri.php
9	http://ssl.inflpr.ro/FEMAT/
10	http://www.infim.ro/~lab190/old_page/Proiecte/Prolaf/web-page_ro/PROLAF_ro_files/slide0001.htm http://www.cnmp.ro:8083/pncdi2/program4/competitie/main/index.php?&we=26531b94a8aa9ff7df5c5d983a506cd6&wf=detail&id=622&wchk=f2d740e4647da2fe220cf8ea7037eb9
11	http://www.vitronanofotosin.lx.ro/ http://www.cnmp.ro:8083/pncdi2/program4/competitie/main/index.php?&we=26531b94a8aa9ff7df5c5d983a506cd6&wf=detail&id=936&wchk=be0591871aa1206d800d0be32eecec28
12	http://www.icsi.ro/pncdi2/21-004/index_eng.html
13	http://www.comoti.ro/en/Proiect_ITACA.htm?pag=3
14	http://www.icpe-ca.ro/ro/feromag21-043
15	http://www.icpe-ca.ro/UserFiles/File/faza%20%20-%20PN%20%20nr.%20222/index.htm
16	http://itim-cj.ro/PNCDI/PN%20II%2021-023%20PARTENERIATE/PUBLICATIONS.htm
17	http://www.itim-cj.ro/~cleostean/ordonanomag/papers.htm
18	http://www.itim-cj.ro/PNCDI/cost-h/PUBLICATIONS.htm
19	http://www.icpe-ca.ro/ro/nanosemoxi
20	http://www.icpe-ca.ro/ro/voltera
21	http://www.pub-rcas.ro/vector%20lansare%20sateliti%20mici%20dimensiuni.html
22	http://www.straero.ro/prj.php?act=ong&etap=sfsar http://www.cnmp.ro:8083/pncdi2/program4/2008/main/index.php?&we=a4e9428fad82837902e19b9a12e1443f&wf=detail&id=66&wchk=bc0d7beda755fe4a70e6a3f5fdf17ebe
23	http://www.comoti.ro/en/Proiect_MANTITU.htm?pag=3
24	http://www.comoti.ro/ro/Proiect_OPATAN.htm?pag=3

25	http://www.comoti.ro/en/Proiect_TESUPAV.htm?pag=3
26	http://www.inflpr.ro/ro/node/1048
27	http://www.straero.ro/prj.php?act=ong&etap=memslicomp
28	http://www.imnr.ro/grazir/results1.html
29	http://www.icpe-ca.ro/lib/files/siteDEDIC/en/diseminare.html
30	http://www.e-lift-project.eu/index.php?page=documents
31	http://uefiscdi.gov.ro/userfiles/file/PARTENERIATE/Competite_2011/REZULTATE%20FINALE/TIP%20T2%20-%20D8.pdf
32	http://www.icpe-ca.ro/en/partnershipsinpriorityareas
33	http://www.umfiasi.ro/Cercetare/Granturi/Lists/Granturi/DispForm.aspx?ID=94
34	http://star.rosa.ro/downloads/ListaProiecteCDI_PropuseFinantare_C1_2012_STAR.pdf
35	http://star.rosa.ro/downloads/ListaProiecteCDI_PropuseFinantare_C1_2012_STAR.pdf
36	http://www.cndi.ro/wp-content/uploads/2012/06/T2-D8.pdf
37	http://uefiscdi.gov.ro/userfiles/file/PARTENERIATE/Competite_2011/REZULTATE%20FINALE/TIP%20T1%20-%20D8.pdf
38	http://uefiscdi.gov.ro/userfiles/file/CAPACITATI/PC7/Lista%20proiecte%20acceptate%20la%20finantare%202011.pdf
39	Lipsa informatii
40	http://www.cndi.ro/wp-content/uploads/2012/06/T2-D8.pdf
41	http://www.cndi.ro/wp-content/uploads/2012/06/T2-D8.pdf
42	http://www.cndi.ro/wp-content/uploads/2012/06/T2-D8.pdf
43	http://www.icpe-ca.ro/en/partnershipsinpriorityareas
44	http://www.cndi.ro/wp-content/uploads/2012/06/T2-D8.pdf
45	http://www.cndi.ro/wp-content/uploads/2012/06/T2-D8.pdf
46	http://www.cndi.ro/wp-content/uploads/2012/06/T2-D8.pdf
47	http://www.umfiasi.ro/Cercetare/Granturi/Lists/Granturi/DispForm.aspx?ID=94
48	http://www.ascr.ro/en/event_afisare/index/Interactive-Meteosat-ESA-Educational-Software-for-Meteorological-Applications
49	http://www.rosa.ro/index.php/en/esa/article/proiecte/proiecte-internationale/12-esa/308-rokeo.html
50	http://gisheo.info.uvt.ro/trac/
51	Lipsa informatii
52	Lipsa informatii
53	Lipsa informatii
54	http://www.iarom.ro/#projects
55	http://www.comoti.ro/en/Proiect_SIPROV.htm?pag=1#
56	http://www.incas.ro/index.php?option=com_content&view=article&id=238&Itemid=167
57	http://mail.incas.ro/PN%20II%20-%20Capacities/Cy-Roman_air_eng/index.html
58	http://www.icpe-ca.ro/ro/plantinhib
59	Lipsa informatii
60	http://www.nasa.gov/mission_pages/station/research/experiments/CFS-A.html
61	http://km3net.org/home.php
62	http://antares.in2p3.fr/
63	http://www.astrobionix.com/ls_mjolnir_toulouse_telemedizin.pdf
64	http://www.gmes-geoland.info/
65	http://www.emergencyresponse.eu
66	http://www.balkangeo.net/
67	http://www.aero.pub.ro/wp-content/uploads/Contracte

68	http://www.camonal.sportscience.ro
69	http://siat.rosa.ro
70	http://www.ipacv.ro/aexon
71	http://www.cnmp.ro:8083/pncdi2/program4/2008/main/index.php?&we=a4e9428fad82837902e19b9a12e1443f&wf=detail&id=2485&wchk=863997e2c8b6ca3c0d9ffcc410085804
72	http://www.iarom.ro/docs/sistelmed.pdf
73	http://bioregis.itcnet.ro/index_en.html http://bioregis.itcnet.ro/eng/rezultate.html
74	http://www.imt.ro/nanoxi/en/publications.htm http://www.imt.ro/nanoxi/en/results.htm
75	http://dicomge.utcluj.ro/modef http://www.cnmp.ro:8083/pncdi2/program4/competitie/main/index.php?&we=26531b94a8aa9ff7df5c5d983a506cd6&wf=detail&id=1336&wchk=099d55887ad1f51a61febfb2777cd363
76	http://www.infim.ro/~lab150/projects/2007/PNCD2/PN2P/NAFO/index.html http://www.cnmp.ro:8083/pncdi2/program4/competitie/main/index.php?&we=26531b94a8aa9ff7df5c5d983a506cd6&wf=detail&id=2115&wchk=92645684281bebd8eb4b095ff8356a6a
77	http://plasmal.inflpr.ro/2D-NANO/2D-NANO_Engleza.htm
78	http://firmagic.icpe-ca.ro/ http://www.cnmp.ro:8083/pncdi2/program4/competitie/main/index.php?&we=26531b94a8aa9ff7df5c5d983a506cd6&wf=detail&id=256&wchk=6e1f2d87925161979dd2a8e21ba44bb7
79	http://www.accent.ro/dualtomo.html
80	http://www.phys-iasi.ro/~bav08 http://www.cnmp.ro:8083/pncdi2/program4/competitie/main/index.php?&we=26531b94a8aa9ff7df5c5d983a506cd6&wf=detail&id=557&wchk=28c5a86d2965cd11e9c7d80b588fb3a9
81	http://www.itim-cj.ro/PNCDI/MOBSPEC%28CCUNA%29/engleza.htm#_Results_disemination:
82	http://iss30.nipne.ro/gpsm/proj/ptsmgal/en/pub.html
83	http://dig.inflpr.ro/results.html
84	http://www.sirpro.ro/ http://www.cnmp.ro:8083/pncdi2/program4/competitie/main/index.php?&we=26531b94a8aa9ff7df5c5d983a506cd6&wf=detail&id=1185&wchk=9b102ada0f71d7086b1739472fa1efd3
85	http://www.nbce.ro/index.php/pncd2/proiect/6/ro http://www.cnmp.ro:8083/pncdi2/program4/competitie/main/index.php?&we=26531b94a8aa9ff7df5c5d983a506cd6&wf=detail&id=1969&wchk=efd567452513b1599a5eab874227e11b