42nd International Conference on Environmental Systems (ICES)

15–19 July 2012
Hilton San Diego Resort and Spa
San Diego, California
www.aiaa.org/events/ices

Call for Papers
Abstract Deadline: 15 November 2011

Organized by
American Institute of Aeronautics and Astronautics (AIAA)

Supported by
AIAA Life Sciences and Systems Technical Committee
AIAA Space Environmental Systems Program Committee
American Institute of Chemical Engineers (AIChE) Environmental Systems Committee
American Society of Mechanical Engineers (ASME) Crew Systems Technical Committee
ICES International Committee (INT)
The 42nd International Conference on Environmental Systems (ICES) will be held 15–19 July 2012 at the Hilton San Diego Resort and Spa, in San Diego, California. The conference is organized by the American Institute of Aeronautics and Astronautics (AIAA), and supported by the American Institute of Chemical Engineers (AIChE), the American Society of Mechanical Engineers (ASME), and the ICES International Committee (INT). The conference will cover the following topics related to humans living and working in hostile environments with applications inside or outside of terrestrial or outer space habitats or vehicles: aerospace human factors; environmental control and life-support system technology; environmental monitoring and controls; planetary protection; EVA system technology; life sciences; planetary habitats and systems; and thermal control systems technology for both manned and unmanned vehicles. The conference is open to participants from any nation, from academic, government, or industry organizations. There will be four days of technical presentations, with approximately 50 sessions.

**IMPORTANT DATES**

- Abstract Deadline: 15 November 2011
- Author Notification: 5 January 2012
- Draft Manuscript Deadline: 22 March 2012
- Final Manuscript Deadline: 27 June 2012
Conference General Chair Dave Williams and Vice Chair Andrew Jackson announce that the Program Committee will be accepting abstracts until 15 November 2011 for the following technical topics:

- **ICES101: AIAA SES** Spacecraft and Instrument Thermal Design, Testing, and Technology
  This session presents thermal design, testing, and on-orbit performance of near-earth and interplanetary unmanned/robotic spacecraft, instruments, and payloads, and the application of key new technologies.
  Organizers:
  Wes Ousley, NASA Goddard Space Flight Center  
  wes.ousley@nasa.gov
  Joe Gasbarre, NASA Langley Research Center
  Jose Rodriguez, NASA Jet Propulsion Laboratory
  Dave Wasson, Orbital Sciences Corporation

- **ICES102: AIAA SES** Thermal Control for Planetary Surface Missions and Systems
  This session focuses on passive and active thermal control for planetary surface missions and systems such as Mars rovers, comet rendezvous systems, surface mapping and science instruments and systems, and in-situ resource mapping and processing.
  Organizers:
  Gaj Birur, NASA Jet Propulsion Laboratory  
  gbirur@jpl.nasa.gov
  Paul McElroy, Touchstone Research Laboratory

- **ICES103: AIAA SES/INT** Thermal and Environmental Control of Exploration Vehicles and Surface Transport Systems
  This session covers environmental control, thermal control (passive and active) and thermal protection topics for vehicles used to transport crew and cargo to/from the moon, Mars, and asteroids, with emphasis onlanders and surface crew transport vehicle systems. Papers on related systems within the U.S. and international programs are welcome. Potential topics include encountered space environment, thermal and environmental control and life support requirements, design, analysis, verification, and testing.
  Organizers:
  Gualtiero Brambati, Thales Alenia Space  
  gualtiero.brambati@thalesaleniaspace.com
  Tom Leimkuehler, Paragon Space Development Corporation  
  thomas.o.leimkuehler@nasa.gov
  Burkhard Behrens, Astrium Space Transportation
  Joe Roman, NASA Marshall Space Flight Center
  Ryan Stephan, NASA Johnson Space Center

- **ICES104: AIAA SES/INT** On-Orbit Operations and Logistics of Thermal and Environmental Control Subsystems
  This session focuses on operations and logistics aspects of thermal and environmental control subsystems for on-orbit spacecraft.
  Organizers:
  Zoltan Szigtvari, Astrium Space Transportation  
  zoltan.szigtvari@astrium.eads.net
  Andrea Ferrero, Thales Alenia Space

- **ICES105: AIAA SES/INT** Thermal and Environmental Control and System Integration for Surface Habitats
  This session focuses on passive and active thermal control and life support for surface habitats. Included is the system engineering that integrates those functions with rovers, EVA systems, and surface utilities. Other potential topics include the transition from exploration to habitation, base heat rejection, dust mitigation, extreme long duration environment characterization, and advanced technologies to address habitat functionality.
  Organizers:
  Darius Nikanpour, Canadian Space Agency  
  darius.nikanpour@csc.ca
  Joe Chambliss, NASA Johnson Space Center  
  joe.p.chambliss@nasa.gov

- **ICES106: AIAA SES/INT** Space Station and Manned Orbiting Infrastructures Thermal Control
  This session addresses thermal control on board the current Space Station and future long term, manned (or man-tended) orbiting habitats, platforms, laboratories, and small scale prototypes. Topics range from system and component issues with the space station thermal control systems to thermal aspects of payloads and experiments that utilize the station as a science platform or as a test bed for future exploration applications, including advanced thermal control solutions and/or techniques.
  Organizers:
  Andrea Ferrero, Thales Alenia Space  
  andrea.ferrero@thalesaleniaspace.com
  Gary Adamson, Hamilton Sundstrand

Benefits to Submitting a Paper:

**NETWORK** Build your professional network when you interact with peers and colleagues during your paper presentation.

**WORLDWIDE EXPOSURE** Your paper will be added to the AIAA Electronic Library, the largest aerospace library in the world for finding aerospace research. More than 2 million searches are performed every year with 150 institutions as subscribers!

**RESPECT** When you publish with AIAA, you know that your name is connected with the most prestigious publications in the aerospace field.

**PRAISE** Receive recognition from your peers and community.
Structures for Exploration

Thermal Control Technology

This session addresses thermal and environmental control engineering analysis, including associated analysis methods, algorithms, modeling, software tools, integration with other engineering disciplines, and data exchange.

Organizers:
Oliver Pin, European Space Agency
olivier.pin@esa.int

Brian Briggs, Orbital Sciences Corporation

Nick Teti, Hawk Institute for Space Sciences

Henry Bouquet, ITP Engines UK

ICES108: SES/INT Advances in Thermal Control Technology

This session addresses novel or advanced technologies and development activities pertaining to heat acquisition, transport, rejection, and storage, as well as cryogenic cooling and thermal protection systems not specific to any existing or future scientific instruments, spacecraft, or planetary systems. Some examples include advanced insulation, “smart” optical coatings, nanoparticle-based heat transfer enhancements, and multifunction thermal materials.

Organizers:
Jeff Farmer, NASA Marshall Space Flight Center
jeffery.t.farmer@nasa.gov

Matthias Holzwarth, Astrium Space Transportation,
matthias.holzwarth@astrium.eads.net

Richard Brier, ONES

Jeff Farmer, NASA Marshall Space Flight Center

Brian O’Connor, NASA Marshall Space Flight Center

Olivier Pin, European Space Agency

Ryan Stephan, NASA Marshall Space Flight Center

ICES109: AIAA SES Space Structures for Exploration

This session addresses the efficient use of in-situ resources as well as the application of reduced mass storable/deployable structures to space and planetary exploration. Environmental robustness, effective storage, and the use/transformation of native resources will be considered as integral parts of these technologies, which range from materials and components to full scale structures.

Organizers:
Paul McElroy, Touchstone Research Laboratory
pmm@trl.com

Rick Helms, NASA Jet Propulsion Laboratory

ICES110: AIAA SES Thermal and Environmental Control of Commercial Spacecraft

This session focuses on the thermal and environmental control aspects of commercial venture, crewed, or robotic spacecraft and systems.

Organizers:
Nick Teti, Hawk Institute for Space Sciences
nicholas.m.teti@nasa.gov

Brian Briggs, Orbital Sciences Corporation

ICES111: AIAA SES Thermal Standards and Design/Development Practices

This session focuses on current and future efforts and needs for development of spacecraft thermal control standards and reference documents dealing with such areas as design, analysis, testing, equipment, specifications, and processes. These standards might be dedicated to a specific company or applicable to entire programs like Constellation or agencies like NASA.

Organizers:
Eric Grob, NASA Goddard Space Flight Center
eric.w.grob@nasa.gov

Joe Gasbarre, NASA Langley Research Center
Art Avila, NASA Jet Propulsion Laboratory

ICES112 AIAA SES/LS&S Orbital Debris Mitigation

Organizers:
Eric Grob, NASA Goddard Space Flight Center
Mary Christine Desjean, ONES

ICES113 AIAA SES Spacecraft Propulsion Systems Thermal Control

Organizers:
Joe Chambiris, NASA Johnson Space Center
Jose Roman, NASA Marshall Space Flight Center

ICES114 AIAA SES Thermal Control of Space Nuclear Power Systems

Organizers:
Jose Roman, NASA Marshall Space Flight Center
Joe Chambiris, NASA Johnson Space Center

ICES200: INT Physico-Chemical Processes: Air and Water

This session covers technology studies, design, development, manufacturing, integration, testing and operations experience in the areas of water regeneration and treatment, air renewal and cleaning, human waste recycling, energy storage and transformation, and in-situ resource utilization, which apply physico-chemical processes.

Organizers:
W. Rautschen, EADS Astrium GmbH Space Transportation
willi.gert.rautschen@astrium.eads.net

L. Bobe, NIIHMASS

CESare Labascio, Thales Alenia Space Italia S.p.A.

ICES201: INT Two-Phase Thermal Control Technology

This session presents the latest developments and innovations of two-phase heat transport systems, modelling techniques, and on-orbit performances for space applications. It covers all variants of heat pipe technologies, capillary pumped loops, and loop heat pipes.

Organizers:
Darius Nikanpour, Canadian Space Agency
Darius.Nikanpour@esc-csa.gc.ca

F. Bodendiek, OHB System AG
T. Kaya, Carleton University
A. Torres, IberEspacio S.A.

ICES202: INT Satellite, Payload, and Instrument Thermal Control

This session covers the development and design of thermal control systems for satellites, payloads, and instruments.

Organizers:
Patrick Hugonnat, Thales Alenia Space
patrick.hugonnat@thalesaleniiaspace.com

Marco Molina, Carlo Gavazzi Space

Hiroyuki Ogawa, Japan Institute of Space and Astronautical Science

Johannes van Es, NLR

ICES203: INT Thermal Testing

The thermal testing session focuses on all aspects of thermal tests, test methods, test correlation, and test facilities. Tests for all kinds of spacecraft, instruments, equipment, and materials are of interest. Special attention is given to sharing lessons learned from thermal test and test analysis and correlation activities, and also to innovative test methods, set-ups, and approaches to testing and verification of the hardware and of the analysis.

Organizers:
Gerd Jahn, EADS Astrium GmbH
gerd.jahn@astrium.eads.net

S. Price, EADS Astrium GmbH

H. Mizuno, JAXA

ICES204: INT/AIAA LS&S Bioregenerative Life Support

This session focuses on the design and development of ground-based facilities and experiments, and flight hardware designs and experiments associated with integrated systems which incorporate biological, physical, and chemical processors.
Support Sensor and Control Technology

**ICeS301: AIChe**
Brian Dunaway, The Boeing Company
Nikolay Ivanov, Saint Petersburg State Polytechnic
Chang H. Son, The Boeing Company

Organizers:
Abhijit V. Shevade, NASA Jet Propulsion Laboratory
Abhijit Shevade@jpl.nasa.gov
Darrell L. Jan, NASA Jet Propulsion Laboratory
Timo Stoffler, Kayiss-Threde GmbH

This session includes papers describing approaches to monitoring water and air in enclosed habitats, thermal control of habitats, chemical sensors and sensing devices for detection of chemical constituents in water and air, and systems and system concepts for environmental monitoring and control.

**ICeS302: AIChe**
ECLSS Thermal Modeling and Test

This session reports on applications of and advances in modeling physiochemical and biochemical life support processes, as well as in numerical modeling of atmospheric pressure, cabin ventilation, and composition distributions in closed space habitats such as the International Space Station, the deep exploration spacecraft, the lunar habitat, and commercial crewed and cargo space transport vehicles.

Organizers:
Chang H. Son, The Boeing Company
chang.h.son@boeing.com
Nikolay Ivanov, Saint Petersburg State Polytechnic
University, Russia
Brian Dunaway, The Boeing Company

**ICeS303: AIChe**
Advanced Life Support Systems Control

The Advanced Life Support Systems Control session reports on advanced life support system control topics, such as controller technology; control theory and application; autonomous control; integrated system control; control software; and modeling, simulation, and emulation for control development.

Organizers:
David Kortenkamp, TRAC Labs Inc.
korten@traclabs.com
Chang H. Son, The Boeing Company

**ICeS304: AIChe**
Development for Space Missions and Terrestrial Applications

This session focuses on NASA derived technologies that have terrestrial applications towards air purification, water treatment, and solid waste management. Papers should clearly demonstrate the original NASA application and conclude with the modifications taken to transform the original technology for terrestrial applications. In addition, papers should cover the terrestrial market, bench-scale, and pilot/full-scale data if available. Papers that discuss the development of terrestrial applications that have potential for NASA applications are also solicited.

Organizers:
David Mazzyck, University of Florida
dmazzyck@ufl.edu
Kristen Riley, University of Florida

**ICeS305: AIChe**
In-Situ Resource Utilization

This session addresses research and development issues in utilization of in-situ lunar, planetary, and asteroidal resources to produce consumables and propellants for future human or robotic space missions. Presentations will include, but are not limited to, hardware development and testing, system integration, trade studies, process simulations, and ISRU reliability and safety.

Organizers:
Tim Nalette, Hamilton Sunstrand
t.nalette@hs.utc.com
Jean Hunter, Cornell University

**ICeS306: AIChe/ASME**
Environmental and Thermal Control for Commercial Crewed and Cargo Transport Spacecraft

This session seeks papers that describe the environmental control and thermal control systems and subsystems being developed for commercial suborbital and orbital crewed spacecraft and commercial cargo transport vehicles, the differences in driving requirements for these commercial vehicles as compared to traditional governmental spacecraft, and reliable but cost-efficient design solutions.

Organizers:
Barry Finger, Paragon Space Development Corporation, bfinger@paragonsdc.com
Chang H. Son, The Boeing Company
David Williams, NASA Johnson Space Center

**ICeS307 AIChe/AIAA LS&S**
Orion Multi-Purpose Crew Vehicle Environmental Control and Life Support System

This session addresses Crew Exploration Vehicle current configuration and status.

Organizers:
John Lewis, NASA Johnson Space Center
john.l.lewis@nasa.gov
Grant Anderson, Paragon Space Development Corporation
Tim Nalette, Hamilton Sunstrand

**ICeS308: AIChe**
Education and Outreach

The Education and Outreach session features papers that link human activities in space with human activities on earth. The
session provides educators the opportunity to share experiences and present the most recent methodologies for linking students and the general public to human exploration of space.
Organizers:
Jean Hunter, Cornell University
jean.hunter@cornell.edu
Dean Muirhead, Barrios Technology

**ICES400: ASME Extravehicular Activity: Space Suits**
This session covers topics related to space suit pressure garments. It includes advanced development work, as well as ongoing efforts towards the Constellation Program flight space suit design.
Organizers:
Lindsay T. Aitchison, NASA Johnson Space Center lindsay.t.aitchison@nasa.gov
Kate Mitchell, NASA Johnson Space Center

**ICES401: ASME/AIAA LS&S Extravehicular Activity: Systems**
This session includes topics describing aspects of EVA systems, technologies, and studies that envision the space suit as a system. Concepts and testing of advanced space suit systems are also included.
Organizers:
Robert Trevino, NASA Johnson Space Center robert.c.trevino@nasa.gov

**ICES402: ASME Extravehicular Activity: PLSS Systems**
This session covers topics describing design studies and new technology development or significant experience and lessons learned with existing systems in the area of portable life support systems and associated support hardware. Also, this session will deal with emerging technology and concepts relating to Orion or other Constellation systems.
Organizers:
Edward W. Hodgson, Hamilton Sundstrand
ed.hodgson@hs.utc.com
Bruce Webbon, NASA Ames Research Center

**ICES403: ASME Extravehicular Activity: Operations**
This session addresses EVA operational activities associated with the Space Shuttle, the International Space Station (ISS), and future human spacecraft. Lessons learned on the logistics, maintenance, and conduct of EVA operations that may apply to the future of EVA are also of interest.
Organizer:
Bill West, Hamilton Sundstrand william.w.west@nasa.gov

**ICES404: ASME International Space Station ECLS: Systems**
This session addresses ECLS System issues and lessons learned from the International Space Station.
Organizers:
Gregory Gentry, The Boeing Company
gregory.j.gentry2@boeing.com
David Williams, NASA Johnson Space Center
Zoltan Szeghvari, Astrium Space Transportation

**ICES405: ASME International Space Station ECLS: Air and Water Systems**
This session addresses ECLS water and air issues and lessons learned from the International Space Station.
Organizers:
Gregory Gentry, The Boeing Company
gregory.j.gentry2@boeing.com
David Williams, NASA Johnson Space Center
Zoltan Szeghvari, Astrium Space Transportation

**ICES406: ASME Human/Robotics System Integration**
This session addresses the design and development of robotics for space exploration and how these robotic systems will work together with humans.
Organizer:
Loel Goldblatt, Hamilton Sundstrand
loel.goldblatt@hs.utc.com
Shane McFarland, Wyle

**ICES407: ASME/AIAE Life Support Water/Air Quality: Maintenance and Monitoring**
This session addresses recent developments in spacecraft air and water quality monitoring technology.
Organizers:
John Schultz, Wyle Laboratories
john.r.schultz@nasa.gov
Darrell Jan, NASA Jet Propulsion Laboratory
John Straub, Wyle Laboratories

**ICES408: ASME Regenerative Life Support Processes and Systems**
This session addresses recent developments of regenerative life support processes and systems for spacecraft.
Organizers:
Loel Goldblatt, Hamilton Sundstrand
loel.goldblatt@hs.utc.com
Tim Nalette, Hamilton Sundstrand
Morgan Abney, NASA Marshall Space Flight Center

**ICES409: ASME Airliner Cabin Air: Monitoring, Control, and Environmental Health Issues**
This session addresses recent developments in airliner cabin air monitoring, control, and environmental health issues.

Organizers:
Ruel Overfelt, Auburn University
ruelf@auburn.edu
David R. Space, The Boeing Company

**ICES500: AIAA LS&S Life Science/Life Support Research Technologies**
This session emphasizes research technologies to support astrobiology, habitation and life support system design. Life sciences-related hardware developments, experiment designs, and flight experiment results for manned spacecraft, unmanned systems such as free flying platforms and planetary spacecraft, and terrestrial analogs will be presented.
Organizer:
Bob Morrow, Orbital Technologies Corporation (ORBITEC), morrow@orbitec.com

**ICES501: AIAA LS&S Life Support Systems Engineering and Analysis**
This session addresses life support for future crewed space missions, including defining systems architecture and selecting technology options. Life support systems engineering and analysis should help guide overall design and selection, development, and integration of technologies to produce complete systems.
Organizers:
Harry Jones, NASA Ames Research Center
hjones@mail.arc.nasa.gov
John Hogan, NASA Ames Research Center

**ICES502: AIAA LS&S Space Architecture**
This session focuses on the application of architectural principles to the design of facilities beyond Earth, to provide for comfortable lodging, productive work, and enjoyment of life, in full recognition of the technical challenges presented by the environment.
Organizer:
Ondrej Doule, International Space University
doule@isu.isunet.edu
Tedd Hall, University of Michigan

**ICES503: AIAA LS&S Radiation Issues for Space Flight**
This session addresses major issues in space radiation and analysis, tools, and research that are being developed and applied to support the space exploration initiative to insure astronaut radiation protection and safety.
Organizers:
Bill Atwell, The Boeing Company
william.atwell@boeing.com
Lawrence Townsend, University of Tennessee
ICES504: AIAA LS&S  
Management of Air Quality in Sealed Environments  
This session enables experts who manage submarine, spacecraft, and airliner air quality to share new research findings on the control of air pollutants in these sealed or semi-sealed environments to include air quality standards, hazards associated with specific compounds, and monitoring of those compounds to protect the health of crew and passengers.

Organizers:  
John James, NASA Johnson Space Center  
John.t.james@nasa.gov  
Thomas Limero, Wyle Laboratories

ICES505: AIAA LS&S/ASME  
Microbial Factors Applied to Design  
This session focuses on the dynamic effects of microorganisms on materials and systems in order to minimize hardware performance issues.

Organizers:  
Monserrat Roman, NASA Marshall Space Flight Center monsi.roman@nasa.gov  
Rebekah Juan Bruce, Wyle Laboratories  
Letty Vega, Jacobs Technology

ICES506: AIAA LS&S  
Human Exploration Beyond Low Earth Orbit: Missions and Technologies  
There are many potential destinations for human exploration beyond Low Earth Orbit (LEO), each with specific mission requirements, capabilities, and other attributes that may be common or unique. This session addresses mission designs, technology needs, vehicle systems and analyses for sending humans to destinations beyond LEO including geosynchronous orbit, libration points, the moon, near Earth objects (comets and asteroids), Mars, and its moons. Relevant subjects include mission requirements, concepts and architectures, technology development needs, challenges and gaps, and candidate system designs. Special attention will be given to Environmental Control and Life Support Systems (ECLSS), habitability, unique environmental considerations, and architectures.

Organizers:  
Dan Barta, NASA Johnson Space Center david.l.urban@nasa.gov  
James Charette, Carnegie Mellon

ICES507: AIAA LS&S  
Human Factors for Space Missions Ground and Flight Operations  
This session presents human factors topics applicable to space missions with special emphasis on ground assembly, deployment, logistics, maintenance, and operations for both Earth-bound preflight as well as extraterrestrial planetary missions. Topics may include (but are not limited to) procedures, tools, human-automation interaction, remote operation, team performance, design assessment techniques, translating test results into design, temporary structures for preflight ground assembly, and training. The session will include papers reporting research as well as descriptions of design, methods, tools, and lessons learned or past successes.

Organizer:  
Jennifer Blume, Raytheon jennifer.l.blume@raytheon.com

ICES508: AIAA LS&S  
Mars and Beyond  
This session is dedicated to general matters concerning Mars: the environment and surroundings encountered on the planet; vehicles and vehicle behavior; problems and solutions found to sustain this particular environment; and various Mars-related technologies.

Organizers:  
Marie-Christine Desjean, CNES marie-christine.desjean@cnes.fr  
Andrew Jackson, Texas Tech University

ICES509: AIAA LS&S  
Fire Safety in Spacecraft and Enclosed Habitats  
This session covers all aspects of fire safety in closed environments including prevention, detection, and suppression. Relevant subjects include material controls for fire prevention; fire suppression; fire detection; fire signatures and toxicity; post-fire cleanup; risk assessment; material selection; fire related combustion research; lessons learned and design status of current systems; and life support and control system designs to enable fire detection and suppression. Applicable environments include EVA suits; past, present, and future space transportation vehicles; different gravitational levels; extraterrestrial habitats; aircraft; ships; and submarines.

Organizers:  
David Urban, NASA Glenn Research Center david.l.urban@nasa.gov  
James Russell, Lockheed Martin Corporation  
Gary A. Ruff, NASA Glenn Research Center

ICES510: AIAA LS&S  
Lunar and Martian Dust Properties and Mitigation Technologies  
This session focuses on the properties and mitigation technologies for lunar and Martian dust. The effects of dust will pose significant challenges to space operations for crewed and robotic missions. Papers are solicited on mitigation strategies for life support systems and dust encountered in planetary surface environments. Mitigation strategies may involve cleaning and repelling approaches for the protection and nominal performance of susceptible hardware, and the capture and filtration of airborne lunar dust that may enter the pressurized volumes of spacecrafts and habitats. Measurements of lunar and/or Martian dust properties that provide engineering data for the development of mitigation technologies are also of interest. This session will bring together government, industrial, and academic participants in the space research and technology development community to present their ideas and concepts on this focused topic.

Organizers:  
Juan H. Agui, NASA Glenn Research Center juan.H.Agui@nasa.gov  
Mark Hyatt, NASA Glenn Research Center

ICES511: AIAA LS&S  
Mission Assurance and Reliability Techniques for Environmental Systems  
This session covers testing and analysis for system reliability and maintainability. Relevant subjects include verification and validation, risk assessment, accelerated life testing and aging, environmental screening, and qualification testing. Special attention is given to failure modes and mechanisms associated with electronic devices, mechanical assemblies, chemical processing, and biological systems.

Organizers:  
Todd H. Treichel, Orbital Technologies Corporation (ORBITEC), treichel@orbitec.com  
Greg Davis, NASA Jet Propulsion Laboratory

ICES512: AIAA LS&S  
Human Rating for Space Systems  
This session engages industry, government, and academia in the definition and analysis of safety and mission assurance parameters as they relate to the design and operations of spacecraft intended for human occupancy. One key objective is to assess the relevancy and commonality of requirements and policies for NASA and FAA commercial human spaceflight missions.

Organizers:  
Dave Klaus, University of Colorado, klaus@colorado.edu  
Rene Rey, FAA

ICES600  
Other  
If you are not sure of the best placement for your abstract, please submit to ICES600.
Abstract Submittal Guidelines

Authors who wish to contribute a paper to the conference must submit a 300-word abstract by 15 November 2011. Papers should present technical developments and progress in any of the fields of environmental systems listed in this Call for Papers and should make a new and original contribution to the state of the art, or be a constructive review of the technical field. Authors need not be affiliated with any of the co-sponsoring societies.

Papers proposed will be evaluated solely on the basis of their suitability for inclusion in the program. Please note that only written papers will be accepted, except for sessions indicated as panels.

Abstract Submittal Procedures

Abstract submissions will be accepted electronically through the AIAA Web site at www.aiaa.org/events/ices. From the conference Web site, click "Submit a Paper" in the right-hand menu and follow the instructions for submission. This Web site will be open for abstract submittal starting 1 August 2011. The deadline for receipt of draft manuscripts and abstracts via electronic submission is 15 November 2011. Authors will be notified of paper acceptance via e-mail by 5 January 2012. An Author’s Kit, containing detailed instructions and guidelines for submitting papers to AIAA, will be made available to authors of accepted papers.

Authors of accepted papers must provide a draft manuscript by 22 March 2012. Authors of accepted draft manuscripts must then provide a complete manuscript online to AIAA by 27 June 2012 for inclusion in the online proceedings and for the right to present at the conference. It is the responsibility of those authors whose papers or presentations are accepted to ensure that a representative attends the conference to present the paper. This policy is intended to improve the quality of the conference for attendees.

International Traffic in Arms Regulations (ITAR)

Speakers and attendees are reminded that some topics discussed in the conference could be controlled by the International Traffic in Arms Regulations (ITAR). U.S. nationals (U.S. citizens and permanent residents) are responsible for ensuring that technical data they present in open sessions to non-U.S. nationals in attendance or in conference proceedings are not export restricted by the ITAR. U.S. nationals are likewise responsible for ensuring that technical data they present in open sessions to non-U.S. nationals in attendance or in conference proceedings are not export restricted by the ITAR. U.S. nationals are likewise responsible for ensuring that technical data they present in open sessions to non-U.S. nationals in attendance or in conference proceedings are not export restricted by the ITAR.

“No Paper No Podium” Policy

If a written paper is not submitted by the final manuscript deadline, authors will not be permitted to present the paper at the conference. It is the responsibility of those authors whose papers or presentations are accepted to ensure that a representative attends the conference to present the paper. This policy is intended to improve the quality of the conference for attendees.

Adherence to this format is required.

Abstracts that do not adhere to this format will be rejected. Poster abstracts should be e-mailed as an attachment to Chang Son at chang.h.son@boeing.com by 20 June 2012. Authors will be notified of poster presentation acceptance by 27 June 2012. For questions on the student poster competition, please contact Chang Son at chang.h.son@boeing.com.

Student Poster Competition

The ICES poster session is a program targeted to stimulate the participation of students and provide an excellent forum for students to present their work in an informal and interactive setting. Posters are ideal for presenting speculative or late-breaking results, or for giving an introduction to interesting, innovative work. Posters are intended to provide students and ICES participants with the ability to connect with one another and discuss the work presented. Each poster will be judged on both the format of the poster and the student’s ability to convey the poster content to the judges. Each participating student will receive a ticket to Wednesday night’s banquet. University/college students are invited to submit abstracts on their proposed poster by 20 June 2012 per the abstract submittal procedures described to the left. The student’s abstract and poster should be pertinent to ICES; that is, they should follow the same theme of the general conference, focusing on humans living and working in hostile environments with applications inside or outside of terrestrial or outer space habitats or vehicles. Abstracts of approximately 300 words must include poster title, author name(s), mailing and e-mail addresses, phone and fax numbers, and university or college. The first author and the presenting author of the poster must be students. Abstracts must not be more than one page in length and must be double-spaced.

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AIAA is the world’s largest technical society dedicated to the global aerospace profession. With more than 35,000 individual members worldwide, and 90 corporate members, AIAA brings together industry, academia, and government to advance engineering and science in aviation, space, and defense.