



Romanian Space Agency

Brookering Event

START Project

SOFIA, 2-3 September 2004



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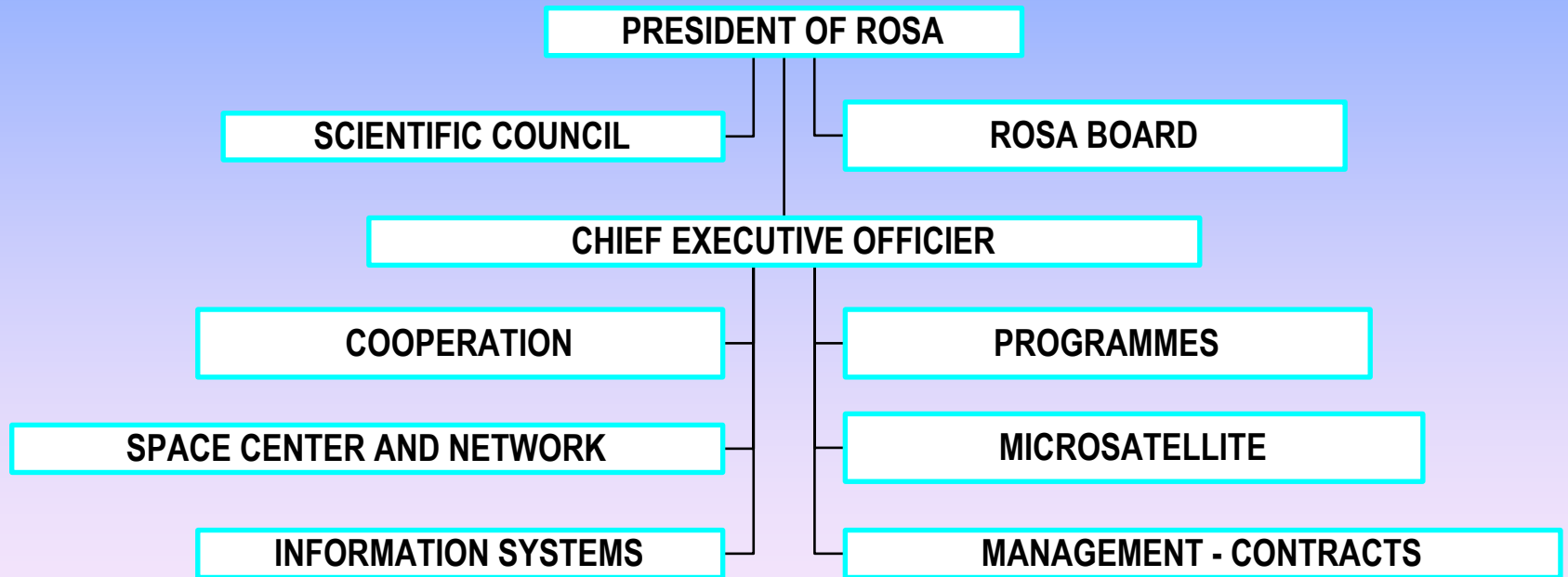
- Romanian Space Agency (ROSA)
- Space and Aeronautics R&D Programme
- International Cooperation

Romanian Space Agency (ROSA)

- Established in 1991, by the Government Decision no. 923/ 20 Nov 1995, ROSA is an independent public institution
- Mission:
 - to coordinate the national space research and applications programs
 - to promote space development
 - to be the Government representative in the international space cooperation
 - to develop specific project oriented research
 - Under the Authority of the Romanian Government - Ministry of Education and Research
 - ROSA is authorized to establish research and development centres oriented on specific objectives of the Romanian Space Programme



Romanian Space Agency (ROSA)



ROSA Infrastructure

- ROSA Headquarters in the centre of Bucharest
 - Offices
 - Computers network and office utilities
 - T1, ADSL and VSAT Internet permanent connections
 - <http://www.rosa.ro>
- ROSA Research Centre
 - Shared building and some facilities with INCAS and the Institute of Space Science
 - Laboratories, Amphitheatre and offices, Library
 - Computers network and T1 Internet permanent connection
 - Ground station for NOAA satellites
- Space Applications Centre (CRUTA)
 - established 1993, fully equipped for satellite data processing, VPN with ROSA

Romanian Space Agency (ROSA)

- Integral extra-budgetary financed; sources:
 - R&D contracts, consultancy, international cooperation, management
- Contract authority for the National R & D Programme on Space & Aeronautics
- Government representative for
 - the European Space Agency (ESA)
 - United Nations Committee on the Peaceful Uses of Outer Space
 - NASA, CNES (French Space Agency), others
- Staff: 38, young and motivated
- Horizontal manager of space and aerospace R&D activities in Romania
- Recognized by the R&D Community



National Programme on Aeronautics and Space

- Started since 1993
- Continuity of projects
- Stability of management and staff for one decade
- Up to 2001 - financed by the R&D HORIZON 2000 programme
- Since 2001, supported by the Ministry of Education and Research on a multi-year budget basis (Govt Decision No. 556/2001) as a National R&D Programme
- ROSA – Contract authority for the Programme

National Programme on Aeronautics and Space

- Contribute to the national and global scientific development by participation to international space missions and development of new projects
- Improve the national and regional security by means of peaceful space applications
- Contribute to the infrastructure of the information society
- Develop new space technologies, space spin-offs and commercial space applications
- Human resources building to meet the space science and technology development for the 21st Century
- Give a model of capacity building and support the national effort to continental and international integration

National Programme on Aeronautics and Space

Component sub-programs:

- **Policy and infrastructure**
 - Capacity building: technology park, centres of excellence, quality management, GRID, concurrent engineering
- **Space exploration**
 - Space science, microgravity & life science
- **Space applications**
 - Satellite communications, Earth observation, GNSS, precision farming, disaster management, telemedicine, GMES, GALILEO
- **Aerospace science and technology**
 - Aerodynamics and flight dynamics, C3 systems, UAV, onboard technology,
- **Industrial development and spin-off**
 - Aerospace platforms (IAR-99), components, infrastructure, products .

Projects and Organizations (2003)

- Number of current projects:
 - **91** (39 – 2001, 24 – 2002, 28 – 2003)
- Participant organizations (Romanian) : **78**
- Professional staff involved: 830 full time equivalent
- Funding:
 - Budget engagement (present) **14,75 Meuro** (2001-2005)
- Co-financing: **31%** - private and public partners
- Actors: R&D institutes, universities, companies, NGO's, SME's – public and private

Projects and Organizations (2003)

- Main actors:
 - National R&D institutes: Institute of Space Science, National Institute of Aerospace Research, Aeronautical Medicine, Sports, Civil Engineering
 - Romanian Academy Institutes on: Astronomy, Mathematics, Geodynamics, Geography, Information
 - Universities: Bucharest, Timisoara, Cluj, Iasi: Physics, Aerospace engineering, Civil engineering, Geography, Medicine
 - Companies: AEROSTAR, Avioane Craiova, Romaero, Turbomecanica, IAROM, INTERGIS, CRUTA, Global Communications, other SME's
- Public-Private-Partnership

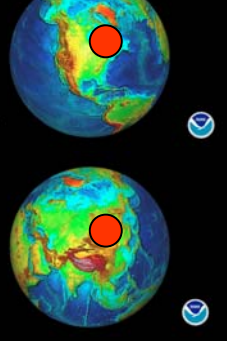
International Cooperation

More than 55% of the projects include international cooperation

Government agreements: ESA, EC, NASA, CNES, Italy, Hungary, Azerbaijan, Russia (negotiations)

- International organizations membership: COSPAR, IAF, IAU, EURISY, SAF, others
- United Nations COPUOS, FAO
- Bilateral agreements (70)

International Cooperation 2002



- Angola
- Azerbaijan
- Belgia
- Bulgaria
- Cehia
- Germania
- Grecia
- Franta
- Italia
- Israel
- Iugoslavia
- Japonia
- Polonia
- Marea Britanie
- Rusia
- Slovacia
- SUA
- Ungaria
- Turcia
- Ucraina



European Space Agency

- 1992 - Agreement between the Government of Romania and the European Space Agency concerning cooperation in the exploration and use of outer space for peaceful purposes, signed in Paris
- 1993 - Agreement ratified by the Parliament, Law 40/1993
- 1993 - 1999 - Cooperation on science, space applications and exchange of information
- 1999 - The second Agreement Romania - ESA, signed in Bucharest (Prime-Minister level) - includes the possibility of participation of Romania in the ESA programs
- 2001 – ESA Programme for European Co-operating State (PECS)
- 2003 – Start of ESA – ROSA negotiations for PECS



ESA - Romania Agreement (1999)

- Art. 2, para 2

The areas considered by the Parties as offering potential for cooperation under this Agreement are:

- Space science, in particular space astronomy and astrophysics, solar system exploration and solar-terrestrial physics;
- Earth observation research and applications, in particular environmental monitoring, meteorology, geodesy and monitoring of major hazards;
- Telecommunications, in particular service demonstrations and satellite navigation;
- Microgravity research, in particular space biology and medicine, and materials processing;
- Ground segment engineering and utilization

ESA - Romania Co-operation

- Space science - missions PLANCK, SPORT, ROSETTA, CLUSTER, FAST
- Microgravity - ISS, ESA microgravity campaign
- Earth observation - utilization of ERS data, training and preparations for ENVISAT, flood monitoring, Black Sea coastal studies
- Telemedicine - project SHARED (1998)
- Precision farming - project ADAM (ESA-CNES-ROSA)
- Training courses, seminars, workshops
- Software - LEOWORKS

ESA - Romania Co-operation

- The full integration in the European Space Agency – main goal of the Romanian Space Agency
- ESA Programme for European Co-operating State contains the fair-return rule
- Romania's contribution for “full membership” – 32 Meur
- PECS (project) – start 2004 – 1-2 Meur – full integration in 2008 – 2009
- Contribution expected for ESA permanent programmes

Romania – European Commission

- Sixth Framework Programme (FP6) – started 2002
 - Romania – full contributor
 - Priority 1.4: Aeronautics and Space
- Aeronautics:
 - CASH, SILENCER
- Space:
 - GALILEO – European GNSS
 - GMES – Global Monitoring for Environment and Security
 - Partnership with European companies and SME's in space applications
 - PHARE projects (MARS, CORINE Land Cover, etc.)

Romania – United Nations

Committee on the Peaceful Uses of Outer Space

- Romania – founding member (1958) and vice-chairman until 1995
- Since 1993, Romania represented by the Romanian Space Agency
- 1997 – Regional Network for Cooperation in Education and Research (Bulgaria, Greece, Hungary, Poland, Romania, Slovakia, Turkey)
- 1999 – Regional UNISPACE III Conference for Eastern Europe in Bucharest
- 2003 – UN Conference on Space Tehnology for Disaster Management for Europe in Romania
- 2004-2006 – Romania – Dumitru Prunariu – Chairman of the Scientific and Technical Subcommittee of COPUOS

Romanian Space Agency – NASA

- 1999 – Visit of NASA Administrator in Romania
- 2000 – Agreement signed by the Prime-Minister and the NASA Administrator in Washington
 - Projects on telemedicine and precision farming
 - Scientific cooperation
 - AMS Project (Shuttle and International Space Station)
 - Disaster management – floods
 - Microgravity and astrobiology



Romanian Space Agency – CNES

CNES (French Space Agency)

- 1990 - 1995 – Training of Romanian professionals in CNES for space applications
- 1999 – Industrial cooperation for ARIANESPACE
- **2000 – Agreement of cooperation between CNES and ROSA**
- 2001 – 2004 ADAM: CNES-ROSA project on precision farming
- 2003 – Common CNES-ROSA project on space information data mining
- 2004 – Cooperation for the CNES space telescope mission COROT



Other agreements

- 1997 – Agreement of cooperation in the exploration and peaceful uses of outer space with the Bulgarian Aerospace Agency
- 1998 – Agreement of cooperation with the Hungarian Space Office
- 1998 – Agreement with the Italian Space Agency
- 2003 – Agreement of cooperation with the Azerbaijan National Aerospace Agency
- 2003 Agreement of scientific cooperation with the National Research Council of Italy (CNR)

International organizations membership

- COSPAR (Committee on Space Research)
- International Astronautical Federation
- International Society for Photogrammetry and Remote Sensing
- Space Agencies Forum (1997)
- EURISY (2001) – member of the Council (2004 - 2006)
- EANA – European Astrobiology Network
- Other memberships by means of the research groups

International relations - 2004

- European Space Agency (ESA) – kick-off of the ECS Program towards scientific and industrial integration
 - Definition of common projects t.b. launched 2005
 - Establishment of the ESA program management unit
- European Commission – ESA
 - Implementation phases for EGNOS – GALILEO
 - Starting the definition phase for GMES participation
 - Phase zero for the Danube Space Applications project (conference in June 2004, Romania)
- United Nations – COPUOS
 - Supervision as STS Chairman of the implementation of the UNISPACE III Five-Year Action Plan
 - Approval of the COPUOS report in the United Nations general Assembly
- European Union
 - Contributions to the drafting of the European Space Program
 - Harmonization of the new Romanian Space and Aeronautics Program for 2005-2009 with the developing scientific, industrial and global security issues in the frame of the Romania – EU integration in 2007
- Agreement of Cooperation with Russia
 - Discussions towards definition of specific joint projects

Thank you for your attention!

