SPONSORSHIP PACKAGE

CANEUS 2009 WORKSHOPS

International Collaborative Aerospace Development
Micro Nanotechnologies: From Concepts to Systems

March 1-6, 2009
NASA Ames Research Center,
Moffett Field, California

www.caneus2009.org

Contents

December 2008

Dear Potential Sponsor,

I am writing to you on behalf of the CANEUS 2009 Workshops Planning Committee. The CANEUS 2009 Workshops represent a unique and ambitious attempt to bring together the technologists, users, and funding communities from around the world involved in the development of Micro and Nano Technologies (MNT) for aerospace applications. MNT-based systems have the potential to revolutionize the aerospace industry; they have ultra-low mass and size and can deliver greater performance and functionality than traditional technologies.

The CANEUS 2009 Workshops seek to advance MNT development for the aerospace industry. Past conferences gave birth to CANEUS' ambitious Sector Consortia: international public/private partnerships between industry, university, and government stakeholders. These partnerships see members' resources pooled to focus on high-risk, high-cost projects and initiatives dedicated to Small Satellites, Fly-by-Wireless, Aerospace Reliability, Devices, and Materials. These Sector Consortia are mandated to address and develop standards for small satellites, guidelines for reliability testing, frequency spectra for wireless aircraft and spacecraft, and more.

The CANEUS 2009 Workshops will have a unique format which emphasizes, as its primary deliverable, the definition and implementation plans for technology infusion projects within the various aerospace industry segments mentioned above. The event aims therefore to significantly advance activities of all Sector Consortia within CANEUS International's organizational structure.

A diverse technical and management community, including policy makers and industry visionaries, will convene at NASA Ames next March to advance a vision of infusing emerging technologies into aerospace products and missions through cooperative development. CANEUS' Sector Consortia are recognized by the industry as a unique and promising vehicle mandated to achieve the adoption, adaptation, and accelerated commercialization of MNTs.

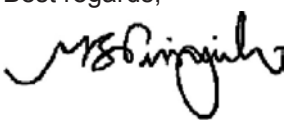
As a leader in your field, we request your sponsorship in making our collective goal a reality.

We believe that the CANEUS 2009 Workshops are synergistic with your corporate objectives and sponsorship of the event could provide you with direct influence on shaping future industry developments and subsequent product and process evolution. As a sponsor, you will also have the opportunity to participate in your pick of CANEUS' high-risk, high-cost international collaborative development projects without being subject to full membership dues. Sponsorship opportunities and benefits are outlined below.

The 2009 Workshops are being organized by representatives from CANEUS International and NASA Ames. Further information on the goals of CANEUS 2009 Workshops and the sponsorship opportunities follows. Please take a moment to look over this document and gain a better understanding of how your investment might benefit this world event.

It is our hope that your efforts will have considerable implications on the future of the aerospace industry. Thank you for your consideration in this matter.

Best regards,



Milind Pimprikar
Chairman
CANEUS International / CANEUS 2009 Workshops Planning Committee
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Why Sponsor? CANEUS: A Unique Model and Networking Platform

CANEUS has developed a unique model for transitioning Low Technology Readiness Level (TRL) into a high TRL by globally linking aerospace buyers with MNT developers. Program leaders, key scientists, engineers, decisionmakers, policy makers, and end-users from the following fields will all be present at CANEUS 2009:

1. Governmental policy makers and trade regulators;
2. Aircraft manufacturers and suppliers;
3. Space launchers, developers, and suppliers;
4. Defense systems, developers, and suppliers;
5. Nanotechnology developing laboratories, industries, government sectors, and educational institutions;
6. MEMS (Microsystems/Semiconductors) developers, testing laboratories, and applications.

CANEUS 2002, 2004, and 2006 each attracted decision makers from around the world in the aeronautics, space, and defense industries. International attendees comprised 65% of the total attendance and represented more than 24 countries. Each of these conferences provided an extensive networking platform for industry officials and offered a dynamic breeding ground for international partnerships. CANEUS 2009 promises much of the same diversity.

Indeed, whether you are looking for new spacecraft options or revolutionary defense systems, CANEUS 2009 offers your company or organization the ideal opportunity to be recognized by high-level representatives from all corners of the aerospace MNT industry. Here more than anywhere else you will be able to forge healthy, long-lasting partnerships that are in line with your company's objectives. By sponsoring CANEUS 2009, you can access the "Who's Who" from around the world who are affiliated with CANEUS activities. You would not only be investing in the growth of your own company, but in the sustainable progression of the aerospace MNT industry at large.

The CANEUS 2009 Workshops: An Overview

The CANEUS Workshops are the world's premier international event devoted to successfully transitioning emerging micro and nano technology (MNT) concepts to aerospace system applications.

The CANEUS 2009 Workshops will be held from March 1-6, 2009 at the facilities of the NASA Ames Research Center. NASA Ames is located in Moffett Field California in the heart of Silicon Valley; a hub of aerospace and nanotechnology activities, and the home of Lockheed Martin, Aero Astro, Loral, and Google, among a host of other industrial giants.

CANEUS 2009 is a world event bringing together a diverse technical and management community, including policy makers and industry visionaries, with the goal of infusing MNT into aerospace products and missions through international collaborative development.

The CANEUS 2009 Workshops program has a unique format which emphasizes the creation of specific definitions of project concepts and their implementation plans in each Sector Consortia as its primary objective. The event therefore aims to significantly advance activities of all Sector Consortia within CANEUS International`s organizational structure.

The program consists of twenty-one thematic panel discussions covering aerospace needs assessment, aerospace technology assessment, and programmatic investments and international collaboration. The objective is to provide participants and potential team members with an interactive, in-depth assessment of current aerospace end-user needs and state-of-the-art MNT developments, in order to stimulate focused work on project concepts definition and implementation during the intensive Sector Consortia workshop sessions.

The CANEUS 2009 program will also feature a CEO/CTO Panel on International Collaboration. CEOs and CTOs of major aerospace and defence manufacturers will debate and discuss the potential infusion of emerging nanotechnologies into the next generation of their aircraft, spacecraft, and defence applications. These policymakers will discuss how the aerospace community can influence future MNT investment by government agencies and private capital.

The CANEUS 2009 workshop sessions will provide an opportunity for participants to engage not only in the Sector Consortium in which they are currently active, but also to discover and participate in related projects coordinated by other Consortia. The role of the Sector Consortia in CANEUS International's overall mission of fostering coordinated international development will be demonstrated at these workshop sessions, where Consortia interests are expected to overlap and complement each other.

History

CANEUS 2009 builds upon the foundations established by CANEUS 2002 in Montreal, Canada, which witnessed the creation of the international collaborative aerospace development community. CANEUS 2009 further demonstrates the maturity of important themes developed during the CANEUS 2006 and 2004 conferences held in Toulouse, France, and Monterey, California, respectively. The CANEUS 2006 Conference generated tremendous interest within Canada, Europe, the US, and Japan for the development of a smoothly functioning technology development pipeline. A call for promising MNT concepts at the CANEUS 2004 Conference resulted in the submission and evaluation of 14 innovative concept topics. Five of these concepts have evolved into international collaborative Sector Consortia that will be discussed at the CANEUS 2009 Workshops.

For more information on the:

- CANEUS 2009 Workshops (NASA Ames, Moffett Field, California): www.caneus2009.org
- CANEUS 2006 Conference (Toulouse, France): www.caneus.org/2006
- CANEUS 2004 Conference (Monterey, USA): www.caneus.org/2004
- CANEUS 2002 Conference (Montreal, Canada): www.caneus.org/2002

Format of CANEUS 2009

Short Courses (1 day)

Short courses on relevant topical areas will be taught by world-class experts prior to the start of the Workshops. Instructors will provide the technical background in key areas and ensure the full and informed participation of attendees in the subsequent Workshops sessions. The CANEUS 2009 short courses will cover the following topics: "From Concept to Commercialization," "Aerospace Reliability: Manufacturing, Assembly, and Testing," "Small Satellites: Past, Present, and Future," "ITAR-Inter-Governmental Agreements, Flight Opportunities, Standards, Export Policy Restrictions, Environmental Safety," and "Funding and Financial Management for the CANEUS-Initiated Projects/Initiatives."

Workshops (5 days)

There are three broad themes that will be addressed during the panel sessions: Aerospace Needs Assessment, Aerospace Technology Assessment, and Programmatic Investments and International Collaboration. The panel sessions feature presentations addressing issues spanning the entire Technology Readiness Level (TRL) ladder from TRL 1 to TRL 9, affecting the transition of MNT concepts to operational aerospace systems. Speakers at the panel sessions are by invitation only and are world-experts representing America, Europe, and Asia-Pacific in the fields of MNT, aerospace, policy, and investment. Panel discussions immediately follow these short presentations in order to facilitate strong audience engagement in a Question and Answer format. These discussions, in turn, will contribute to the creation and refinement of Sector Consortia projects and their strategic work plans.

Exhibits

A broad range of exhibits covering the latest developments in MNT for aerospace systems representing end-user applications, technology products, and business development organizations will be held concurrently with the Workshop sessions.

Technical Tours

Technical tours to local end-user and technology provider facilities will showcase a cross-section of practical solutions relevant to the problems being addressed in the CANEUS Workshops.

CANEUS Grand Challenge

The CANEUS Competition is a biennial event that coincides with the CANEUS Conference or Workshops. For 2009, CANEUS, is launching the CANEUS Grand Challenge, which will be open to universities and research laboratories across the globe. The competition will require participants to submit a concept paper on a system that takes elements, components, or services from several of the CANEUS Sector Consortia, be it small satellites from the 1-100 kg range, fly-by-wireless systems or components, reliability issues, and innovative materials and devices. A CANEUS competition panel will review submissions and select a winner in advance of the CANEUS 2009 Workshops. The most innovative concept comprising elements from several of the Sector Consortia will be awarded a prize that will take the concept to products/systems level. The winner will present their paper during the event.

The "Who's Who" of the Aerospace MNT World

Keynote speakers at the Workshops are world-class leaders representing cutting-edge MNT research, system development, government and private investment, and aerospace end-users. We are pleased to announce that the following prestigious participants and their organizations have been invited to attend:

George Abbey
Baker Botts Senior Fellow in Space Policy at the Baker Institute
USA

Howard Alper
Chairman, Science, Technology & Innovation Council, Government of Canada
Canada

Marion Blakey
President of Aerospace Industry Association, USA

Doug Comstock
Director NASA Innovative Partnerships Program, USA

Doug Cooke
Deputy Associate Administrator for the Exploration Systems Mission Directorate, NASA
USA

The Honourable John Marburger
Science Advisor to the US President
USA

Michael O'Brien
Assistant Administrator External Relations, NASA
USA

Mihail Roco
Architect of National Nanotechnology Initiative, USA

Reinhard Schulte-Braucks
Director General, Space Research and Development
European Commission

Proposed Schedule

<table>
<tr><td>Time</td><td colspan="6">Sunday</td></tr>
<tr><td></td><td colspan="6">Short Courses</td></tr>
<tr><td rowspan="2">AM</td><td rowspan="3">Golf Tournament</td><td rowspan="2">Short Course Registration</td><td>Module 1</td><td>Module 2</td><td>Module 3</td><td>Module 4</td></tr>
<tr><td>From Concept to Commercialization</td><td>Aerospace Reliability: Manufacturing, Assembly, and Tests</td><td>Small Satellites: Past, Present, And Future (Related to Micro, Nano, and Pico Satellites)</td><td>ITAR-Inter-Governmental Agreements, Flight Opportunities, Standards, Export Policy Restrictions, Environmental, Safety</td></tr>
<tr><td rowspan="3">PM</td><td rowspan="3"></td><td></td><td></td><td></td><td>Part 2: Funding and Financial Management for the CANEUS-Initiated Projects/ Initiatives</td></tr>
<tr><td colspan="4">Short Course Conclusion</td></tr>
<tr><td colspan="4">Workshops Registration</td></tr>
</table>

Short Course Instructors include:

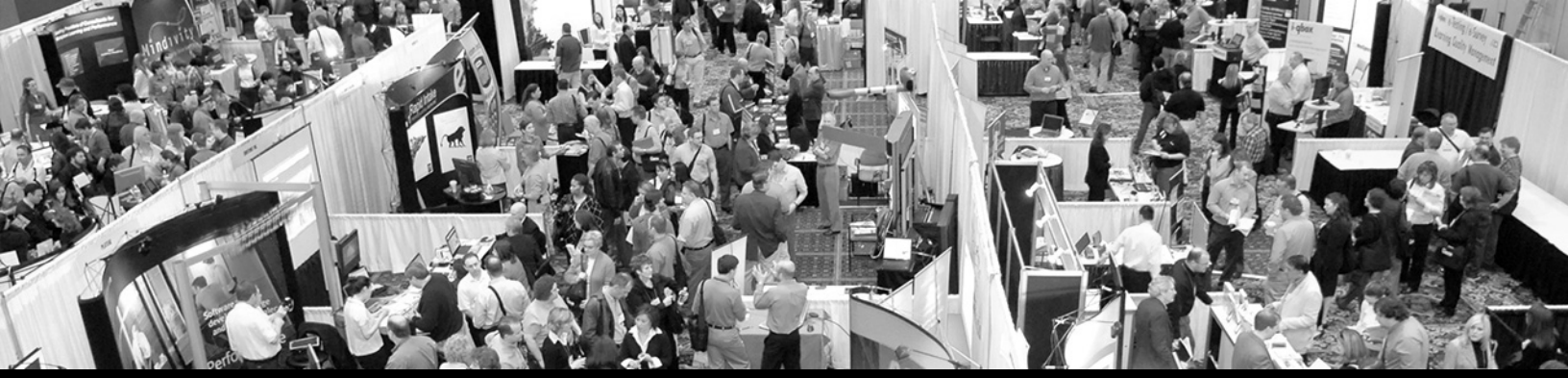
Elias G. Carayannis of George Washington University, USA

George Grammas of Squire, Sanders & Dempsey L.L.P., USA

Henry Helvajian of The Aerospace Corporation, USA

David Oppenheimer of Ramp Equity, USA

Time	Monday	Tuesday	Wednesday	Thursday	Friday
	Aerospace Needs and Lessons Learned	Aerospace Technology Assessment	Sector Consortia Development	Programmatic Investment and International Collaboration	Sector Consortia Deliverables
AM	Workshop Implementation Approach	State-of-the-art in Low TRL	Sector Consortia Tutorial	Sector Consortia Roadmap and Projects cont'd	Roadmap and Project Refinement
	Welcome Opening Remarks Plenary Address	Daily Overview	Daily Overview	Daily Overview	Daily Overview
		Keynote Address	Keynote Address	Keynote Address	Keynote Address
	CANEUS Mission, Vision, and Goals	Panel 9: Low TRL Materials (Bottom-Up)	Panel 10: Low TRL Devices (Sensors and Instrumentation)	Sector Consortia Workshops Tutorial and Sector Consortia Leaders Panel	Reliability Mission, Goals and Roadmap	SHM Mission, Goals and Roadmap	Roadmap Refinement: Tasks, Responsibilities, and Timeline
	Aerospace Technology Gap: Case for Sector Consortia						
	Implementation Approach and Success Criteria	Panel 11: Low TRL Materials (Top-Down)	Panel 12: Low TRL Devices (Optoelectronics)		Reliability Project Development and Framework	SHM Project Development and Framework	Project Refinement: Teaming, Budget, and Success Evaluation
	Programmatic issues for the Sector Consortia						
PM	Aerospace Needs Assessment and Lessons Learned from Technology Infusion	State-of-the-art in Mid/High TRL	Sector Consortia Roadmap and Projects	Programmatic Investments and International Collaboration	Sector Consortia Reports
			Keynote Address	Keynote Address	Keynote Address
	Panel 1: Unmanned Space Needs	Panel 2: Aeronautics Needs	Technical Tours	Materials: Mission, Goals and Roadmap	Devices: Mission, Goals and Roadmap	Panel 17: Low-High TRL Governmental Investment	Panel 18: Low TRL International Collaboration	Devices Report
	Panel 3: Manned Space Needs	Panel 4: Defence Needs		Materials: Project Development and Framework	Devices Project Development and Framework	Panel 19: Low-High TRL Private Investment	Panel 20: Mid/High TRL International Collaboration	Materials Report
	Panel 5: Lessons Learned from Space	Panel 6: Lessons Learned from Aeronautics	Panel 13: Mid TRL Materials	Panel 14: Mid TRL Sub-Systems	Small Sat: Mission, Goals, and Roadmap	Fly-by-Wireless: Mission, Goals, and Roadmap	Panel 21: CEO/CTO Panel	Fly-by-Wireless Report
								Small Satellite Report
	Panel 7: Reliability/ Packaging	Panel 8: Lessons Learned from Defence	Panel 15: High TRL Materials	Panel 16: High TRL Systems	Small Sat Project Development and Framework	Fly-by-Wireless Development and Framework		Reliability Report
								Workshops Conclusion
	Poster Session	Poster Session	Poster Session		
	Reception	Reception	Banquet and Competition Awards and Presentations		



CANEUS 2009 Sponsorship Opportunities

Sponsorship Package Opportunities	Sponsorship Benefits
Platinum Over 75K	» 35 % Discount CANEUS Chartered Membership for One Year, (24.5K) » Partner of Banquet/Reception and 1 Lunch, 30K » Partner of 2 Coffee Breaks, 8K » One on One Business Meetings, 5K » Workshops Program Partner OR Lanyard and Workshops Bag Partner, 10K » 2 Exhibition Stands, 4K » 2 Free Registrations, 1.5K » Company institutional video at the event promotional space. » Sponsor Logo displayed in the event entire advertising media (website, newsletters, banners, digital publication, etc.) » 30% discount on all additional company registrations
Gold 50K	» 25% Discount CANEUS Chartered Membership for One Year, (17.5K) » One on One Business Meetings, 5K » Partner of 2 Lunches 20K » Partner of 2 Coffee Breaks, 8K » 2 Exhibition Stands, 4K » 2 Free Registrations, 1.5K » One Full Page in Workshops Program, 1K » One Insert into Workshops Bag » 20% discount on all additional company registrations » Place of Honour on CANEUS 2009 Website

Silver 25K

- 10% Discount on CANEUS Chartered Membership for One Year, (7K)
- Partner of 1 Lunch, 10K
- Partner of 2 Coffee Breaks, 8K
- 1 Exhibition Stand, 2K
- 2 Free Registrations, 1.5K
- 10% discount on all additional company registrations
- Place of Honour on CANEUS 2009 Website

Bronze 15K

- 5% Discount on CANEUS Chartered Membership for One Year, (3.5K)
- Partner of 1 Lunch, 10K
- 1 Exhibition Stand, 2K
- 1 Free Registration, 0.75K
- Place of Honour on CANEUS 2009 Website

Partner 10K

- Partner of 2 Coffee Breaks, 8K
- 1 Exhibition Stand, 2K
- 1 Free Registration, 0.75K
- Place of Honour on CANEUS 2009 Website

Associate Partner 5K

- Partner for 1 Coffee Break, 4K
- 1 Free Registration, 0.75K
- Place of Honour on CANEUS 2009 Website

Exhibitor 2K

- Exhibition Stand, 2K
- 1 Free Registration, 0.75K
- Place of Honour on CANEUS 2009 Website

Please Note

Approx. value to CANEUS in USD.

Various Packages may be offered upon agreement.

As CANEUS is a non-profit organization, sponsorships and donations may be tax-deductible.

Participation in High-Risk, High-Cost Collaborative Projects

Each sponsor has the opportunity to become a CANEUS member; sponsors who donate over $15,000 are privilege to a discount on CANEUS membership, which is valued full price at $70,000 per year.

Members are able to participate in the high-risk, high-cost collaborative projects and initiatives coordinated by CANEUS' international Sector Consortia. Descriptions of CANEUS' Sector Consortia may be found on page 15.

For one year, CANEUS members have licensing access to an Intellectual Property policy covering all of CANEUS' projects and initiatives. They also benefit from a vote in the Member Assembly to determine the project programs and the organization's Strategic Plan and Annual Work Program, and to ratify the CANEUS Board of Directors. Among other benefits, CANEUS members enjoy:

- Participation on high-risk, high-cost projects and initiatives within a structured, innovative framework of international collaboration;
- Cost and risk mitigation thanks to access to jointly developed pre-competitive technology and proprietary product development;
- Reduced time-to-market and rapid system-level product deployment through supply chain collaboration;
- Participation in the development of global standards in cooperation with leading aerospace corporations and agencies;
- Licensing access to a fair and equitable IP-brokering service;
- Harmonization of various national policies (e.g., ITAR) controlling collaborative international technology development;
- Preferential access to the extensive networking platform and global "technology portal" of CANEUS' international sector consortia and conferences, reaching an international cross-section of state-of-the-art technology developers and suppliers, and

- Preferential access to academic and institutional resources and CANEUS reports, publications, and research updates.

CANEUS members will benefit from CANEUS' organizational leadership, program management, coordination, technical support, business development support, and preliminary funding of projects and initiatives.

As part of the Membership services, the CANEUS Organization will provide access to complete pre-established innovation environment and ensure that:

1. Intellectual Property (IP) and Non-Disclosure Agreement (NDA) terms are pre-established
2. Program Management will be pre-established and handled for the duration of the project
3. Contracting procedures will be pre-established and Contracts will be handled
4. Best practices will be pre-established and employed in program management
5. Issues associated with ITAR and Government regulations

CANEUS is a non-profit and member-directed organization. It is extremely important to us, as a non-profit organization, to achieve our goals as determined by you, our membership. We are glad to welcome our members and, as projects advance, look forward to working with you all within the strong and versatile CANEUS framework of international collaborative development.

CANEUS Organization

The CANEUS Organization: Current & Future Activities

CANEUS now coordinates the activities of Sector Consortia dedicated to Small Satellites, Fly-by-Wireless (with Structural Vehicle Health Monitoring), Aerospace Reliability, Devices (with Harsh Environment Sensors, Opto-electronics, Environmental Monitoring, and Bio-Astra), and Materials (with Micro-Energetics). Each international collaborative Sector Consortium has a well-defined mission, as well as objectives, goals, strategies, and annual roadmaps. The Sector Consortia Workshops will facilitate networking opportunities and precipitate cooperation between high-level officials from government organizations, industry R&D groups, and private investors world-wide.

Mission

To establish global public/private partnerships within the aerospace community by fostering a collaborative environment
aimed at the adoption, adaptation, and accelerated commercialization of micro and nano technologies (MNT).

Vision

Through the creation of international consortia that accelerate the development and use of MNT in the aerospace industry, CANEUS will become the “Virtual World Aerospace Organization” and be recognized for its excellence in providing high return on investment for its stakeholders.

Goals

1. To syndicate resources from all stakeholders and reduce the high costs and high risks associated with disruptive technologies.

2. To develop a portfolio of projects focused on meeting the current and emerging needs of stakeholders, providing an economically viable solution in so doing.

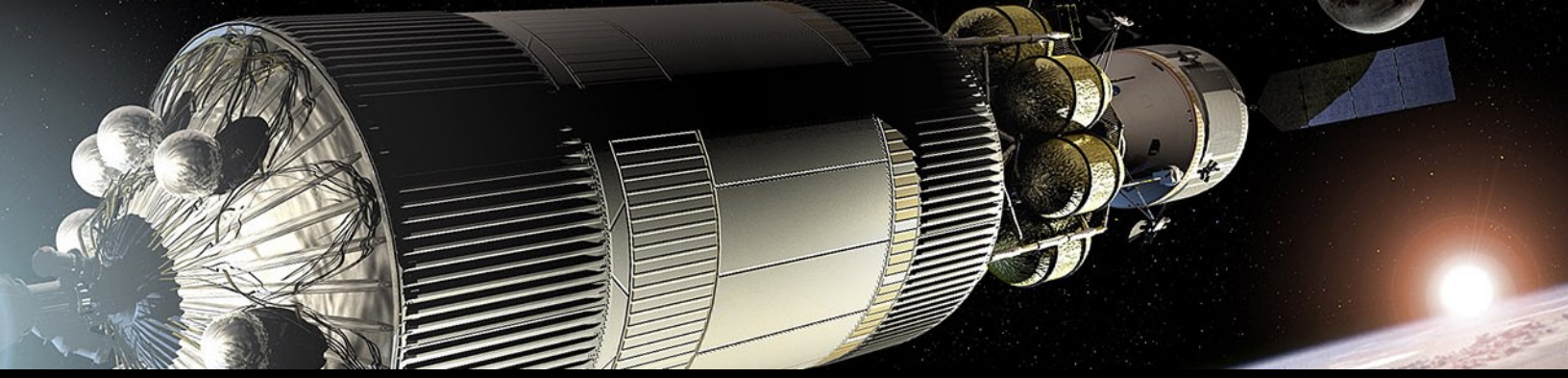
3. To create an innovation environment for stakeholders to develop MNT based solutions focused on an integrated supply chain.

4. To create a value chain that will result in rapid and efficient commercialization of new products and solutions.

5. To provide an international platform that will be conducive to advancing knowledge, innovation, training, and competitiveness.

6. To become an intelligent third-party broker of MNT for the aerospace community and a conduit for the exploitation of MNT through linkages.

7. To become a clearing-house and technology-watch for MNT worldwide.



Sector Consortia

A Sector Consortium consists of an international public/private partnership between industry, research laboratory, and government stakeholders where the membership's resources are pooled to focus on high-risk, high-cost initiatives. Based on input from past conferences and the recommendations of CANEUS constituents, a number of Sector Consortia have been created and are currently in various stages of implementation.

CANEUS 2009 sponsors are welcome to become involved in any consortium or consortia in which they are interested. Following are descriptions of the current slate of Sector Consortia.

Small Satellites

The CANEUS Small Sat Sector Consortium (SSSC) is an international consortium dedicated to the micro and nano technology implementation, coordination, and standardization of the small (1-100 kg) satellite industry. The SSSC oversees five projects and initiatives dedicated to (1) developing standards so as to ensure international interoperability, (2) identifying launch opportunities and services, (3) providing stakeholder liaison and strategic development, (4) addressing Intellectual Property and ITAR issues in accordance with CANEUS International's broader mission, and (5) organizing launch certification services.

Andrew H. Quintero
Director and Coordinator
The Aerospace Corporation
USA

Small Satellites: Standards Development

The Standards Development initiative aims to provide a platform for developing satellite subsystems standards to ensure interoperability among international partners. This will result in small satellites that are cheaper to develop with a shortened development time to launch.

John Hines
Chair
NASA Ames Research Center
USA

Small Satellites: Launch Services

The Launch Services initiative is mandated to establish a set of specifications consistent with a variety of launch systems and to ensure the compatibility of secondary payloads with these specifications. The initiative aims to provide secondary satellite developers with a current list of candidate launches detailing carrier type, carrying capacity, and key contact information.

Gerard Szatkowski
Chair
United Launch Alliance
USA

Small Satellites: Stakeholder Liaison and Strategic Development

The Stakeholder Liaison and Strategic Development initiative is chartered to compile the necessary critical processes, procedures, and needs documents from the community of SSSC stakeholders. These will ultimately be of value to all stakeholders who aim to benefit from a streamlined international collaboration.

William Edmonson
Chair
North Carolina State University
USA

Small Satellites: Intellectual Property and Export Control

The Intellectual Property and Export Control initiative aims to establish a clear process for defending intellectual property rights and a streamlined process for members of the CANEUS SSSC to resolve export control issues. The goal of the initiative is primarily a clear process outcome. The outcome for intellectual property will be a guideline for how smaller companies can address intellectual property concerns while engaging with larger firms or government agencies. The outcome for all entities will be a clear construct for dealing with export control restricted technologies of interest. Member organizations will greatly benefit from a framework that defines pre-approved technology areas of interest.

Andrew H. Quintero
Chair
The Aerospace Corporation
USA

George Grammas
Chair
Squire, Sanders, & Dempsey, L.L.P.
USA

Small Satellites: Launch Certification

The Launch Certification initiative's Strategic Work Plan (including mission, goals, and strategies) will be presented and ratified at the CANEUS 2009 Workshops.

Lt. Col. Douglas Taffinder
Chair
U.S. Space Missile Command
USA

Fly-By-Wireless

The CANEUS Fly-by-Wireless Sector Consortium is chartered to precipitate cooperation and partnerships between industry/ government customers, systen innovators, and technology developers, while exchanging public and published information on wireless alternatives and new innovations such as no-power sensor-tag systems. Ultimately, this effort will contribute to minimizing cables and connectors across the aerospace industry by providing reliable, lower cost, and higher performance alternatives for a vehicle or program's life cycle.

Rodger Magness
Director and Coordinator
Aerospace Wireless
USA

Fly-By-Wireless: Structural Vehicle Health Monitoring

The CANEUS Structural Vehicle Health Monitoring sub-discipline explores the Nanolithography technique as a flexible and cost-effective method for integrating micro-fluidics with nano-fabrication, thus combining both top-down and bottom-up paradigms. The sub-discipline addresses a critical need for aerospace systems, namely that of rapid materials and devices prototyping at nano-scales.

Robab Safa-Bakhsh
Director and Coordinator
Boeing Phantom Works
USA

Aerospace Reliability

The CANEUS International Reliability Sector Consortium is the steward of the aerospace industry's strategic and technology roadmap for reliability technologies. It provides an international forum for the advancement of reliability issues and technical solutions, and manages an industry portal for members' technologies. The Consortium is the premier advocacy group addressing regulations and the development of standards and certification requirements for RF and other MEMS devices. Membership in the Consortium includes all primary industry stakeholders.

Bruno Foucher
Director and Coordinator
EADS Innovation Works
France

Devices

The CANEUS Devices Sector Consortium coordinates the activities of several sub-disciplines including Harsh Environment Sensors, Optoelectronics, Bio-Astra, and Environmental Monitoring.

Devices: Harsh Environment Sensors

This sub-discipline is mandated to address the key challenge of Harsh Environment Sensors, especially for low volume and high reliability applications in various fields. End-users of the aircraft, spacecraft, and defense industries join technology developers from Europe, Canada, USA, Brazil, and other countries to pool their resources and create a collaborative environment. The focus is on high-risk, high-cost aerospace Harsh Environment Sensors Initiatives.

Jan Suski
Director
MEMSFIELD
France

Nico de Rooij
Director
University of Neuchâtel
Switzerland

Oudea Coumar
Coordinator
TE612, EADS-Astrium Space Transportation
France

Devices: Optoelectronics

The Optoelectronics' sub-discipline's Strategic Work Plan (including mission, goals, and strategies) will be presented and ratified at the CANEUS 2009 Workshops.

Iain McKenzie
Director and Coordinator
European Space Technology & Research Centre
The Netherlands

Devices: Bio-Astra

The Bio-Astra Sub-Discipline aims to explore the feasibility of developing MNT-based devices and instruments for bioastronautics applications. While spin-off applications for these technologies are possible for terrestrial applications, the group adopts a project-based business model, with a 3-year development period to demonstrate system level prototypes. A promising MNT-based product selected for development is a sensor-on-chip (SOC) with novel properties for specific bioastronautics needs.

Sumitra Rajagopalan
Director and Coordinator
Bio-Astra Technologies Ltd.
Canada

Devices: Environmental Monitoring

The Environmental Monitoring sub-discipline's Strategic Work Plan (including mission, goals, and strategies) will be presented and ratified at the CANEUS 2009 Workshops.

Meyya Meyyappan
Director
NASA Ames Center for Nanotechnology
USA

Jing Li
Coordinator
NASA Ames Center for Nanotechnology
USA

Harry Partridge
Coordinator
NASA Ames Center for Nanotechnology
USA

Materials

The CANEUS Materials Sector Consortium coordinates the development of a) composite materials for load-bearing applications, structural applications, thermal protection and radiation shielding systems, b) multi-functional composite materials with MNT embedded sensors, c) MEMS-based micro-thrusters, integrated micro-batteries, integrated micro-propulsion for aerospace and defense applications, and (d) micro-storage.

Alain Pignolet
Director
Institut National de la Recherche Scientifique (INRS)
Canada

Materials: Micro Energetics

The overall objective is to examine the feasibility of setting up a for-profit company to develop Micro and Nano Technology (MNT) products for power generation and micro propulsion applications in close collaboration with end-users in aerospace industry, defence related sciences, and civilian applications. The group will discuss enabling and disruptive technologies, business opportunities MNT-based micro propulsion and micro batteries for aerospace and defence applications.

Edward Shaffer
Director
United States Army Research Laboratory
USA

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