

**INCDMF BUCHAREST / MEDIUM AND LONG
TERM STRATEGICAL TRENDS SYNTHESIS**

Nr. crt.	STRATEGICAL TREND	MEASURES
0	1	2
2007 – 2013		
A. Domain: INTELLIGENT MEASUREMENT TECHNIQUE / SYSTEMS/ MECHATRONICS INSTALATIONS AND EQUIPMENTS FOR MULTIDIMENSIONAL CONTROL INTEGRATED IN THE MANUFACTURING PROCESSES		
1	<ul style="list-style-type: none"> • Development new mechatronic productice: sensors and microsensors, actuators and microactuators, robots and minirobots, high precision intelligent systems and microsystems; 	<ul style="list-style-type: none"> ➤ New virtual laboratories development and integration on domains and subdomains from precision mechanics and mechatronics profile; ➤ Training for the specialized staff for intelligent measurement technique; ➤ Concluding contacts with university experts industry in order to form set up CLUSTERS; ➤ Attending scientific events dedicated to MECHATRONIC DOMAIN; ➤ To involve young graduates of the specialized institutes (mechatronics, electronics, electrotechnics, automation and informatics) supporting them in order to finalize the master’s degree; ➤ Increase the contacts with experts from research universities from the U.E.in order to participate in International Programs – Eureka, PC7, etc; ➤ Develop and apply new modern marketing and management methods; ➤ Identify potential parteners in emergent industries and involve them in tehcnological clusters having as objective the direct transfer of the research results;
2	<ul style="list-style-type: none"> • Research development by competition engineering for new products technologies and services of precision mechanics and mechatronics and by synergetic integration of the micromechanical engineering with microelectronics and microinformatics; 	
3	<ul style="list-style-type: none"> • Mechatronic and micromechatronic research development for an opened communication system within the manufacturing / processes; 	
4	<ul style="list-style-type: none"> • Set up and develop intelligent mechatronic means and methods in order to measure and test on optical principles; 	
5	<ul style="list-style-type: none"> • Set up and develop mechatronic means and methods in order to test the hardness layer, whickness and the dynamic phenomenon, on modern principles (ultrasounds, turbionar currents, lasers) with digital display and quick conversion of the results; 	
6	<ul style="list-style-type: none"> • Develop intelligent equipments and devices for integrated dimensional control/ test; 	
7	<ul style="list-style-type: none"> • Develop mechatronic and micromechatronic applied research as informatized systems and microsystems of processes products and services from industry, economy and society; 	
8	<ul style="list-style-type: none"> • Through going micromechatronics as 	

	integrated microsystems of the micro-mechanisms, microsensors, microactuators and microcontrollers for processes and intelligent test and manufacturing systems;	
B. Domain: INNOVATIVE MATERIALS AND TECHNOLOGIES		
9	<ul style="list-style-type: none"> • Develop intelligent mechatronic systems and microsystems for conventional and nonconventional manufacturing: <ul style="list-style-type: none"> ○ diagnosis and analyze systems; ○ intelligent systems and microsystems for processing, monitoring, transfer and management; ○ systems and equipments to test the conformity by dynamic tests in real time; 	<ul style="list-style-type: none"> ➤ Elaborate setup the domain monitoring strategy according to the research trends within FP6, FP7 and the needs to ones the Structurale founds; ➤ Set up a thematic portfolio on the hoses of analyzing the participation potential to the national programmes: Nucleu, POS – CCE, PNCDI 2, CEEEX, etc; ➤ Set up, stabilize and develop the domain specific infrastructure: <ul style="list-style-type: none"> • CDI laboratories.; • centres for systemic research and tests for applicative nano and microtechnologies; • excellence centres for the hard and extrahard materials , with the necessary equipments / devices. ➤ Develop internal partnerships with research entities (academy, research institutions universities) and production, (specially SMEs, in order to obtain transferable results in production); ➤ Develop and train permanently the human resources potential test the interest for innovation and patents; ➤ Setup and develop of a programe of activites on improving the domain vizibility. Web page domestic and international informatic connection to date basis, participation in technical scientific of activities / events writing articles ISO certificates, technical papers, scientific communications, etc.
10	<ul style="list-style-type: none"> • Through going research in the field of the micro and nanostructures pulverulente new materials; <ul style="list-style-type: none"> ○ specialized technologies to process and use new materials with directioned characteristics; ○ mechatronic methods and equipments specialized for processing and characterization; 	
11	<ul style="list-style-type: none"> • Systemic tribotehnological research: <ul style="list-style-type: none"> ○ analyze cutting and microcutting specific tribosistems with composite hard and extrahard materials; ○ characterize covering micro and nanostructure with resistant materials; ○ methods procedures to test in dynamic regime with and without lubrication; 	
C. Domain: MEDICAL AND BIOMEDICAL TECHNIQUES TOOLS AND DEVICES		
12	<ul style="list-style-type: none"> • Set up and develop techniques and devices in order to analyze and test the environment; 	<ul style="list-style-type: none"> ➤ Set up / Elaborating an action plan including the main developing trends according to the UE
13	<ul style="list-style-type: none"> • Develop devices for testing and characterizing specific materials for roads 	<ul style="list-style-type: none"> ➤ Develop the field specific infrastructure (research laboratories);

	construction, bridges and highways;	<ul style="list-style-type: none"> ➤ Train to human resources; ➤ Develop the medical technologies management; ➤ Develop partnerships with medicine and pharmacy, universities, politechnical universities, mechatronics – precision mechanics and clinical hospitals for research and develop technico-clinical specific procedures for system engineering; ➤ Certify the medical units and biomedical laboratories.
14	• Set up/ develop the research devices for rocks mechanic and geotechnical investigations;	
15	• Develop biomechatronic devices generating neojoints;	
16	• Develop techniques and means on tridimensional reconstruction of the skeleton elements;	
17	• Develop virtual intelligent medical techniques guided by neuroimaging with applications in microsurgery and neurosurgery;	
18	• Develop implanto prosthetic therapies by guided osteo reconstruction;	
19	• Approach the data safety techniques provided by the clinical and laboratories equipments;	
20	• Develop new intelligent devices for medical equipment, control and test;	
D. Domain: QUALITY AND STANDARDIZATION		
21	• Renew the conformity certification of the management quality system implemented in INCDMF;	<ul style="list-style-type: none"> - Review / complete the documents set in order to transpose in the MQS documentation all the reference standards requirements - Fulfill the recertification requirements by actions and measures taken within on the organizing divisions / departments and the ongoing improvement of the MQS implemented in INCDMF; - MQS documentation in accordance with the referential SR EN ISO/ CEI 17025:2005 requirements in order to accomplish the accreditation conditions for the main laboratories which was reorganized; -fulfill the accreditation requirements by changing the documentation according the noticed nonconformities - Set up training and permanent improving of the staff working in the quality infrastructure under the INCDMF legal responsibility; - Complete the number of internal and external auditors for quality in order to monitorize the 4 MQS: the one of INCDMF, of the main accredited laboratory, of the Products Certification Organization
22	• Maintain and improve permanently the certified MQS system;	
23	• Develop and extension of the accredited laboratories activities (5 labs.) and of those during accreditation (3 labs.) as one laboratory (8 directions test);	
24	• Conformity accreditation with the referential SR EN ISO 45011 by the Organization certifying the weighing devices with nonautomate operation – CERT – AFCN;	
25	• Conformity accreditation with the referential SR EN ISO 45012 by the Organization certifying the management quality system –MEFI - CERS;	
26	• Extension of the conformity certification for the MQS implemented in INCDMF, with the safety requirements;	

		Certifying MQS - MEFI- CERS.
E . Domain: STRATEGY, DEVELOPMENT AND MARKETING		
27	<ul style="list-style-type: none"> • INCDMF Annual Research Development Strategy; 	<ul style="list-style-type: none"> • Provide the interrelational and intercomunitar system between the responsible and participating to the strategy entities • Information and knowleages transfer both from European strategies and national ones • Involvement by Romanian standards compatible with the European standards • Provide the experts European and international mobility and trainig the experts in UE and international dissemination.
28	<ul style="list-style-type: none"> • The National Strategy of the Precision - Mechatronics Integrated Industry 2008-2013; 2013-2020 vision 2025; 	
29	<ul style="list-style-type: none"> • Developing Strategy for / in Infrastructure, Technical Changings and valorify the RDI results; 	
30	<ul style="list-style-type: none"> • The Strategy for Research and Development of a Modern Management as the European one at the national institute level and of Strategical Domain –Precision Mechanics and Mechatronics Integrator Domain; 	
31	<ul style="list-style-type: none"> • Adhesion and strategy to UE of the Integrator Domain Precision Mechanics and Mechatronics in order to raise the competition and complementarity at the level of the similar European domain; 	
F. Domain: TECHNOLOGICAL TRANSFER (Relay Center for Technological Transfer and Consulting- CRTTC; The Interregional Innovation and Technological Transfer-Chișinău – Iași- București- CIITT; The Office for Connections with Industry–OLI and Business School –SA)		
32	<ul style="list-style-type: none"> • Overpass /transfer the products technologies and new services as research to industrial producers and potential beneficiaries; 	<ul style="list-style-type: none"> ➤ Improve the research results valorification degree from the precision mechanics and mechatronics field and of the patents abstained by INCDMF by dissemination information, results and new knowledges, by carrying out the technological transfer by assesing and monitoring the technological transfer, etc.; ➤ Providing on interactive of demand end offers products technologies in the field; ➤ Setting up partnerships and interest groups for products technologies and services technological transfer to / for industry, economy end society but mostly to innovative SMEs ; ➤ Training experts for the TT, field by courses and workshops; ➤ Involving the human resources in INCDMF in infrastructure and TT process;
33	<ul style="list-style-type: none"> • Carrying out / modernising technologies and products by integrating ideas end technological solutions, in order to improve the productivity and the high value; 	
34	<ul style="list-style-type: none"> • Permanent development of the informational processes and the innovative communication within technologies – infotechnology structure; 	
35	<ul style="list-style-type: none"> • Interactive communication and integration of inventions and innovations by structure systems, cycles and specific economical agents; 	
36	<ul style="list-style-type: none"> • Sending the ideas and patented solutions from the research development entities 	

	field to the ideas market and the applied patents;	
37	<ul style="list-style-type: none"> • Permanent development of the interregional transfer Romania –the Republic of Moldova; 	
2013 - 2020		
A. Domain: INTELLIGENT MEASUREMENT TECHNIQUE / SISTEMES/ MECATRONIC EQUIPMENTS AND INSTALATIONS FOR MULTIDIMENSIONAL INTEGRATED CONTROL IN MANUFACTURING PROCESSES		
38	<ul style="list-style-type: none"> • Develop micromechanical systems as the fusion of different techniques: nanotechnologies micro and nanorobots, processes /microprocesses IC and microdevices; 	<ul style="list-style-type: none"> ➤ Setting up the development strategy in the field according to the research trends within the International Programmes and the accession of the UE Structural Funds; ➤ Cooperation substantiation with research institutes from developed countries in order to achieve the performance parameters corresponding to UE requirements; ➤ Increase the researchers mobility/ exchange and their training in mechatronic specific fields; ➤ Support the participation of the Romanian researchers to scientific events dedicated to follow the proposed / suggested objective by the European Council on ongoing research.
39	<ul style="list-style-type: none"> • Develop micro and nanotechnologies in the scientific instrumentation; 	
40	<ul style="list-style-type: none"> • Including the applicative research in order to form and develops biomechanics and biomicromechanics; 	
41	<ul style="list-style-type: none"> • Develop microelectromechanical systems with IC processes; 	
42	<ul style="list-style-type: none"> • Technologies development for integrating the joint Microsystems formed by /from mechanical, electrical and flow elements; 	
43	<ul style="list-style-type: none"> • Develop the architecture and algorithms to order microsystem; 	
44	<ul style="list-style-type: none"> • Develop microdevices for micro-measurements, in 3 D; 	
45	<ul style="list-style-type: none"> • Manufacturing processes for micronic 3D parts; 	
46	<ul style="list-style-type: none"> • Develop micro and nanorobots <ul style="list-style-type: none"> - microrobots for inspection and maintenance; - microrobots for microsurgery and telemicrosurgery; - interface human / device for telesurgery in microenvironment; 	
B. Domain: INNOVATIVE MATERIALS AND TECHNOLOGIES		
47	<ul style="list-style-type: none"> • Researches in the field of pulvelurente micro and nanomaterials structures; 	<p>The perspective of the activity structure for the next fields:</p> <ul style="list-style-type: none"> • fundamental research: systemic approaches for micro and nano-
48	<ul style="list-style-type: none"> • Characterizing covering micro and nanostructures with resistant materials; 	

49	<ul style="list-style-type: none"> • Intelligent, complex technologies and equipments for monitorizing complex manufacturing processes; 	<p>processing technologies and materials with directioned carbonic properties / characteristics and syntesis composites;</p> <ul style="list-style-type: none"> ➤ Set up sinergies with technological platforms on guided objectives to increase the competitiveness (international: FuMaT, MANUFACTURE, etc. and materials) ➤ Develop of the international cooperation bilateral and unilateral (with the Institute for Advanced Technologies, Kracow – Poland, The Insitute for Logistics – Miskolc – Hungary, The Institute for Material Science, Hanover – Germany, etc)
50	<ul style="list-style-type: none"> • Set up and develop unconventional dedicated equipments with process and informational systems for manufacturing and thermic tratament (laser); 	

C. Domain: MEDICAL AND BIOMEDICAL TECHNIQUES TOOLS AND EQUIPMENTS

51	<ul style="list-style-type: none"> • Equipment development in order to characterize the natural under each depozitis; 	<ul style="list-style-type: none"> ➤ Set up An Excellence Center for Research, Development the Scientific Equipment and for Laboratory. ➤ Include INCDMF in the Biosystems Technological Platform. ➤ Promate the partnership with other interested institutions in order to setup a magazine on research and labs. devices, in Romania. ➤ Develop partnerships with medicine and pharmacy Universities, politechnical universities, mechatronics – precision mechanics, faculties departments and private entities in order to improve the devices visibility and the Romanian medicine at the European level. ➤ Develop new laboratories aiming to improve the medical services quality. ➤ Intensify the interdisciplinary cooperation in order to elaborate mechatronic investigation systems (micro and nanorobots). ➤ Training the research staff in order to obtain experts for the interdisciplinary fields: micromechatronics, medicine, electronics.
52	<ul style="list-style-type: none"> • Equipment research and development in order to anounse phenomenon acting / operating before hazard; 	
53	<ul style="list-style-type: none"> • Medical microanalyzers development on nanotechnologies basis; 	
54	<ul style="list-style-type: none"> • Develop and introduce on a large scale the use of stem cells in same tissues and organs reconstruction regeneration; 	
55	<ul style="list-style-type: none"> • Develop the active implantalogy on the basis of tissular engineering of bone guided reconstruction; 	
56	<ul style="list-style-type: none"> • Using of the fundamental genomic structure and the carbon tubes to carry out ports of the human skeleton; 	

D. Domain: QUALITY AND STANDARDIZATION

57	<ul style="list-style-type: none"> • Permanent improvement of the quality management system implemented in INCDMF and maintaining its certification conformity with the reference standard 	<ul style="list-style-type: none"> ➤ Training for staff / organizations / laboratories about the reference standards requirements in the quality management system.
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58	<p>SR EN ISO 9001:2001;</p> <ul style="list-style-type: none"> • Obtain and maintain the main laboratories. Accreditation according to the referential SR EN ISO / CEI 17025:2005 requirements and extension of its testing activity with new testing standardization domains within INCDMF field; 	<ul style="list-style-type: none"> ➤ Assistance / Support in order to project / set up the QMS in order to carry out a specialized documentation for processes/ subprocesses and activities ongoing within organization. ➤ Carrying out internal audits of the QMS implemented by the CMCS own auditors (trained auditors, formed and having a great experience) identifying and correcting / preventing unconformities and identify permanent quality improving modalities.
59	<ul style="list-style-type: none"> • Maintaining the accreditation in accordance to the referential SR EN ISO 45011:2001 requirements and extending the certification domain (for other products concerning INCDMF) of the CERTIFICATION CERT – AFCN; 	
60	<ul style="list-style-type: none"> • Maintaining the accreditation according the referential SR EN ISO 45012:2000 requirements and extension of the certification domain for other activities) for the OMS CERTIFICATION Organization – MEFI – CERS; 	
<p>E. Domain: STRATEGY, DEVELOPMENT AND MARKETING</p>		
61	<ul style="list-style-type: none"> • Strategy of impact 2020-2025 at the national level and at European level an Research-Development Strategy for the Integrator Domain Precision Mechanics and Mechatronics; 	<ul style="list-style-type: none"> ➤ Participation in European Projects AS Technological Industrial and Scientific Platforms: <ul style="list-style-type: none"> • Robotic platform • Manufacture platform • Mechatronic and micromechatronic, micro and nanotechnological , micro and nanometric platform. ➤ Developed integrated engineering systems and microsystems; ➤ Competitive development of mechatronic products and systems, Physical and Virtual, integrated systems for mechatronic Technologies, Intelligent products and Integrations; ➤ Develop process equipments and experimental investigation; ➤ Competitive Research Laboratories Development for: <ul style="list-style-type: none"> • Integrated informational technology in the Mechanical Engineering and tool Engineering Micromechanisms and systemic engineering; • Shaping and Number Simulation of the Industrial processes;
62	<ul style="list-style-type: none"> • Integrating INCDMF Research and Development activity in the European Research area; 	
63	<ul style="list-style-type: none"> • Develop the infrastructure and laboratory test- experiments activities and the national laboratories nets, test and certification laboratories on the basis of european intercompatibility; 	

		<ul style="list-style-type: none"> • Sustainable training on Management and Virtual Enterprises Engineering; • Research on Technological Systems Performances; • Products Integrated Engineering for Flexible Industrial Production Management and Programming; • Innovative Advanced Technologies, Composite Products Technology; • HIGH-TECH products, based on new knowledges and on Mechatronic and Integronic concepts; • Research – Development for micro and nanometric Intelligent Devices Technique; • Robotics, microrobotics and nanorobotics; • Actuators / microactuators,sensors, microsensors, transducers / micro-transducers ; • Micro and nano manufacturing with hard and extra hard materials; • Systems and Microsystems with integrated optoelectronics, lasers and microlasers, telemetry and holography.
<p>F. Domain: TECHNOLOGICAL TRANSFER (Relay Center for Technological Transfer and Consulting – CRTTC; Interregional Centre for Inovation and Technological Transfer – Chisinau, Iasi,- Bucuresti-CIITT; the Office for Conections with Industry - OLI and the Business School –SA)</p>		
64	<ul style="list-style-type: none"> • Introducing the research results with Precision Mechanics and Mechatronic field in manufacture 	<ul style="list-style-type: none"> ➤ Encourage the SMSs and economical agents access, to the research results in the field; ➤ Develop the CRTTC visibility by its participation to different national and international events from the TT and SMEs field; ➤ Implement the CRTTC structure within the national net and UE specific nets.
65	<ul style="list-style-type: none"> • Setting up and developing SMEs in the productive sector and in the field of services high added value afferent to Precision Mechanics and Mechatronics industry; 	
66	<ul style="list-style-type: none"> • Provide consulting for the TT process; 	
67	<ul style="list-style-type: none"> • To bring about the external and instruments for developing TT and TT infrastructure; 	
68	<ul style="list-style-type: none"> • Provide a modern and competitive 	

	industrial management at European level for supporting the SMEs access to European and international community programs .	
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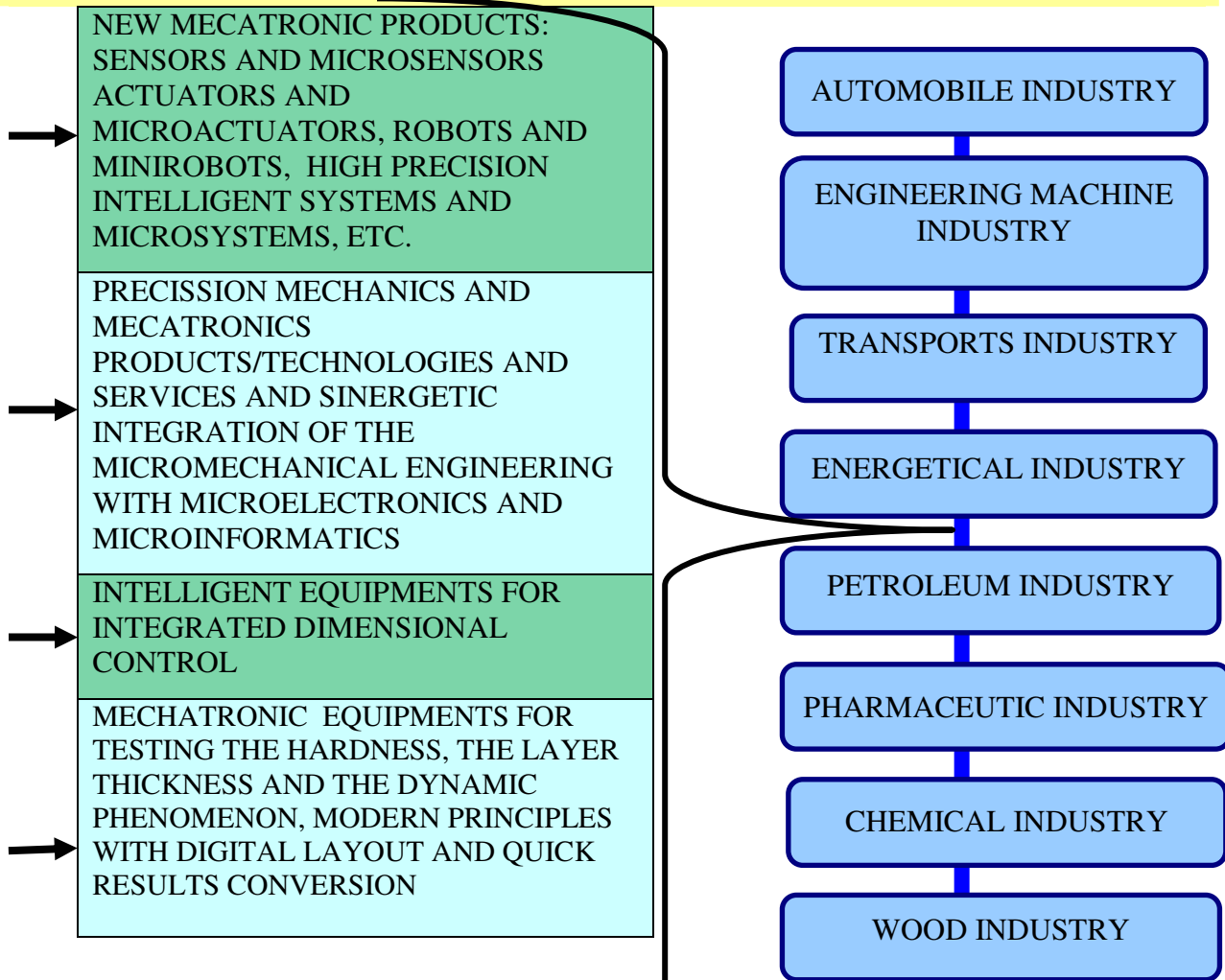


INTEGRATOR DOMAIN PRECISION MECHANICS AND MECATRONICS ORIENTED TO ROMANIAN INDUSTRY AND ECONOMY HARMING

MAIN STRATEGY DIRECTIONS

HARMED INDUSTRIAL AND ECONOMICAL SECTORS

1. INTELLIGENT MEASUREMENT TECHNIQUE/SYSTEMS/MECHATRONIC EQUIPMENTS AND INSTALATIONS FOR MULTIDIMENSIONAL CONTROL INTEGRATED IN THE MANUFACTURING PROCESSES



→ INTELLIGENT MECATRONIC METHODS AND MEANS FOR MEASUREMENTS AND TESTS BASED ON OPTICAL PRINCIPLES

2. MATERIALS AND INNOVATIVE TECHNOLOGIES

→ INTELLIGENT MECATRONIC SYSTEMS AND MICROSYSTEMS FOR CONVENTIONAL AND UNCONVENTIONAL MACHINING :

- systems for analyse and diagnosis
- intelligent systems and microsystems for processing, monitoring, transfer and management
- systems and equipments for testing the conformity by dynamic tests in real time

→ NEW PULVERULENT MATERIALS FOR MICROSTRUCTURES AND NANOSTRUCTURES:

- specialized technologies for processing and using new materials with directioned properties
- mecatronic methods and equipments specialized for processing characterization

→ TRIBOTECHNOLOGICAL SYSTEMS:

- specific tribosystems for cutting and microcutting with-hard and extra-hard composite materials
- systems for micro and covering nanostructures with wear resistance materials
- methods and procedures for dynamic regime with or without lubrication testing

PROCESSING INDUSTRY

ENGINEERING MACHINE INDUSTRY

AUTOMOBILE INDUSTRY

ENERGETICAL INDUSTRY

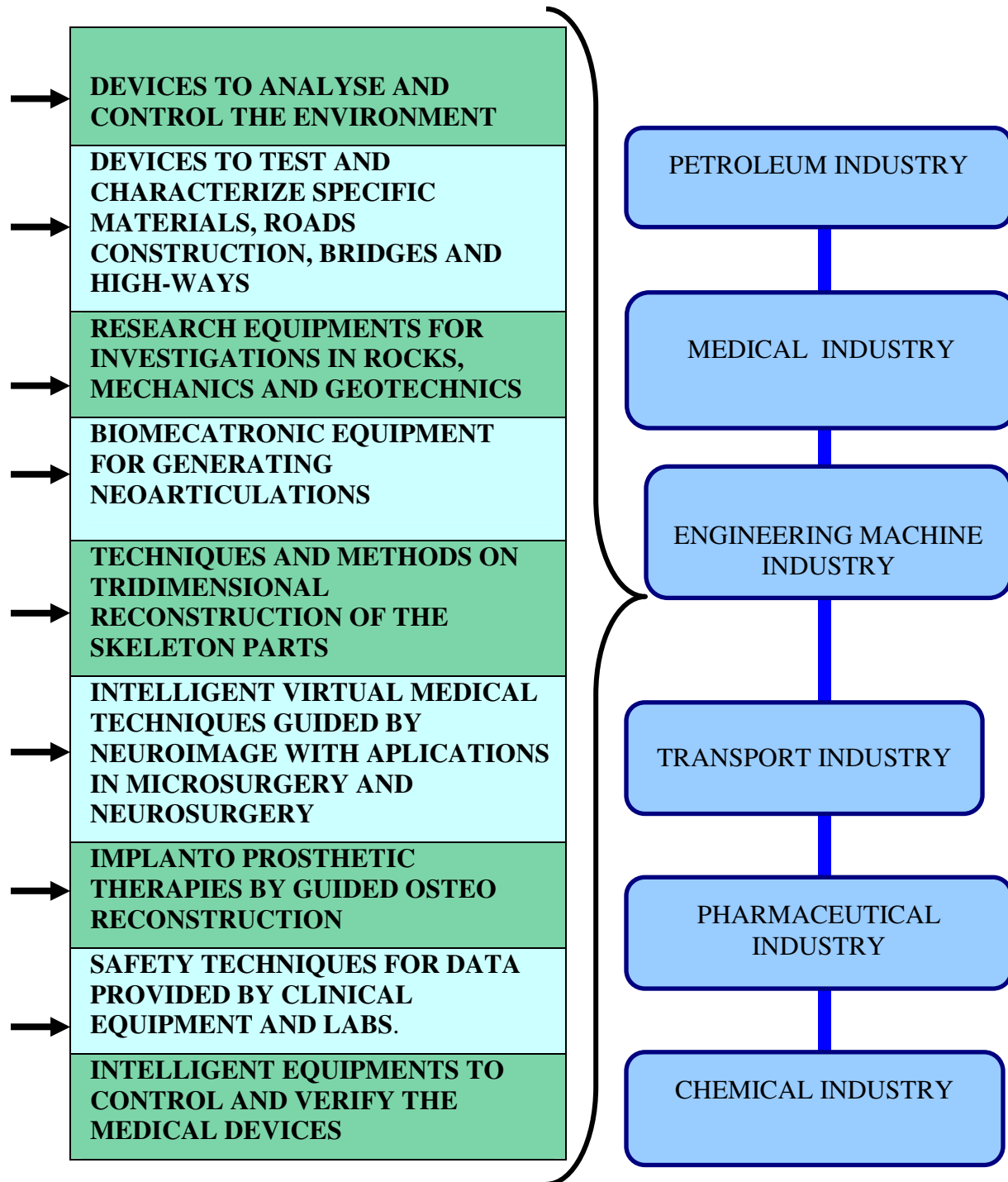
PETROLEUM INDUSTRY

METALLURGY INDUSTRY

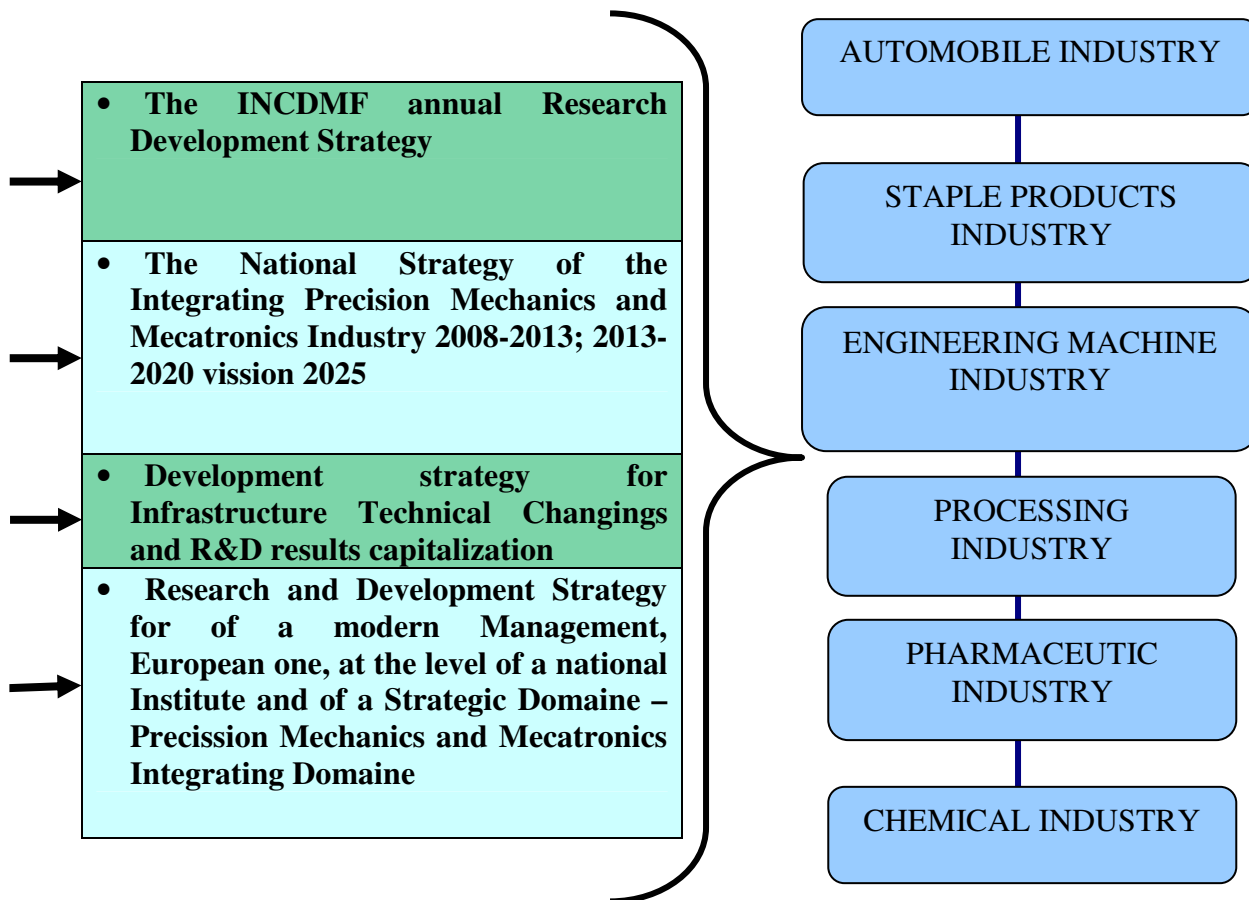
CHEMICAL INDUSTRY

WOOD INDUSTRY

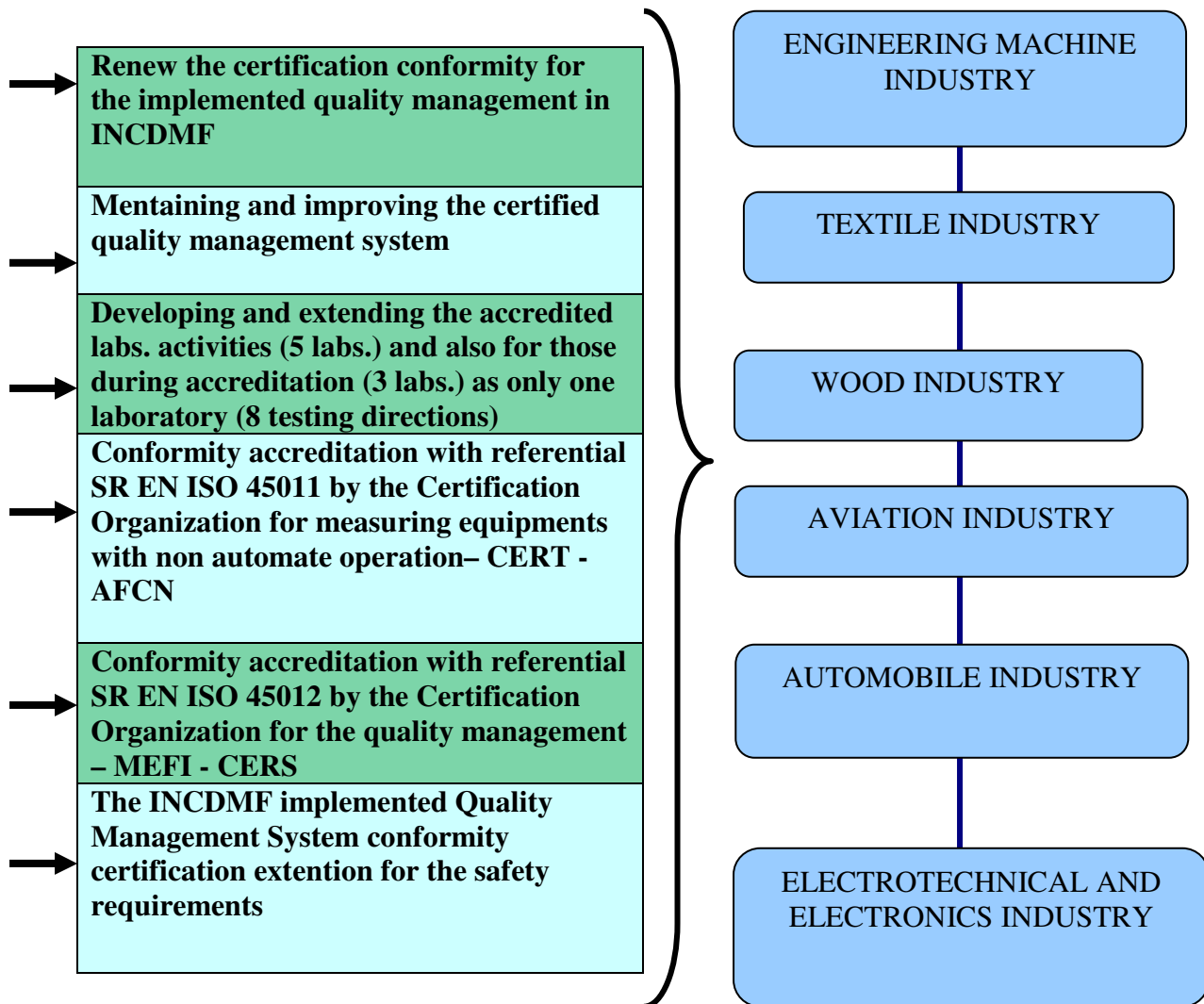
3. TECHNIQUES/TOOLS AND MEDICAL AND BIOMEDICAL EQUIPMENTS



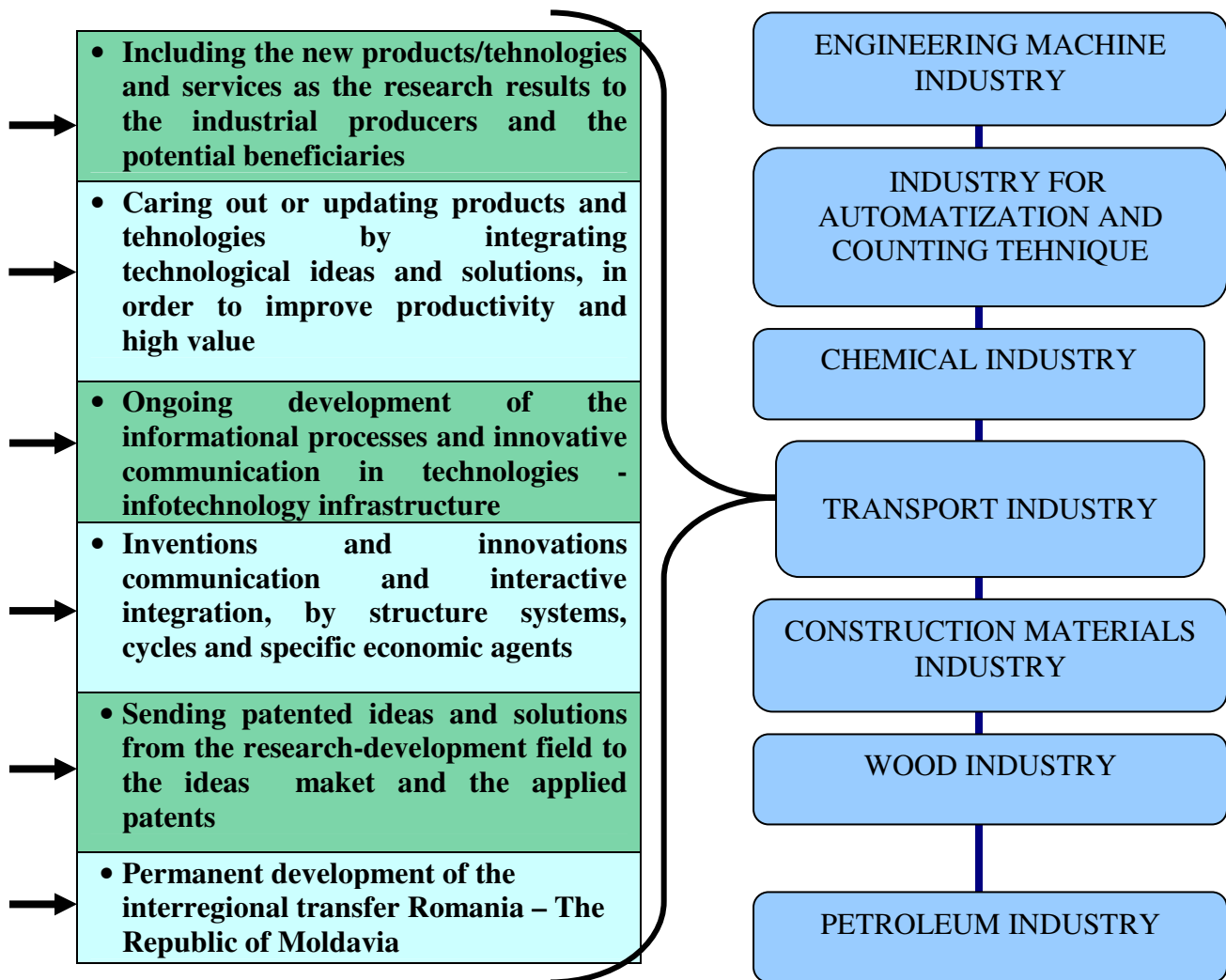
4. STRATEGY, DEVELOPMENT AND MARKETING



5. QUALITY AND STANDARDIZATION



6. TECHNOLOGICAL TRANSFER – Relay Centre for Technological Transfer and Consulting - CRTTC;
(Interregional Centre for Innovation and Technological Transfer - Chisinau – Iasi – Bucharest - CIITT , Office for Connection to Industry – OLI and Business School - SA)



**MOTIVATION ON RENAMING THE RESEARCH AND
DEVELOPMENT NATIONAL INSTITUTE IN THE FIELD AS A
RESULT OF THE EUROPEAN AND WORLD PLANE OF THE HIGH-
TECH, PRECISION MECHANICS AND MECHATRONICS**

- Beginning with the period 1975÷1985 in most UE (France, Great Britain), Asia (Japan), USA developed countries, the evolution of the Precision Mechanics has registered technical – technological development stages and detected new horizons, from precision mechanics, automatized industrial microsystems, techniques and equipments based on silicon processing / microprocessing, to new multidiscipline high-tech fields and with high contribution transfer of the military techniques in the civil domain/field.

As a result, in 1978, in Japan were put the basis of the Technological University from Toyohashi, the engineering training preparation being based on the Mechatronic Philosophy, marking the stage from the traditional engineering, to the simultaneous engineering.

During the next period, 1985÷2006 in the developed countries are noted new evolutions generating and integrating mechanical engineering, electronics, electrotechnical fields with the informatics engineering field generating the new Integrator Field – Mechatronics Engineering. The innovations in technology and education generated Mechatronics patent was registered in Europe, too. The importance of the issues is confirmed by the initiatives and the programs launched at the European Commission level. Thus, in 1986 – Mechatronics receives European citizenship. The Consultative Committee for Industrial Development of the EU recognizes Mechatronics as a Major Initiative for the European Citizenship.

- In the same period, 1985÷2006, the development of the fundamental scientific basis of the Mechatronic field was supported and proceeded by the great majority of the technical / technological universities from the main developed countries:
 - POLITEHNICA UNIVERSITY TORINO – (ITALY) Mechatronics Department;
 - LEUVEN CATHOLIC UNIVERSITY (BELGIUM) - Mechatronics Institute;
 - THE UNIVERSITY FROM LANCASTER (GREAT BRITAIN) - Mechatronics Research Centre;
 - POLITEHNICA FROM COPENHAGA (DENMARK) - Mechatronics Research Centre;
 - FEDERAL INSTITUTE FOR TECHNOLOGY (AUSTRIA) - Mechatronics Research Centre;
 - INSTITUTE FOR MECHATRONICS FROM CLERMONT – Ferrand (France);
 - INSTITUTE FOR MECHATRONICS FROM DUISBURG (GERMANY);

- **TECHNICAL UNIVERSITY FROM DARMSTADT (GERMANY) – Mechatronics Department and many others;**
- **In the Eastern Europe (Poland, Czech Republik, Slovenia, Hungary) have been elaborated National Programs coordinated by the Academy of Science starting with 1991, 1992.**

■ **In Poland were set up the Universities for mechatronics in Lodz and Warsaw. In the Czech Republik such universities were set up in Praga and Liberec.**

Between the remarkable initiatives of the EC is the project of setting up / building a Mechatronic European Net of Excellence, considered to be the main operating instrument for the established objectives achievement during the Summit European Community Council from Lisabona, march 2000.

These objectives are formulated so that Europe will become the most dynamic knowledge - based economy on world, able to support the ongoing economical groth, setting up new working places and a better social cohesion.

■ **On the national plane the Mechatronics Field was created and developed in 1985, Institute for Scientifical Research and Technological Engineering for Precision Mechanics and Tools from Bucharest, known today as INCDMF, approaching high complexity themes combining in a synergetic way the precision mechanical engineering, electronic control and systemic thinking by creating and assimilating, mainly:**

- **analogic and digital instrumentation for the technique measurement and dimensional control**
- **mechatronic devices and equipments for active control**
 - **automate integrated in the tool machine system**
 - **measurement system**
- **intelligent mechatronic equipments for measuring and testing the shape and position deviations**
- **mechatronic equipments for measuring and calibrating the precision tools**
- **intelligent systems for testing the quality of the manufactured / processed surfaces**
- **robots for coordinate (1D, 2D, 3D, 5D) measurements, others**

■ **In Romania, strating with 1994, the Technical Universities approached the Mechatronic Field by introducing specific disciplines in the university curricula:**

- **University Politehnica Bucharest – The Faculty for Mechanics and Mechatronics – Centre for Research & Development in Mechatronics**
- **University Politehnica Timisoara – Mechatronics Department**
- **Technical University “Valahia” Targoviste – Materials Engineering, Equipments for Process and Mechatronics Department**
- **Technical University “Gh. Asachi” Iasi – Mechatronics Department**
- **“Stefan cel Mare” University Suceava - Mechatronics Department**

■ On scientific plane, INCDMF Bucharest organized the National Conference for Precision Mechanics, (COMEFIN), which during the last editions enlarged the approaches, becoming National Conference for Precision Mechanics and Mechatronics, with International Participation. INCDMF Bucharest HOSTED THE 8th edition in October 2005.

Other scientific events were organized by the University Politehnica Bucharest, Mechanical and Mechatronics Faculty hosting the first meeting of the members of the Romanian Society for Mechatronics (SROMECA). On this occasion has been validated the setting up of the society regional branch in: Brasov, Bucharest, Cluj-Napoca, Iasi and Timisoara.

Within the same field is the ASSOCIATION FOR PRECISION MECHANICS, OPTICS AND MECHATRONICS FOR ROMANIA (AMFOR) with the headquarter in Bucharest.

- As a result of the above mentioned issues it was suggested the renaming of the NATIONAL INSTITUTE FOR RESEARCH – DEVELOPMENT FOR PRECISION MECHANICS as the NATIONAL INSTITUTE FOR RESEARCH – DEVELOPMENT IN PRECISION MECHANICS AND MECHATRONICS.

