

ARIADNA NEWS: STUDIES IN CFP 03/01 HAVE BEGUN

After an exciting first Call for Proposals, for which plenty of good proposals were received, and following the selection of fifteen of them by the evaluation board, Ariadna CFP 2003/01 is now in the study phase. All the studies have been kicked off and we are now eager to participate in them and see their outcome.

Listed below you can find the names of the universities that have been awarded a contract, as well as the title of the studies:

- 03/1301 - Theoretical study of the interaction of mesoscopic quantum systems with gravity. Carried out by University of Koeln.
- 03/2201 - Laser power beaming feasibility: non-mechanical beam steering options, laser phase-locking and control. Carried out by University of Kaiserslautern.
- 03/4101 - Advanced Global Optimisation Tools for Mission Analysis and Design. Carried out by University of Glasgow and University of Reading, in two parallel studies.
- 03/4102 - Study on libration points of the sun and the interstellar medium for interstellar travel. Carried out by University of Padova and University of Glasgow, in two parallel studies.
- 03/4103 - Assessment of mission design including utilisation of libration points and weak stability boundaries. Carried out by Politecnico di Milano and Universidad Politecnica de Catalunya, in two parallel studies.
- 03/4202 - Feasibility study for a spacecraft navigation system relying on pulsar timing information. Carried out by Universidad Politecnica de Catalunya.
- 03/5101 - Natural Language Techniques in Support of Spacecraft Design. Carried out by University of Roma Tor Vergata.
- 03/6101 - EAP-based artificial muscles as an alternative to space mechanisms. Carried out by Pisa University and Reading University in two parallel studies.
- 03/6201 - Biologically inspired solutions for robotic surface mobility. Carried out by Helsinki University.
- 03/6501 - Mammalian Hibernation Mechanisms: Relevance to a Possible Human

Hypometabolic Induced State. Carried out by Verona University.

- 03/9102 - Environmental impacts of high power density microwave beams on different atmospheric layers. Carried out by Leicester University.

But things will not stop here, of course. We are now preparing the next Call for Proposals (CFP 04/01), and for the first time we will also release a Call for Ideas (CFI 04/01). Our target is to open the invitation to university-based research groups in early June; those of you who are subscribed to this newsletter will receive more detailed information soon.

We are looking forward to having new opportunities to work along with you, and we will do our best to make this cooperation become better all the time.

Andrés Gálvez
Head, Advanced Concepts Team

SPACE TECHNOLOGY NEWS

This section contains links to studies and contracts related to ESA and advanced space technology and of relevance to Academia.

Robotic assistance to human operations

The objective is to develop novel automation and robotics technologies with appropriate levels of autonomy and interaction to increase the efficiency of human operations, yet with a maintained crew health and performance. Intelligent tools and robotic devices (robotic assistants) shall prepare, enable, support, amplify, and protect the human functions of perception, cognition, planning, locomotion, and actuation. Tender Status: Intended Price Range: > 500 kEuro. Responsible: Mr. Lutz.

http://emits.esa.int/emits/owa/emits_iitt.show_iitt?actref=03.129.01&user=anonymous

Very high specific impulse electrical propulsion

The activity shall encompass the design and manufacturing of a Xenon GIE with high Isp and the full characterisation of its performance by functional and environmental tests: Isp, thrust level, power-to-thrust ratio, electron backstreaming limit, plume/beam characterization, vibration/shock tests and electrical checkouts, and



thermal behaviour by thermal vacuum test under relevant environmental conditions. Subsequently, an endurance test shall be conducted. Tender Status: intended. Price Range: > 500 kEuro Responsible: Mr. Whitcomb.

http://emits.esa.int/Emits/Owa/Emits_iitt.Show_iitt?Actref=04.160.10&User=Anonymous

Advanced sunshields

This activity is to develop a new sunshield technology with improved electrostatic discharge (ESD) performance at low temperature to allow a better control of the temperature excursions of the antenna. Tender Status: Intended

Price Range: 100-200 kEuro. Responsible: Mr. Sandberg. More Information at:

http://emits.esa.int/emits/owa/emits_iitt.show_iitt?actref=04.153.69&user=Anonymous

SPACE TECHNOLOGY CONFERENCES

This section contains information of conferences of relevance to advanced space technology and some of the studies we are conducting.

2nd World Conference and Technology Exhibition on Biomass for Energy and Industry

The 2nd World Conference and Technology Exhibition on Biomass for Energy and Industry will take place in Rome 10-14 May 2004.

<http://www.conference-biomass.com>

OTHER ESA NEWS

25 March 2004 New Member States at ESA. The ESA Council has approved the accession of Greece and Luxembourg to the ESA Convention. The two countries are expected to become full members of the Agency by 1 December 2005.

11 June 2004 Cassini/Huygens fly-by of Phoebe

1 July 2004 Cassini/Huygens Saturn orbit insertion

ARIADNA IN SHORT

With Ariadna, ESA intends to strengthen the bond between Academia and ESA by providing opportunities to work in partnerships and making up-to-date information available on on-going ESA studies and advanced space technology news

relevant to the Academic World. Check <http://www.esa.int/gsp/ACT/index.html> for news or updates on coming Ariadna call for Proposals.