SpaceTEC Newsletter May 2011

Space Shuttle Endeavor's launch from the Kennedy Space Center on May 16, 2011.

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FLORIDA SPACErePORT

A Message from the PI
by Dr. Al Koller

Since our last newsletter, a lot of activities have taken place. The major ones are outlined in this newsletter, but you can also stay current by visiting our web site at: **http://www.spacetec.org.**

Last month we hosted our **annual meeting with the NSF National Visiting Committee**, our National Aerospace Technology Advisory Committee (NATAC) - and the Co-PIs and Points of Contact (POCs) from our partner colleges. Hosted by Calhoun Community College in Decatur, Alabama, we enjoyed the great southern hospitality that is always a part of any visit there, and we were amazed at their new Robotics Technology Park - truly a developing world-class robotics R&D operation funded by the State of Alabama and destined to be a leader in many of the technologies that will open new frontiers here on earth and in our space ventures.

During those meetings we were privileged to hear from several leading authorities from industry and academia, and the NVC report provided valuable guidance that we have already begun to apply. While the goals of our National Resource Center have not changed, the way in which we will pursue them and the measures for our success will be modified to better acknowledge the changes that have taken place in both our internal activities and in the space industries we serve. **Our initiatives for the coming year are outlined in a follow-on article in this newsletter.**

Our SpaceTEC blog, http://blog.spacetec.org**,** continues to grow in popularity and depth. Visit it to participate in the discussions

there. **Additional SpaceTEC content is also hosted at:**

- http://youtu.be/Rk9s-2hb3Cs
- http://www.youtube.com/watch?v=DU7B8wqkVus&feature=related
- http://www.youtube.com/watch?v=bxeycbrCe3k&feature=related
- http://www.youtube.com/watch?v=Rk9s-2hb3Cs&feature=youtu.be
- http://archived.thespaceshow.com/shows/1480-BWB-2010-12-20.mp3
- http://archived.thespaceshow.com/shows/1452-BWB-2010-11-03.mp3

As promised last fall, **we have opened a new online SpaceTEC Core Prep Course** designed to help aspiring technicians and graduating students seeking certification to prepare themselves to sit for the SpaceTEC Core Certification Exams. If you are interested, please **contact Mr. Dave Fricton, the National Certification Manager, at 321-730-1020**. He can provide a code to allow you to view the Prep Course as a guest at: http://spacetec.us/moodle/**. For more information, see the online Prep Course article in this newsletter.**

While no one knows the "way forward" for aerospace today, we expect continued growth in the commercial space activities and anticipate an opportunity to partner for skills inventories and initial certification discussions with several groups by fall of this year. The FAA Office of Commercial Space Transportation hosted the **spring meeting of their Commercial Space Transportation Advisory Committee (COMSTAC) earlier this month, and there's a summary of information from that meeting in this newsletter as well.**

We are preparing to host a review by the American Council on Education (ACE) CREDIT program **to re-validate the 24 college credit approval for our Core Certification and to determine the number of college credits to be awarded for our**

Concentrations in Vehicle Processing, Aerospace Manufacturing, and Composites. We'll keep you posted on those results.

Last but not least, **we've adopted a new motto - "Get Ready to Go" (GRTG)** and **are offering space in our Cape facilities** for small payload processing and unmanned systems work (UAV/UAS, robotics, etc.). If you are interested in partnering with us in those fields and want to explore using hangar, office, and shop space at the Cape, please **contact Dr. Tom Steffen, our National Business Manager, at 321-730-1020**.
Let's all GRTG!

SpaceTEC Facility

SpaceTEC Core Certification Prep Course

SpaceTEC is pleased to announce the completion of the new Core Certification Prep Course. Funded by a supplemental grant from the National Science Foundation, this course will be used by technicians who are preparing to sit for the SpaceTEC certification exam. The new Prep course was built in Moodle which is an open source Course Management System (CMS). Moodle (http://moodle.org/about/) has become very popular among educators around the world as a tool for creating online dynamic web learning for their students.

The course is designed in an online format that, depending on the student's current knowledge level, takes anywhere from 4 hours to 24 hours to complete. The student will go through the Core Certification competencies, followed by quick links for each topic/subtopic and then a topic quiz.

The quiz results provide feedback in the form of web links to all questions that are answered incorrectly. Each participant will need to score an 80% in all 6 topics to successfully complete the Prep Course.

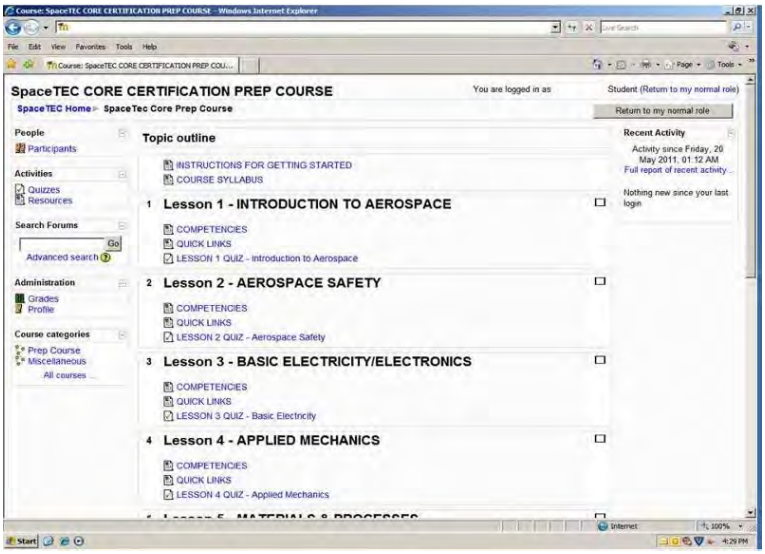
Next Steps

SpaceTEC recently completed a review of the Core Certification exam question bank. The review was conducted with the assistance of industry and academic partners. As part of this review a Question Analysis was generated through our Questionmark testing software. This allowed the reviewers to analyze all previous testing data for each question. Based on this review significant upgrades were made to the question bank.

With availability of the Prep Course and the upgrade to the question bank SpaceTEC has decided to offer a free retake to all participants that have failed the Core Certification exam in the past. The purpose is twofold. First it would allow the opportunity to beta test the new Prep course and second additional statistical data could be gathered by testing repeat participants using the new question bank. SpaceTEC is currently in the process of notifying these individuals and enrollment in the new Prep course has already begun.

If you are interested in receiving more information about the Prep Course, please contact Dave Fricton at (321)730-1020.

Screen shot of Prep Course



SpaceTEC written exam past participants

Question*mark* Case Study

SpaceTEC Training Certifications for Aerospace Technicians

SpaceTEC National Resource Center for Aerospace Technical Education provides skill-based, nationally recognized and industry utilized professional certifications for U. S. Aerospace Technicians who work in civil, defense and commercial organizations nationwide.

SpaceTEC Consortium offers Aerospace Technical Education skills training and college degrees for the
U. S. aerospace industry. In addition to offering performance-

driven certifications, SpaceTEC provides Knowledge/Skills Inventories (KSIs) that are designed to identify and quantify workforce skills and abilities in not only the Aerospace Core but, also fields such as Aerospace Composites, Vehicle Processing, and Aerospace Manufacturing.

SpaceTEC runs all of its certification exams as well as pre-tests and quizzes using Questionmark's on-demand assessment management solutions. Candidates who want to take quizzes or pre-tests to check their knowledge can access them openly, any time, while participants in certification exams must log in under a proctor's direction. Test logins are scheduled within a predetermined two-hour time frame requiring an ID and password.

Some of the test centers have trained Questionmark Perception administrators, "Administrators are allowed to register their group participants and schedule the tests.," explains SpaceTEC Certification Manager Dave Fricton "This also allows them to generate necessary reports for participants in their respective group. It works very well." Centers that do not have trained administrators are dependent on SpaceTEC headquarters to schedule all certification exams and generate reports.

The SpaceTEC certified aerospace technician examination process offers a Core Certification for entry-level employees covering general knowledge in six areas: Introduction to Aerospace, Applied Mechanics, Basic Electricity, Test & Measurements, Materials and Processes and Aerospace Safety. There are also advanced examinations in Aerospace Vehicle Processing, Aerospace Manufacturing and Aerospace Composites. In addition to the online exam, oral examinations and practical performance-based skills exams are administered by certified SpaceTEC Examiners (STEs).

Fricton explains that, SpaceTEC, which is funded through the National Science Foundation, was established in 2002 to provide a specified level of expertise for entry-level technicians: "Before that, there was no industry-endorsed credential for them to earn. Typically, industry would train new hires once they started to work. Now, technicians can demonstrate their basic knowledge through the certification program. It can save industry time and money by not having to start from scratch in their training programs."

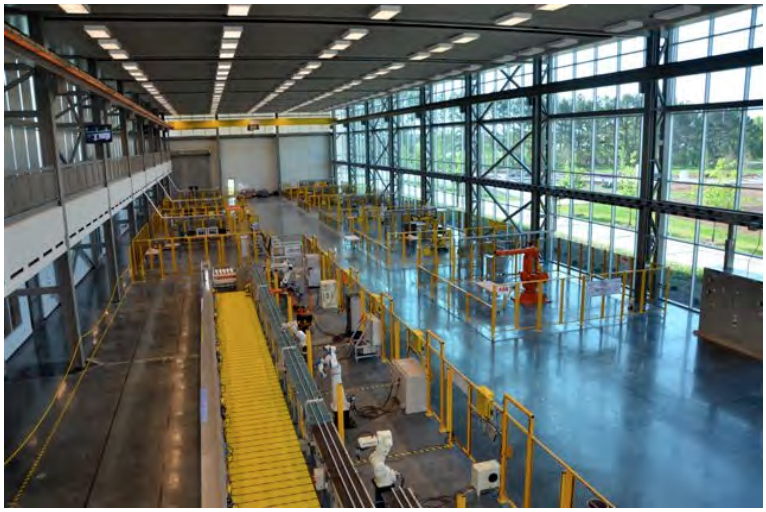
Based on input from the aerospace industry, SpaceTEC plans to add some additional certifications. Typically a DACUM (Developing A CurriculUM) is conducted with representatives from industry who are subject matter experts. The DACUM identifies duties and tasks; knowledge and skills; tools and equipment; and traits and attitudes for inclusion in new certifications. Competencies are then developed and SMEs are identified who can help develop the test bank. After a beta test of the question bank is completed and analyzed, the new certification examination is approved for use and released, opening a new credentialing opportunity for technicians. In today's work environment, certifications are an indispensible element for qualifying employees, and Questionmark plays a key role in that effort.
(http://questionmark.com/us/casestudies/spacetec.aspx)

Robotics Technology Park at Calhoun Community College

SpaceTEC had its NVC and CO-PI meeting in a brand new facility across the street from the Calhoun Aerospace Building.

The Alabama Robotics Technology Park will consist of three individual training facilities each targeted to a specific industry need. The three buildings will have an investment of approximately $71 million including robotics equipment.

All the attendees had the opportunity to take a tour of Phase I: The Robotic Maintenance Training center that houses an industry training program where technicians are trained to work on robotic machinery. The 52,000 square foot facility is staffed by trainers supplied by top robot builders and is home to several major robotics and automation brands. The building houses 20 plus robots as well as an integrated robotic line which demonstrated the movements, handling characteristics and mighty moves capable of the robots. This facility is staffed by trainers from the top robot builders in the world. Forty two million dollars of robots have been pledged to the facility by robot builders and several of the builders and automation manufacturers will have semi-permanent facilities there. The tour was one of the highlights of the two day meeting and was enjoyed by all.



Technician Recognition Event

Award Winners

SpaceTEC, Calhoun and North Alabama Aerospace Industry to Host Fourth Annual Aerospace Technician Recognition Event.

The 4th Annual Aerospace Technician Recognition Awards dinner for the North Alabama region was held on Friday, April 15, 2011 at the U.S. Space and Rocket Center's Davidson Center for Space Exploration.
"This event is one of the premier activities of SpaceTEC and is held each year to recognize and honor the many significant contributions of the local aerospace technician workforce," commented Dr. Al Koller, principal investigator and managing director for SpaceTEC.

Guest speakers were Rex Gevedin, CEO of Teledyne Brown Engineering, and Dr. Al Koller of SpaceTEC, an NSF funded National Resource Center for Aerospace Technician Education. The highlights of the evening were recognition of each sponsoring company's Aerospace Technicians of the Year and the presenting the 2011 Regional Aerospace Technician of the Year Award selected by representatives from each sponsoring company.

In addition to Calhoun, other sponsoring organizations for the event were Allied Signal Research Inc., ATK, The Boeing Company, ERC, Jacobs, Lockheed-Martin, Teledyne Brown Engineering, United Launch Alliance and Qualis Corporation. According to Jim Swindell, assistant dean for Technology Education at Calhoun, more than 300 aerospace employees, students and guests attended.

Ceremony attendees positioned under Saturn 5 rocket

Dave Fricton from SpaceTEC presents certificates to three new Core Certified Technicians

SpaceTEC Open House

Group photo with Atlantis in background

Brevard Community College staff were invited to an Open House at SpaceTEC on May 5, 2011. The visit started with a trip to Kennedy Space Center for site visits at several facilities. The first building in the tour was the Orbiter Processing Facility. The group was able to walk under Discovery while it is being prepared for its final home at Smithsonian National Air and Space Museum. Next the group was taken to OPF 2 for a view of Atlantis being prepared for a launch in July. Upon leaving the Space Center, the tour continued to stops at three historic sites at Cape Canaveral Air Force Station. After the tours the group was treated to a lunch at SpaceTEC, followed by a tour of the SpaceTEC facility.

OPF Tour

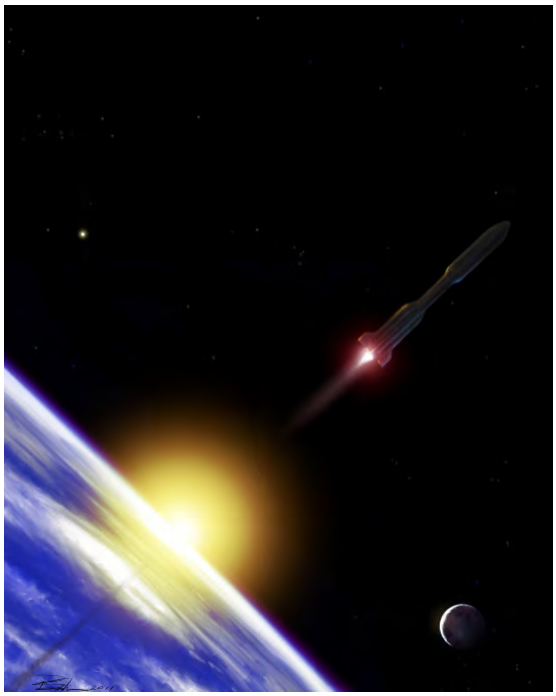
Discovery housed in OPF

Terry White explaining composition of Shuttle tiles

Complex 14

ULA

SpaceTEC workshop



COMSTAC Meeting

COMSTAC meetings are held twice a year in Washington, DC. Typically they include an initial day of workshops, followed by a meeting of the full COMSTAC to address their agenda for a public meeting.

Four working groups met on May 10th: Reusable Launch

Vehicle Working Group; Space Transportation Operations Working Group; Export Controls Working Group; and Risk Management Working Group.

SpaceTEC was represented and spoke at the first two and the fourth of these, commenting on the request from the White House for a review of our Space Transportation Policy and the European Aviation Safety Agency (EASA) classification of all flight vehicles using the atmosphere for lift as aircraft - making them subject to aviation requirements.
Summary presentations of activities in each workshop were presented to COMSTAC at their session on May 12.

The COMSTAC session was in three parts:

1. Remarks by Administrators: Dr. George Nield, Associate Administrator for Commercial Space Transportation; J. Randolph Babbit, Administrator, FAA; and Charles Bolden, NASA Administrator. Each provided their views on the current state of commercial aerospace. **Highlights include:**
Comments on Space Policy are due May 26, two page inputs to Dr. Nield.
The Tech Center at KSC will focus on three main areas: Safety, Range Operations, and Mission Management. A safety approval has been granted to Zero-G for 727 aircraft systems, and Blue Origin has received a launch permit. A Safety Management System (SMS) is under development.
The NASA focus will be on ISS and low earth orbit, but there will be work on learning how to live off the planet. Cargo resupply to ISS is critical and will target operations within a year. We will return to the moon to establish a base there.

2. Presentations on topics of special interest: 2011 Forecasts for Commercial
Geosynchronous Orbit (Ronnie Johnson) and Non-Geosychronous Orbit
Launch Demand (Kate Maliga). Move to larger GSO satellites, >5400 kg,
10 Yr. Non-GSO=130 flights, half to ISS ; Update on the FAA Commercial
Space Transportation Center of Excellence (Ken Davidian) -
See www.coe-cst.org. New partners are being sought; Space Policy Issues
(Damon Wells and Chirag Parikh); FAA/NASA Interfaces (Ed Mango, KSC) -
Will use fixed price contracts, FAA license not now required but subject to
change (controversial), Level 2 reqts: 30% "meets", 70% "intent" will lessen
controls. Will use a combination of a Technical Board and a Program Board. Operations TBD.

3. Feedback reports from each of the four working groups as noted above.

Presentations for all areas of this meeting are on the web at: http://www.faa.gov/about/office_org/headquarters_offices/ast/advisory_committee/meeting_news/.

Next Steps for SpaceTEC, 2011-2012
by Dr. Al Koller

During our annual review in Decatur, Alabama, we discussed options that will use SpaceTEC-specific activities to address the goals of our Aerospace National Resource Center. We have

adopted four areas of emphasis for the coming year as follows:

1. **Strengthening Our Relevance** will be achieved through three activities:

   § Obtain FAA Endorsement/Support via the Safety Approval Application

   § Obtain ACE Approvals for Core Renewal and Concentrations

   § Increase Assistance to Our Partners. Inputs Were Requested, Results Pending

2. **Expanding Our Organization** entails many opportunities, including:

   § Broaden the NATAC Membership
      § Approach All Commercial Space Groups
      § Use COMSTAC Working Groups (RLVs, etc.)
      § Sign MOUs/LOUs for Specific Projects
   § Seek New Partnerships
      § Aviation/147 Schools (e.g., Ivey Tech, ERAU, ATEA)
      § Small Payload Processing (NASA's SGC)
      § Unmanned Aerial Systems (NCATT, Northland)
   § Network With Others in Related Technical Fields
      § Deliver Hi-TEC Paper, July 2011, SF/CAL
      § Develop Performance-based Certs/Prep Courses
      § Prioritize "Bridging" Projects (SpaceTEC/CertTEC)

3. **Deepening Our Outreach and Support** will include national and local level actions:
   § Initiate Funded Work with Partner Colleges
      § Sponsor Events (e.g., Calhoun "Tech Night")
      § Choose Lead Colleges for New Project Initiatives
      § Conduct Professional Development Workshops
   § Initiate Commercial Space Activities
      § Offer Workforce Skills Inventories (KSIs)
      § Create Custom Certifications/Prep Courses
      § Advocate For Accepted Industry Standards
      § Seek Partners for Small Payload and UAV Work

4. **Transitioning Our Leadership** is by far the greatest challenge. Plans include:

- § Initiate Transition Planning for HQTRS
  - § Review Current SpaceTEC Positions and Plans
  - § Recruit for SpaceTEC Program Manager - July 1
  - § Assess Needs for Additional Staff (FT and PT)
  - § Evaluate Options for Phased Changes
- § Scan For Opportunities and Needs
  - § Identify Project Management Needs and Options
  - § Poll Partners and Stakeholders for Inputs
  - § Scan Grant Opportunities for Joint Ventures
  - § Coordinate for Letters of Support, etc.

Our next steps will be built around these four key elements, and we will keep you posted.

Quote from Industry

The following quote is from Gregory Benson, Supervisor, Mechanical Test Operations, Strategic Missile & Payload Service, Lockheed Martin Mission Services, VAFB, CA:
"If someone who was SpaceTEC certified came to me for an interview or submitted a resume to me, I would give him or her priority consideration among equally qualified candidates."

About SpaceTEC

SpaceTEC, the National Resource Center for Aerospace Technical Education, provides the only national performance-based certifications for aerospace technicians in the United States today.
In the face of increasing competition in the job market, obtaining nationally recognized professional certifications has become a focus for many new graduates and transitioning aerospace workers.
In response to this need, SpaceTEC has expanded the availability of readiness course materials and increased the use of both the core certification exam and exams covering advanced concentrations.

To learn more about SpaceTEC activities or to begin your certification work, contact us:
By Email: Information@SpaceTEC.org
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