

The Center for the Advancement of Science in Space

ISS National Lab – Enabling Commercial Utilization

Duane Ratliff, Chief Operating Officer
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www.iss-casis.org

CASIS: MANAGER OF THE ISS U.S. NATIONAL LABORATORY

2005	2010	2011
Congress designates the U.S. portion of the International Space Station as a National Laboratory	The President signs the NASA Authorization Act of 2010 into law <ul style="list-style-type: none"> • Extends ISS operations until at least 2020 • Directs NASA to establish a NGO for the National Lab 	NASA issues Cooperative Agreement Notice <ul style="list-style-type: none"> • CASIS selected in July • CASIS operations commence August 31

CASIS STRUCTURE

NGO, non-profit established to:

- Develop & manage a diverse R&D portfolio encompassing basic through applied research based on national needs and ISS capabilities
- Stimulate & manage the use of ISS by OGAs, academic institutions, and commercial entities
- Communicate the value of the ISS

\$15M annually from NASA, ability to generate other sources of revenue

NASA provides transportation and on-orbit logistics

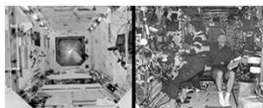
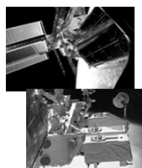
NEW OPPORTUNITY

Access for U.S. interests to internal and external facilities and platforms

50% of available U.S. launch and on-orbit resources

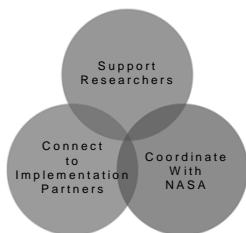
Costs associated with launch and on-orbit operations are fully subsidized

Access to Implementation Partners, GFE, expertise



VALUE PROPOSITION

- Reduced Cost
- Reduced Burden
- Resource Availability
- Commercial Access



ISS NL RESEARCH



NATIONAL LAB UTILIZATION TO DATE

To date >\$15M obligated for ISS NL research across 40 projects

>\$2M non-NASA funds committed

Commercial Partnerships with Boston Museum of Science, MD Anderson, Baylor College of Medicine, MIT, MassChallenge, Boeing, NSTA, The Broad Institute

Flight Project Agreements with P&G, Merck, Cobra Puma, several universities

MOAs in place and/or in development with NIH, NOAA, USDA, VA, DoD, NRL (Navy)



WHY IS COMMERCIAL UTILIZATION IMPORTANT

Achieves original intent of the ISS, realizing U.S. investment

Direct impact on U.S. citizens emphasizes this ROI

Extension of the ISS is dependent on utilization and the relevance of the research conducted

Commercial organizations and academia that focus on tech transfer to the marketplace are key to addressing this challenge



HOW CAN COMMERCIAL UTILIZATION BE ACHIEVED

Demonstrate that the fundamental questions re: microgravity can be answered

Create opportunities to address these questions – seed funding, partnerships, grant challenges, outreach

Familiarize the research community at large with the CASIS business model and utility of ISS

Streamline process while preserving safety and integrity of crew and vehicle

Achieve repeatability, reduce time to flight, and lower cost



A PARADIGM SHIFT IN HOW WE CONDUCT SPACE BUSINESS IS REQUIRED

This is not your father's NASA

ISS construction is complete; capabilities are in place; the focus is now on utilization

Funding must transition into a model within a competitive service market

Cost drivers must be identified and understood, and changes enacted in order for this to be realized



WHAT CASIS IS DOING TO ATTRACT COMMERCIAL UTILIZATION



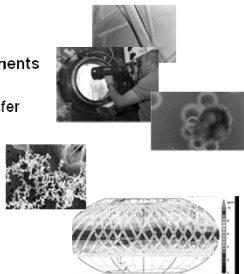
Ecosystem Marketing and Business Development

Grant Opportunities

- Solicited and Unsolicited

Geographic cluster that has key elements

- Academic institutions with tech transfer
- Innovative R&D industry
- Funding sources (partnerships, investment, philanthropy)



ROLE OF OUR PARTNERS



Broaden the use of ISS as a research and technology platform

Promote use of ISS, reaching non-traditional audiences

Maximize investment and new capabilities while minimizing cost—a win-win for all



EXAMPLE: NANORACKS

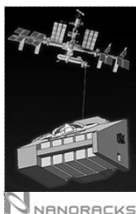


Approach

- Invested private capital to build a business model around ISS research services
- Partnered with other organizations when they didn't have the expertise in-house, enabling fast, repeatable, inexpensive access to the ISS
- Tackled new research needs to encourage broad ISS use

Outcome

- NASA has signed a Phase III SBIR contract, and contract services are available to other government agencies



IN SUMMARY

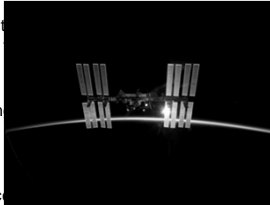
Humankind's greatest technological achievement is open for business, and its value must be recognized

NASA and the government have provided a grand opportunity to use the ISS for commercial research and development

Incentives are necessary in order to demonstrate the value and create marketplace

CASIS is taking the lead in creating utilization opportunities within in targeted ecosystems

Our partners are critical to the success of the ISS National Lab

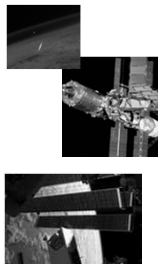


WHAT CAN WE ACHIEVE THIS WEEK

Understand the discoveries, applications and opportunities of the ISS National Lab

Identify the real drivers to cost and constraints. More importantly, suggest solutions

Re-think the business approach to supporting ISS activities.



Images courtesy of NASA

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