



INCOSE Region V
Huntsville Regional Chapter
Newsletter September 2005

CHAPTER MEETINGS (Usually on 3rd Thursdays @ 5:30 pm at Green Hills Grille on Wynn Drive)
THIS MONTH

On Thursday, Sept. 15, 2005 Dr. Dale Thomas spoke on the development of a standard NASA-wide systems engineering (SE) process "engine" that can be applied to any system regardless of scope or scale.

Dr. Thomas is responsible for Systems Engineering & Integration (SE&I) for all programs and projects managed by the MSFC Space Transportation Programs & Projects Office (STPPO). Dale has also served as UAH Associate Adjunct Professor since 1991.

NASA's revamped SE process is documented in a new NASA SE guideline entitled "Systems Engineering Processes and Requirements." The SE guideline has gone through four review workshops as well as technical exchanges, internal reviews, and a Red Team review. Products include an acceptable NASA Procedural Requirements (NPR) document as well as others as required. The goal is to develop a single SE framework and consistent processes that can be used to develop hardware for all sizes of projects—a transponder, a subsystem, or a satellite. A change in NASA culture is required that promotes and works towards using a systems approach by all disciplines—not just systems engineers!

In concert, the STPPO has developed a lower-level, more detailed Systems Engineering Manual (SEM) which documents the SE processes and procedures to be followed for engineering of NASA's next-generation space launch vehicles, the main business of the NASA/MSFC. Dr. Thomas' excellent presentation is posted on our website, www.incose.org/huntsville.

PRESIDENT-ELECT POSITION VACANCY

Mr. Jamie Dodson has stepped down as the President-Elect for INCOSE HRC, leaving this position vacant. Anyone who is interested in applying for this vacant position is asked to contact our President, Rick Leonard at 726-1831 as soon as possible. You can also call any of the local chapter contacts on the last page of this newsletter.

UPCOMING CHAPTER MEETINGS

October 20

Odus Nickoles, PEO Army Aviation, will speak on systems engineering aspects of Helicopter Program X.

November 17

Willie Fitzpatrick will speak on systems engineering aspects at the SED.

December 15 – Officer's Meeting

COMPANY NEWS

SAIC—Huntsville Operations

For questions or comments regarding the Huntsville INCOSE chapter please contact Rick Leonard at 256-726-1831.

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SAIC employees from the Program & Analysis Division from the Engineering & Analysis Operation were instrumental helping the PEO Aviation Future Combat System (FCS) "One Team" meeting successfully completing a significant System of Systems (SoS) Functional Review (SoSFR) program milestone.

The SoSFR was a multi-disciplined technical review to ensure the FCS program is properly maturing. The review ensured the initial Functional Baseline was established and documented in the SoS Specification (SoSS), ensured the SoS requirements and functional requirements were defined and properly derived from the FCS Operational Requirements Document, and ensured those requirements were consistent with cost, schedule, risk and other system constraints. The review found the Family-of-Systems can proceed with their System Functional Reviews (SFRs) and the program is ready to proceed to Preliminary Design. In 2006, the FCS One Team will focus on integration, build and test activities, with more hardware and software deliveries, experiments, and demonstrations. Their ultimate goal is to equip our joint warfighters with the world's best capabilities.

As One Team members, personnel in Wanda Carswell's Systems Engineering Section provided three (3) critical services associated with this milestone: 1) Change Managers (CMs) tasked with executing all changes to the System of Systems (SoSS) requirements in the Dynamic Object Oriented Requirements System (DOORS), 2) Requirements analysts tasked with performing Functional Decomposition/Functional Analysis (FD/FA) for the Training and Networked Lethality teams, and 3) Trainers for the FCS Tool and Processes (Units 1-4), as well as the SoSS Decomposition Environment used in the Change Management (CM) process. In addition to these services, Wanda's group provided important assistance in gathering and reporting metrics on progress throughout this phase of the program.

FCS Project Managers BG (P) Cartwright and Mr. Dennis Mulenburg praised the FCS Program One Team for their leadership, teamwork, and collaborative, continuous focus on execution to successfully complete the SoSFR milestone. They commended the Team for their hard work to establish achievable system-of-systems requirements, develop a solid functional baseline, and readiness to continue IP1 and move into integrated platform-specific SFRs and Preliminary Design. They were truly impressed with the Team's outstanding results – from requirements and specifications, to architectures, design concepts, modeling and simulation, performance assessments, distributed systems and networks, integrated platforms, lab integration, software and hardware deliveries, and integration phases.

NATIONAL NEWS

Systems Engineering/Test and Evaluation Conference (SETE) 2005

November 07 - 09, 2005, at the Carlton Crest Hotel, Brisbane, Australia

The SETE 2005 theme is "A Decade of Growth ...and Beyond" in recognition of the 10th anniversary of the Systems Engineering Society of Australia (SESA) and the continuing benefits that systems engineering, systems thinking and effective test and evaluation have in the world.

The conference will include a combination of plenary sessions, panels, papers, tutorials, workshops and trade exhibitions. In addition, SETE 2005 will include several tailored networking opportunities which will provide a relaxed setting for discussing challenges and solutions with like-minded peers. If you are involved in the analysis or development of systems - whether as an acquirer, developer, or user of complex systems or capabilities - this conference is for you.

For more information (including the call for papers) or to register, please visit www.iceaustralia.com/sete2005

2006 INCOSE International Workshop

January 28 - February 01, 2006; in Scottsdale, Arizona, USA
This year's Workshop will be held in the new Radisson Fort McDowell Resort. Only 25 minutes from Phoenix Sky Harbor International Airport, the resort promises state-of-the-art meeting spaces in a captivating desert haven.

The International Workshop, INCOSE's annual "business meeting", is just that – an opportunity for active members of INCOSE's Working Groups as well as its Committees and Boards to meet in intensive working sessions. This is also the meeting at which the year's officers are installed and when INCOSE's Boards and Administrative Committees meet. Please note that there are no paper or panel presentations as in the annual INCOSE International Symposium.

All INCOSE leaders and members of Working Groups are encouraged to participate. Any INCOSE member who would like to join one of the Working Groups may do so prior to the International Workshop by contacting the appropriate group chair in advance of the meeting. Contact information can be found on the National INCOSE web site, <http://www.incose.org>. First-time attendees are encouraged to research their selected work group prior to the Workshop.

New NASA Space Architecture Unveiled

The new NASA Administrator, Dr. Michael Griffin, on September 20 unveiled a new path forward for NASA to enable President George Bush's mandate for NASA to continue space exploration to the Moon, and eventually Mars. On January 14, 2004 President Bush spoke:

"Today I announce a new plan to explore space and extend human presence across our solar system. We will begin the effort quickly, using existing programs and personnel. We'll make steady progress—one mission, one voyage, one landing at a time."

On September 23 David King, MSFC Director, Senator Bud Cramer (D-AL), and Steve Cook, Director of the MSFC Exploration Launch Office went over a more detailed briefing outlining NASA's bold vision for space exploration. The briefing is posted on our website, www.incose.org/huntsville as "MSFC and Exploration: Our Path Forward.

Mr. King announced that NASA would complete the International Space Station, safely fly the Space Shuttle until 2010, and develop and fly a new Crew Exploration Vehicle no later than 2014. He said NASA's stated goal is to return humans to the Moon no later than 2020, and then extend human presence across the solar system and beyond. NASA will implement a sustained and affordable human and robotic exploration program, develop supporting innovative technologies, knowledge and infrastructures, and promote international and commercial participation in exploration.

Mr. Cook described more details of NASA's Exploration Architecture. There will be a minimum of two lunar missions per year. A new Crew Launch Vehicle (CLV) will serve as the long term crew launch capability for the U.S. It will have a single 4-segment solid rocket booster (SRB) and a new liquid oxygen/liquid hydrogen (LO2/LH2) upper stage powered by a single space shuttle main engine (SSME). Its payload capability will initially be 25 metric tons (MT) to low earth orbit (LEO), and it can grow to 32 MT with the addition of fifth segment to a redesigned SRB. For manned missions the CLV payload will be a Crew Exploration Vehicle (CEV) with a separate crew module (CM) and service module (SM). The CEV is designed for lunar missions with 4 crew and equipment, or it can accommodate up to 6 crew (with less cargo) for Mars and Space Station missions. The CEV system also has the potential to deliver pressurized and unpressurized cargo, swapping more cargo for less crew, to the Space Station or elsewhere in LEO if needed. A 5.5 meter diameter capsule, scaled from the 3.2 meter Apollo Command Module, will return the crew to Earth. Planned landing sites include the U.S. West Coast (on land), or in the ocean if necessary.

A heavy-lift, stage and one-half launch vehicle (HLLV), composed of two five-segment redesigned solid rocket boosters (RSRB), five SSMEs behind an extended external tank (ET), and an Earth departure upper stage (EDS) powered by J-2S LO2/LH2 rocket engines. The departure stage ignites suborbitally and delivers a lunar lander to LEO, a single SSME. This HLLV will provide a 125 MT payload capability to LEO using the EDS, or 106MT to LEO without the EDS, or a 55MT trans-lunar injection capability using the EDS. Intended to be unmanned initially, the HLLV can be certified for crew if needed.

CSEP FORMS UPDATED

To simplify and streamline the Certified Systems Engineering Professional (CSEP) certification process, the SE Certification Advisory Group has updated the certification forms. Applicants will now contact their references directly, providing each reference the necessary instructions and forms to provide an appropriate reference. This will avoid unnecessary delays in processing certification applications.

Those applying for certification are asked to download the new forms available in the Certification Forms Library on the National INCOSE website. Additional information on the CSEP program is at <http://www.incose.org/educationcareers/certification/>

JOB OPPORTUNITIES

Jacobs Engineering/Svedrup Technology, Inc. (JE/SvT) has recently won a rebid competition for the MSFC Engineering Services and Technical Support (ESTS) omnibus contract.

The ESTS contract provides engineering, science and technical services support to MSFC. ESTS is a five year contract, one base year and four option years. It also has a 40% small business subcontracting goal. Interested applicants or companies should go to <http://www.jacobssverdrup.com/ests/> for additional information, or you can call JE/SvT in Huntsville at 971-0100.

CONTACT INFORMATION

Find us on the web at www.incose.org/huntsville. Please contact Walter.E.Hammond@msfc.nasa.gov ; 256-544-0584 with any Newsletter inputs at any time, and questions or comments about this newsletter.

The International Council on Systems Engineering is a not-for-profit membership organization founded in 1990. INCOSE is an international authoritative body promoting the application of an interdisciplinary approach and means to enable the realization of successful systems.

Your INCOSE HRC officers need your inputs to make this newsletter better speak to your needs. We solicit YOU, the INCOSE membership, for items of interest from your company, local conferences, published tech papers or books, news regarding job transfers, new jobs, etc Your Local Chapter Contacts (detailed bios at incose.org/huntsville)

Your Local Chapter Contact Points

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