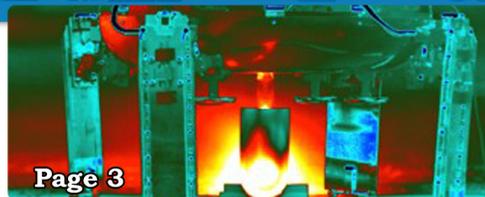




THE FRONT PAGE

KSC's front door to Business Development and Research and Technology

SPRING 2015



Center Planning and Development (CPD) is the "front door" for partnerships with NASA's John F. Kennedy Space Center (KSC).

We are developing the world's premier spaceport for government and commercial space industries, using comprehensive resource planning and partnerships.

For more information about CPD, visit <http://kscpartnerships.ksc.nasa.gov>.

Message from CPD Management

Enabling a multi-user spaceport

Kennedy Space Center has formulated a Multi-user Spaceport Enabling Team (MSET) to focus on initiatives intended to improve the center as a premier spaceport. MSET is chartered as a collaborative forum that receives, initiates, communicates, prioritizes, tracks and works to resolve various center actions related to Kennedy's transformation.

Team actions are associated with improving Kennedy's ability to support partnerships, enhance implementation methods and procedures, as well as to anticipate and address unintended consequences of policies and procedures.

The MSET also is a multi-disciplined team which focuses on initiatives intended to enhance Kennedy's abilities to pursue and implement partnerships to further establish KSC as a multi-user spaceport.

Initiatives considered by the MSET can be identified through various methods (e.g., KSC Partnership Board (KPB) Partnership Landscape Forum (PLF), Kennedy Joint Leadership Forum (KJLF), Center Management Reviews (CMR), Agency Partnerships Bench-

marking (APB) Team, special process improvement projects and routine feedback/actions from stakeholders, etc.).

Although it's not an approving authority, MSET serves as a forum to communicate and integrate issues, actions and resolutions such that there is awareness and inclusion across all affected Kennedy entities.

Main functions and benefits of the MSET include:

- Proactively responding to feedback received by the partners and contractors
- Prioritizing initiatives and action resolution
- Identifying and receiving new actions
- Ensuring full coordination with NASA programs and alignment with NASA Mission
- Ensuring information is disseminated to the KSC community on team initiatives and changes.

The MSET is co-led by Jean Flowers of the newly formed Spaceport Integration and Services, and Marie B. Reed of Center Planning and Development.

*-- Marie Reed,
Center Planning and Development*



**Janet Petro, Deputy Director
Kennedy Space Center**

Florida's Space Coast EDC, NASA announce alliance

NASA and the Economic Development Commission of Florida's Space Coast announced Jan. 21 they have formed a "strategic alliance" aimed at bringing cutting-edge technologies, resources and expertise to help solve manufacturing and technology challenges for various industries.

This partnership will provide applied technology solutions to accelerate regional economic growth on the Space Coast.

This initiative is part of NASA's national pilot program for Regional Economic Development, or RED.

End-users and beneficiaries of this agreement are the companies in Brevard County that have specific technical chal-

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'Front Door' website undergoes enhancements

The Kennedy Space Center Partnerships website (<http://kscpartnerships.ksc.nasa.gov/>) has been enhanced, better to serve as the “front door” for potential partners who show interest in Kennedy Space Center’s launch systems, spacecraft and payloads; capabilities and testing; and emerging markets opportunities.

Officially recognized as a multi-user spaceport, Kennedy continues to attract potential new partners as it offers more than 50 years of operational expertise, ideal accessibility to space, advanced engineering capabilities and technical labs, and a proven dedication to customer’s mission success.

The Partnerships website lists numerous Kennedy technical capabilities such as launch vehicle processing, spacecraft processing, payload processing, ground operations, avionics systems, life cycle modeling, software development, simulation systems, telemetry, and operations maintenance.

Kennedy’s available physical assets, suited to support aerospace activities, are also included on the website. Namely stated are processing and launch infrastructure that is available for commercial, non-profit and government entities. Additionally, assembly, testing and processing, launch and landing, and R&D facilities are obtainable. Furthermore, Kennedy has the ability to support new facility construction for companies that could benefit from the diverse and ever expanding expertise of commercial activities.

Enhancements to the Kennedy Partnerships website include enriched, comprehensive content and a search capability, both internal and

The screenshot displays the Kennedy Space Center Partnerships website. At the top, there is a NASA logo and the title "Partnering with Kennedy Space Center" with the tagline "Developing Partnerships... Launching Dreams". A search bar is located in the top right corner. Below the header is a large image of technicians in cleanroom suits working on a spacecraft component. A navigation menu includes "Home", "About Us", "Partnering with KSC", "Partnering Opportunities", "KSC Master Plan", and "Technology Transfer". The main content area is divided into three columns: "You Can Partner with KSC" featuring a video player and text about KSC's diverse capabilities; "What We Offer" with icons for "KSC Capabilities" and "KSC Physical Assets"; and "Success Stories" listing partnerships like "Exploration Park" and "SpaceX". A blue "PARTNERING OPPORTUNITIES" banner features icons for "Launch Systems", "Spacecraft and Payloads", "Capabilities and Testing", and "Emerging Markets". The "IN THE NEWS" section at the bottom highlights recent events such as the Florida EDC, NASA Strategic Technology Alliance announcement and Moon Express testing.

external to Kennedy. Additionally, a print feature has been added, which can print every webpage in a brochure-like fashion. Social media options such as Facebook, Twitter, Google+, and Digg it, also have been added. Lastly, receiving additional information just got easier. The new “Ready to Launch?” section offers contact information and an inquiry

submittal form at a click of a button.

All of these enhancements offer users a greater knowledge of Kennedy’s competencies, easier means to pinpoint data, first-time access to printable information, superior accessibility through social media apps, and a rapid inquiry feature.

Moon Express completes initial flight test

During November and December 2014, Moon Express successfully conducted its lander test vehicle hot fires and initial flight tests at the Shuttle Landing Facility at Kennedy Space Center, with the support of NASA's Lunar Cargo Transportation and Landing by Soft Touchdown (CATALYST) initiative.

Through an increasingly complex series of tests following vehicle integration, the Moon Express "MTV-1X" proved out its fundamental guidance, navigation and control systems and achieved controlled flight profiles. A highlights video was published by Moon Express following the flight tests.

The Moon Express team shared facilities and coordinated range operations with the NASA Morpheus lander test vehicle, which also had a successful flight test series.

"NASA has been a remarkably helpful and proactive partner to help us achieve our goals," said Moon Express co-founder and CEO, Bob Richards. "The Lunar CATALYST team supporting our partnership is outstanding and our direct Space Act Agreement relationships with Ames Research Center in Moffett Field, California, Marshall Space Flight



Moon Express' MTV-1X test vehicle performed a tethered flight test at the Shuttle Landing Facility at Kennedy Space Center. Photo credit: Moon Express Inc.

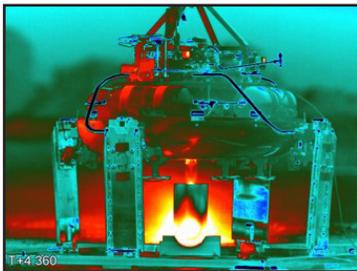
Center in Huntsville, Alabama, and Kennedy are providing us access to additional key support and resources to help get us to the moon."

Moon Express is one of NASA's three private sector partners competitively selected

to spur commercial cargo transportation capabilities to the surface of the moon.

"We congratulate Moon Express on the successful flight tests of their innovative lunar lander test vehicle," said Jason Adam, NASA's Moon Express

partner manager under Lunar CATALYST. "Moon Express is the first private company to build and operate a lander test vehicle at the Kennedy Space Center, and we look forward to working with them as they develop new U.S. capabilities to land on the moon."



A thermal infrared image of Moon Express' MTV-1X test vehicle undergoing a hotfire engine test at Kennedy Space Center. Image credit: NASA/Lunar CATALYST Initiative

"Moon Express is the first private company to build and operate a lander test vehicle at the Kennedy Space Center, and we look forward to working with them as they develop new U.S. capabilities to land on the moon,"

**Jason Adam,
NASA's Moon Express partner manager under Lunar CATALYST**

lenges with new or existing products, technologies or production processes. Through this program, the region's companies will have access to NASA's talent pool and resources to help solve their issues quickly with the end goal of increases in revenue and the creation of jobs and new technologies, business lines and companies.

The EDC will work with NASA to establish guidelines and target companies that qualify for assistance.

"NASA is pleased to partner with the EDC on this effort, and we look forward to making the linkages between industry and NASA technology, resources and capabilities," said Kennedy Space Center Director Robert Cabana.

Both small and large companies have different developmental needs according to stages in their natural life cycles. These needs range from idea generation and the acquisition of intellectual property to the need for startup capital, prototype development, and workforce skills and expertise.

NASA's program for Strategic Regional Partnerships for Technology addresses these needs in a systematic and deliberate way by sparking the creation of regional partnerships that link and leverage NASA expertise and technology with regional capital and resources to solve community technology challenges and needs.

An overall goal of this pilot initiative is to leverage and link NASA and other regional/community assets with a particular focus on the needs of small companies at all stages of their life cycles, from the initial idea stage to scale-up of manufacturing.

"At Kennedy, we let these operational lessons drive much of our own research and technology development, and it is why we are so excited about this new partnership with EDC," said Kennedy Deputy Director Janet Petro. "It will leverage strategies that we have found successful in other markets and test new



Kennedy Space Center Deputy Director Janet Petro shares her optimism as NASA and the Economic Development Commission of Florida's Space Coast announced a "strategic alliance" Jan. 21 aimed at providing applied technology solutions to accelerate regional economic growth in Brevard County. Photo credit: NASA

methods for connecting resources and opportunities which drive regional economic development."

The EDC also will provide regional economic development services, including asset mapping, supply-chain analysis, and technology matching programs to infuse NASA technology into the surrounding business community.

The EDC attracts new business and investment and expands existing industry throughout the Space Coast.

"With a large concentration of manufacturing and technology companies that operate from the Space Coast, these companies could all benefit from more tools and assistance," said Lynda Weatherman, president and chief executive officer of the EDC. This program not only benefits companies through growth, but in turn, the entire community through economic activity."

One important piece of this agreement includes the appointment of a NASA

technology liaison who will be co-located for a year with the EDC in Rockledge. This NASA "technologist in residence" will be responsible for further assessing the NASA technology portfolio and serving as the link to local industry and will also provide access to NASA data and studies, and facilitate access to NASA facilities, expertise and personnel.

This pilot program is conducted at the agency level, and is executed in an agreement between NASA's Space Technology Mission Directorate (STMD) and the EDC through a four-year cooperative agreement.

"Manufacturing and technology companies in Brevard County that have specific technical challenges with new or existing products, technologies or production processes are now one of our missions as well," Petro said, "and we look forward to sharing many success stories in the months to come."

AS 'SCENE' ON CENTER



In April, Central Campus pile-driving work started. About 400 piles will be driven into the ground to support the new Headquarters building.



From left: Kennedy Space Center Director Bob Cabana, Scott Colloredo, Director Center Planning and Development; Sheryl Chaffee, TA-B; David Thorpe, AD-A; Nancy Potts, AD-A; KSC Master Planner, Trey Carlson, AD-A; Gisele Altman, AD-A; Nancy Bray, TA. Not pictured, Steven Gilmore, AD-A.

MASTER PLANNING TEAM EARNS GOLD DOLLAR AWARD

Recently, several members of the Kennedy Space Center Master Planning Team were awarded the coveted Quality Gold Dollar Award for their impact on the center through the creation of the KSC 20-year Master Plan (CMP).

This multi-directorate team was formed to develop the update to the CMP. It lays out a solid foundation for Kennedy's continued transformation from a space shuttle centric op-

erations facility to a multi-user spaceport of the future.

Neither Kennedy nor the agency as a whole, had undertaken such a large change in its approach to planning activities since before the shuttle era.

As a result, Kennedy is leading the agency in addressing change.

The Master Planning Team has been essential to the detailed technical analysis and continued overall strategic planning for the CMP.

SUCCESS STORY

ROCKET UNIVERSITY EMIST

The Rocket University (RU) students teamed with a NASA microbiologist and a research scientist from the University of Florida on a project called Exposing Microorganisms in the Stratosphere (EMIST), which was successfully deployed with a NASA balloon on Aug. 24, 2014.

The purpose of the experiment was to expose known quantities of terrestrial microorganisms to the stratosphere and investigate how the microorganisms can adapt to and survive exposure to extreme conditions. The study of microorganisms are beneficial in human activity (human exploration), whether it is in the human body itself or whether it is in a plant-growing system that might be used to regenerate oxygen, water or food for humans.

The RU engineers were tasked with designing, fabricating, (with the help of the Prototype Development Laboratory), and testing the payload that housed the experiment. The principal investigators considered the project a huge success and continue to analyze the data that was collected.

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