ARIADNA NEWSLETTER
FEBRUARY 2006
http://www.esa.int/ariadna

ARIADNA NEWS:
STUDIES AWARDED FOR CFP 05/01

Study awards have now been finalised for Ariadna CFP 05/01 following a successful call where more proposals were submitted than in any previous call. We would like to thank all the teams who submitted proposals and would encourage all to participate again. The following teams have been selected to be offered studies under the proposed study areas: -

- 05/2202 - Oxygen extraction from lunar regolith, Type of activity: Medium Study (4 months, 25 KEUR) - No studies awarded
- 05/2203 - Iron oxide extraction from lunar and Martian regoliths, Type of activity: Medium Study (4 months, 25 KEUR) - No studies awarded
- 05/3201 - Numerical simulation of the Helicon Double Layer Thruster Concept, Type of activity: Medium Study (4 months, 25 KEUR) - University of Padova
- 05/3202 - Advanced Concepts of Electromagnetic Generation, Confinement and Acceleration of High Density Plasma for Propulsion, Type of activity: Medium Study (4 months, 25 KEUR) - Politecnico di Torino
- 05/3203 - Electrodynamic tether microsats at the giant planets, Type of activity: Medium Study (4 months, 25 KEUR) - Universidad Politecnica di Madrid
- 05/4106 - Spiral Trajectories in Global Optimisation of Interplanetary and Orbital Transfers, Type of activity: Medium Study (4 months, 25 KEUR) - University of Glasgow
- 05/4107 - Electrostatic forces for satellite swarm navigation and reconfiguration, Type of activity: Medium Study (4 months, 25 KEUR) - Surrey University & University of Bremen
- 05/4108 - The Flower Constellation Set and its possible applications, Type of activity: Extended Study (6 months, 35 KEUR) - University of Rome 'Tor Vergata'
- 05/4109 - Space Webs, Type of activity: Medium Study (4 months, 25 KEUR) - Royal Institute of Technology, Stockholm & University of Glasgow
- 05/5102 - Information extraction and presentation using interactive agent technologies and text mining tools, Type of activity: Medium Study (4 months, 25 KEUR) - No studies awarded
- 05/5103 - Formal knowledge representation of the system level spacecraft design domain, Type of activity: Medium Study (4 months, 25 KEUR) - No studies awarded
- 05/5201 - The application of clouds for modelling uncertainties in robust space system design, Type of activity: Medium Study (4 months, 25 KEUR) - University of Wien
- 05/6203 - Bio-inspired distributed system for thermal (or particles) transport, Type of activity: Extended Study (6 months, 35 KEUR) - University of Pisa
- 05/6401 - Strain sensors inspired by campaniform sensilla, Type of activity: Medium Study (4 months, 25 KEUR) - University of Bath
- 05/6402 - Non invasive brain-machine interfaces, Type of activity: Short Study (2 months, 15 KEUR) - University of Pisa 'Scuola Superiore Sant'Anna', University of Pisa 'E. Piaggio' & EPFL, IDIAP

More results are arriving from CFP 04/01. Again, we would like to thank the involved universities for their hard work and present their latest products: -

04/1201 Relativistically invariant description of the Feigel process for the extraction of momentum from the vacuum.
Final Report by University of Cologne
Final Report by University of Grenoble
More Information

04/2301 - Biomass-based fuel cells for manned space exploration
Final Report by Wageninge University
Final Report by University of Helsinki
More Information

04/2301 - Sponge iron process for manned space exploration
Final Report by TU Graz
More Information

04/3102 Assessment of Open Magnetic Fusion for Space Propulsion.
Final Report by University of Rome "La Sapienza"
More Information

04/4104 A search for invariant satellite motion.
Final Report by University of Rome
Final Report by University of Reading
More Information

We would like to encourage those interested to suggest ideas for the next Ariadna call for proposals, which we hope will be released in the middle of this year. You can contact us at ACT@esa.int with your thoughts.

ACT NEWS

Thinking out of the box: how to challenge conventional space systems

Spacecraft must evolve. Advancing space research

European Space Agency
Agence Spatiale Européenne

ESTEC
ACT, EUI-ACT, Keplerlaan 1 - 2201 AZ Noordwijk - The Netherlands
Tel. +31 (0)71 565 5174 - Fax +31 (0) 71 565 8018

is no longer just about swapping old components for new, now it is about entirely rethinking what a space mission can do and how it achieves its goals. World experts are gathering at ESA on February 21 to exchange new ideas and stimulate unconventional thinking.
http://www.esa.int/gsp/ACT/news_InnSysConcepts.htm

ESA and ANU Make Space Propulsion Breakthrough
The European Space Agency and the Australian National University have successfully tested a new design of spacecraft ion engine that dramatically improves performance over present thrusters and marks a major step forward in space propulsion capability.
http://www.esa.int/gsp/ACT/news_thruster.htm

ACT Global Optimisation Competition
The competition having been concluded successfully with many interesting results from a range of industrial and academic teams, the results can now be viewed online at: -
http://www.esa.int/gsp/ACT/mission_analysis/goresults.htm

ACT Podcasts: A New Way to Keep Track of Activities in the Advanced Concepts Team
The ACT has begun production of podcasts relating to areas of research ongoing in the ACT. You can add the following link to your podcast reader to subscribe to the feed and be kept up to date on all new episodes, or download individual episodes from the ACT website.
http://www.esa.int/gsp/ACT/podcast/podcast.xml
Alternatively, if you're using iTunes you can subscribe by following this link: [iTunes]

ESA INVITATIONS TO TENDER

Periodically the European Space Agency issues Invitations To Tender (ITTs) on a broad range of domains and activity types, ranging from scientific and technical studies, to technology development activities or even basic infrastructure support services. A comprehensive list of both the intended and currently open ITTs can be accessed at http://emits.esa.int/. Below is our small selection of some that could be of particular relevance to universities and academic researchers:

FORMATION FLYING CONTROL AND AVIONICS
The main objectives of the proposed activity are therefore: (i) analysis of autonomous failure detection, isolation and recovery (FDIR) methods for distributed spacecraft allowing stand-alone operation in case of inter-spacecraft communication and/or formation sensor/faults and definition of distributed FDIR system including required software, hardware and architecture, (ii) investigation of analytical redundancy techniques that provide graceful degradation of the formation, (iii) simulated investigation of the transition from de-centralised GNC architecture to a centralised one, and (iv) real-time performance evaluation of a candidate decentralised / centralised GNC system, inc. FDIR and formation mission management functions, with RF / optical metrology subsystem units (elegant breadboard) in-the-loop.
Tender Status: Intended. Price Range: 200-500 kEuro. More Information at:
http://emits.esa.int/emits/owa/emits_iitt.show_iitt?actref=04.1EC.07&user=Anonymous

A PHYSICAL MODEL FOR ANALYSING THE GEOMETRIC ERRORS OF REMOTE SENSING IMAGERY
The work performed in the frame of the GSP study will consist in implementing a detailed model of an automatic geo-localisation system. This model will permit to determine which are the geo-localisation accuracies achievable using current and foreseen technologies, and to define the required procedures to exploit AOCS (Attitude and Orbit Control System) and ground elevation information.
Tender Status: Issued. Price Range: 200-500 kEuro. More Information at: -
http://emits.esa.int/emits/owa/emits_iitt.show_iitt?actref=06.197.12&user=Anonymous

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/ariadna for news or updates on coming Ariadna call for Proposals.

European Space Agency
Agence Spatiale Européenne

ESTEC
ACT, EUI-ACT, Keplerlaan 1 - 2201 AZ Noordwijk - The Netherlands
Tel. +31 (0)71 565 5174 - Fax +31 (0) 71 565 8018