# American Institute of Aeronautics and Astronautics
# Space Architecture Technical Committee
# Meeting Minutes
# 2012/07/27 21:00 UTC
# Teleconference

Reported by Ted Hall, 2012/09/03

## 1.    Roll Call

Ted Hall (SATC Chair) called the meeting to order at 21:05 UTC and took the roll call.

Total members:            35
Participating members:    12

The SATC roster appears below.  Membership categories are: Associate (A), Regular (R), International (I).  Members participating in this telecon are indicated by ✓ .

| | | | |
|---|---|---|---|
| ✓ | Payam Bahrami (I) | | Barbara Imhof (I) |
| ✓ | Olga Bannova (R) | | Päivi Jukola (I) |
| | Donald Barker (R) | | Mark Kerr (R) |
| | Annette Barnes (R) | ✓ | Shahzad Khaligh (R), Treasurer |
| | Lynn Baroff (R) | ✓ | François Lévy (R), Secretary |
| | Torben Berns (I) | ✓ | Renée Matossian (R) |
| | Maijinn Chen (R) | | Susmita Mohanty (I) |
| | Marc Cohen (R) | ✓ | David Nixon (I) |
| | Silvano Colombano (R) | | Regina Peldszus (I) |
| ✓ | Ondrej Doule (I) | | Georgi Petrov (R) |
| | Donna Duerk (R) | | Martina Pinni (I) |
| | Maria João Durão (I) | ✓ | Raúl Pólit Casillas (I) |
| | Michael Fox (R) | | Tomas Rousek (I) |
| | John Gulliford (R) | | Brent Sherwood (R) |
| | Sandra Haeuplik-Meusburger (I) | | Jacky Silva (R) |
| ✓ | Ted Hall (R), Chair | | Frederick Slane (R) |
| ✓ | Patrick Harkness (I) | ✓ | David Wong (I) |
| ✓ | Scott Howe (R) | | |

Guests:                  0

This was our first meeting using the AIAA ReadyTalk conference account, provided to us through our parent Space and Missiles Group (SMG) within the AIAA.

"Committees are permitted to use their group telecom number up to 4 hours each month … Subcommittees fall under their TC or PC. For example, if a TC or PC has 4 subcommittees that want to use the number for one hour each during the month, that will be the committee's 4 hour usage for the month."

If an SATC subcommittee would like to use this account for their telecon, contact the Chair (Ted Hall) for instructions and help in scheduling it.

## 2. Subcommittee Reports

**Construction:**
Chair: Raúl Pólit Casillas
Reporting: Raúl Pólit Casillas

- *Book:*

  The book project is progressing. Five members have been meeting biweekly, organizing the Table of Contents and identifying experts.

- *Aliter III:*

  Raúl and the subcommittee worked early in the year to organize an "Aliter III" event for July 20 – the Friday following ICES – on the USS Midway aircraft carrier anchored at San Diego. However, the funding necessary to reserve the venue was not available.

**Education:**
Chair: Olga Bannova
Reporting: Olga Bannova, Ted Hall, Sandra Haeuplik-Meusburger (via e-mail)

- *Book:*

  The book project is stalled for lack of industry input, but not forgotten. The subcommittee hopes to revive it.

- *FAQ Brochure:*

  Ted Hall commented on the frequency of e-mail to info@spacearchitect.org from students and young professionals interested in careers in space architecture. He suggested that the Education subcommittee could produce an FAQ brochure, along the lines of, "So, you want to be a Space Architect …" This would be a relatively small but very valuable short-term project. It might also be a warm-up for organizing thoughts about the book. On 06/30 Ted uploaded an e-mail archive to a private area of the website: http://www.spacearchitect.org/private/SpaceArchQA.txt

- *Design Studio – Destination Moon:*

  Sandra Haeuplik-Meusburger reported via e-mail (at 10:48 UTC) on the "Destination Moon" design studio that she co-organized at the Technische Universität Wien.  Marc Cohen, Regina Peldszus, Tomas Rousek, and Andreas Vogler participated as lecturers and critics.

**Human Factors & Design:**
Chair:  Päivi Jukola
Reporting:  Päivi Jukola (via e-mail), Ted Hall

- *Three-Year Goals:*

  Päivi e-mailed a document (at 19:24 UTC) outlining three-year goals to develop the subcommittee into a primary source of information for HFD, with outreach to professionals and students, through societies such as the UIA and AIA as well as a web library and e-newsletter or journal.

- *Competition:*

  Ted cited a small competition hosted by the AIAA Intelligent Systems TC that challenged middle- and high-school students to create short YouTube videos describing their definition of an intelligent system.  He suggested that a small competition on that scale might be a good short-term goal for the HF&D subcommittee, achievable within a year: challenge students to produce little YouTube videos describing concepts for space architecture, for a modest prize; the winner being the one that deals most realistically with space human factors.

  There was some discussion on this topic in the weeks prior to the telecon.  Ted first suggested it in e-mail (on 06/30) to the HF&D and P&L subcommittees – the idea being that HF&D could organize the entries and judging and P&L could organize sponsorship.  It started to balloon into talk of a serious professional-level architectural design competition, though that was not the original intent.

**Professional & Liaison:**
Chair:  Renée Matossian
Reporting:  David Nixon, Raúl Pólit Casillas, Regina Peldszus, Renée Matossian

- *Competition (continued):*

  Continuing the discussion of the competition.  David Nixon had commented via e-mail:  "My own view is that just another lunar base or Mars base design exercise is not enough.  It needs to be something more visionary.  Something new …"

  In the telecon he suggested the theme of "Skylab 2," noting that 2013 will be the 40th anniversary of the original Skylab: launched 14 May 1973, abandoned 8 February 1974.

- *Exhibition – Building Technological Habitats:*

  Raúl Pólit Casillas commented briefly on the exhibition that he curated earlier this year at the Instituto Valenciano de Arte Moderno: "Building Technological Habitats," the first of four planned exhibitions under the theme title of "Inhabiting Cosmos."

  Following the telecon, he e-mailed more details to the membership (on 08/22). Participants included David Nixon (senior adviser), Brent Sherwood, Scott Howe, Constance Adams, Georgi Petrov, Michael Fox, Barbara Imhof, Susmita Mohanti and Hugh Broughton.

- *Public talk:*

  Regina Peldszus reported via e-mail (on 07/26): "I'm giving a space design/architecture related talk in Mexico City at a cultural event about space just before IAC in September."

- *Website Gallery:*

  Renée Matossian reported on the web gallery status. She has collected graphic content from our *Out of This World* book and has some web templates. Ted noted that Tomas Rousek and John Doehring have volunteered to redesign and re-implement the SpaceArchitect.org website, and suggested that Renée send a ZIP archive of the gallery material so that it can be incorporated into the new design.

**Media:**
    Chair:  Tomas Rousek
    Reporting:  David Wong, Ted Hall, Jacky Silva, Ondrej Doule, David Nixon

    The website gallery and website redesign segue into the Media subcommittee.

- ***Orbit** Newsletter:*

  David Wong and Donald Barker launched our *Orbit* newsletter for space architecture in May 2012. They welcome ideas for content and would especially welcome wider participation in the monthly poll. It takes only a few minutes to read the question and click through a response. For example, the July poll noted that we're at the end of our Ten Year Plan and asked members to indicate how we should strategize for the next ten. 37.5% (3/8) chose "do more, try more," an equal number (3/8) chose "do less, but bigger," and 25% (2/8) chose "other." Nobody (0/8) chose "status quo."

- *Website Design and Maintenance:*

  As mentioned, Tomas Rousek has been working on a graphic redesign of the SpaceArchitect.org web site, and John Doehring has offered to help program it.

  Ted has placed some content on the SATC's web space in the AIAA domain at https://info.aiaa.org/tac/SMG/SATC/default.aspx so that it's not empty. He posted a

link back to http://www.spacearchitect.org, some calendar entries for conference deadlines, and some meeting minutes. David Wong has posted back issues of the *Orbit* newsletter. Ondrej Dould has offered to help migrate some bureaucratic content (e.g., SATC committee structure) to there from the SpaceArchitect site.

- *Facebook:*

    Prior to the telecon, Jacky Silva had proposed via e-mail (on 07/25) that we discuss establishing a Space Architecture presence on Facebook. Brent Sherwood had suggested that in 2010. (See the telecon minutes of 2010/01/26.) Several members expressed enthusiasm.

    Following the telecon, (on 08/01) Ondrej Doule announced that the page is open at https://www.facebook.com/SpaceArchitect.org. He and Jacky have full administrative privileges. David Wong may post Orbit newsletter issues there. He could collect poll results from the general public but keep them separate from SpaceArchitect member results.

- *AIA KnowledgeNet and Blog:*

    This wasn't discussed during the telecon, but came up shortly afterward on (08/07) and is worth reporting here. The AIA (American Institute of Architects) KnowledgeNet community for Space Architecture, which David Nixon worked to establish in 2010, has been closed by AIA due to lack of activity. After discussions with AIA staff, David has established a space architecture blog in its place. His initial post is at http://network.aia.org/AIA/Blogs/ViewBlogs/, currently near the bottom of page 2. Please help to keep it alive. At least, visit and click the "Recommend" button. The direct permalink (copy and paste into your browser) is http://network.aia.org/AIA/Go.aspx?c=BlogViewer&BlogKey=12525ad0-b1bc-4aa2-b9a5-d8cb695b09eb

**Public Policy:**
  Chair:  Brent Sherwood
  Reporting:  Brent Sherwood (via e-mail)

  Brent Sherwood is the SATC liaison to the AIAA Public Policy Committee (PPC). Earlier this year (on 04/01) he organized the SATC's "Questions for the Presidential Candidates" as part of the broader AIAA/PPC effort. He reported via e-mail (on 05/16): "our input on questions AIAA should put to the Presidential candidates appears to have had an effect: see the first three 'questions' of the final list."

  Following the telecon, (on 08/17) the PPC solicited input from the TCs regarding "Key Issues" for Congressional Visits Day (CVD) 2013. Brent collected SATC input and organized our response over the Labor Day holiday weekend. (Labor Day in the USA is the first Monday of September.)

**Standards:**

    Chair:  Marc Cohen (nominated by Ted)
    Reporting:  Ted Hall

Ted has been gently twisting Marc's arm to resume direction of work toward the production of a volume standard for space habitats, which Marc championed ten years ago.  When we were still just a Working Group and then a Subcommittee of the Design Engineering Technical Committee (DETC), in 2003, we thought we were on the verge of providing a chapter on this for the DETC's *AIAA Aerospace Design Engineers Guide*.  Unfortunately, Marc's intern was unable to complete the work, and Marc's subsequent career responsibilities have precluded him from working on it.

Three years later, (on 2006/01/06) Andreas Vogler e-mailed: "I need to stir up a discussion we had before and want to suggest, that we establish and issue a standard for volume and area measurements and definitions."

Another two years later, (on 2008/04/03) Susmita Mohanty e-mailed: "I have attached 2 documents that triggered my decision to look-up all possible methods that have been used to estimate volumes (both pressurized and habitable) of human-rated habitation and transportation systems.  It is a shame that even after nearly 50 years, we still do not have a proper, well-researched method to carry out these estimates." (Not quite the same issue as standard definitions, but a well-defined volume standard seems to be a prerequisite to meaningful volume estimates.)

Another four years later, (on 2012/06/30) Ted Hall zipped what he could find of the work that was done and uploaded it to a private area of the SpaceArchitect.org website:  http://www.spacearchitect.org/private/VolumeStd.zip (27.8 MB).  If anyone is interested in pursuing this project, please contact Ted.  This should ideally be someone who is not already committed to other TC or subcommittee work.

Fred Slane can provide guidance on the AIAA standardization process, but as a member of the AIAA Standards Executive Council he is prohibited from chairing the effort.

**Treasurer:**  Shahzad Khaligh

Shahzad reported that the SATC account balance is $650.  (Of that, $100 is already committed to the award for Best Paper in Space Architecture for 2011.)

The SpaceArchitect.org account balance is coincidentally nearly equal: $600.

SATC members are asked to contribute $15 annually for the maintenance of the SpaceArchitect.org web site.  Use the PayPal button on the "members" page at http://www.spacearchitect.org/ (click "members" in the left-side menu).

## 3.    Conference Reports, 2012

**Global Space Exploration Conference (GLEX)**
2012/05/22-24
Washington, DC, USA
Reporting:  Ted Hall

    3  SATC members presented papers (according to e-mail that Ted has received): Marc Cohen, Scott Howe, Brent Sherwood.

**International Conference on Environmental Systems (ICES)**
2012/07/15-19
San Diego, California, USA
Reporting:  Ondrej Doule

    4  Space Architecture sessions chaired by Ondrej Doule on 07/17-18 (Tue-Wed).
  27  abstracts accepted.
  12  papers accepted and presented (2 student papers via WebEx).
   0  no-shows (not counting the 2 WebEx presentations).
   4  SATC members presented papers: Marc Cohen, Scott Howe, Raúl Pólit Casillas, Brent Sherwood.
   7  SATC members attended:

    Marc Cohen
    Ondrej Doule
    Ted Hall
    Scott Howe
    Raúl Pólit Casillas
    Brent Sherwood
    Jacky Silva

**AIAA Space Conference & Exhibition**
2012/09/28-30
Pasadena, California, USA
Reporting:  Shahzad Khaligh, François Lévy

Continuing collaboration with the Space Automation & Robotics TC (SARTC) to organize the Robotic Technology and Space Architecture (RSA) track.

    7  total sessions in the RSA track.
    2  Space Architecture paper sessions chaired by Shahzad Khaligh (RSA-02) and François Lévy (RSA-07).
    6  Space Architecture papers (3 per session).
    1  imbedded panel session chaired by François Lévy (RSA-06), still in development.
    2  SATC members presenting papers: Marc Cohen, Scott Howe.

**International Astronautical Congress (IAC)**
  2012/10/01-05
  Naples, Italy
  Reporting:  Olga Bannova, Regina Peldszus (via e-mail), Ted Hall

> 5  SATC members supporting sessions as chairs or rapporteurs: Olga Bannova, Barbara Imhof, Päivi Jukola, Regina Peldszus, Brent Sherwood
> 6  sessions (D3.2, D3.4, D4.1, E5.3, E5.4, E5.5A) supported by those SATC members.  The number was originally 5 sessions, but session E5.4 spun-off E5.5A due to the large number of papers.
> 5  SATC members presenting papers in those sessions: Olga Bannova, Sandra Häuplik-Meusburger, Scott Howe, Barbara Imhof, Raúl Pólit Casillas

**Action Items:**

3.1    Session Chairs:  Nominate papers for the Best Paper Certificate of Merit for 2012.

## 4.    Best Paper Certificate of Merit

The chairs of the Space Architecture sessions at ICES, AIAA Space, and IAC, are asked to nominate papers from their sessions.  Nominee authors are not required to be AIAA members; any paper presented in any of our sessions may qualify.

A cash prize of $100 USD will be sent to the corresponding author of the winning paper, paid from the SATC account.

The Certificate for the 2011 Best Paper was presented to the authors at the 2012 ICES banquet.  The paper (AIAA 2011-5018) had been presented at the 2011 ICES.

**Action Items:**

4.1    SATC Members:  Volunteer to serve on the Best Paper selection committee.  Let Ted know if you're willing and able to serve.  We will need to select a Best Paper from a pool of about 8 nominees (depending on the session chairs), before the end of the year.

## 5.    Conference Planning, 2013-2014

**International Conference on Environmental Systems (ICES)**
  2013/07/14-18
  Vail, Colorado, USA

The Call for Papers has already been released, as of 07/23.  Abstracts are due on 11/01.  The Space Architecture session is still 502, and Ondrej Doule is still listed as the organizer.  If anyone else would like to get involved as an organizer, please contact Ted and Ondrej.

2014/07/??
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In 2014 with the "new event model," AIAA plans to include ICES in its Propulsion and Energy Forum. The selection of this forum has nothing to do with subject matter and everything to do with timing. The original plan was to include ICES in the Space and Astronautics Forum, but the ICES international contingent objects to the later date planned for that forum and insists that ICES keep its traditional July timing. Neither forum yet appears on the AIAA calendar.

Ted discussed this informally with David Klaus, from the Life Sciences and Systems TC (LSSTC), at ICES this year. LSSTC is one of the five chartered co-sponsoring committees that form the ICES Steering Committee. (SATC is not.) David indicated that there's still a lot of discussion and some uncertainty regarding ICES plans for 2014 and beyond.

**AIAA Space Conference & Exhibition**
2013/09/10-12
San Diego, California, USA

The plan thus far is to continue collaboration with SARTC in the Robotic Technology and Space Architecture track, with Shahzad Khaligh and François Lévy as co-organizers for the SATC.

2014/??/??
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In 2014 with the "new event model," AIAA plans to include the Space conference in its Space and Astronautics Forum. The forum does not yet appear on the AIAA calendar.

**International Astronautical Congress (IAC)**
2013/09/23-27
Beijing, China

2014/09/26 – 10/03
Toronto, Ontario, Canada

**Union Internationale des Architectes (UIA) World Congress**
2014/08/03-10
Durban, South Africa

Päivi Jukola suggests participation by space architects. It's not yet clear what form this participation would take – e.g.: technical paper session, panel discussion, …

**Action Items:**

5.1　SATC members:  We need a discussion regarding our conference strategy beginning in 2014.  Should we continue to divide our attention between ICES and AIAA Space, or should we focus our efforts and try to make a bigger splash in the Space and Astronautics Forum – including possibly trying to get in at the "ground floor" of the forum organization?  If the latter, we need to start acting very soon. I have heard opinions on both sides.

5.2　Päivi Jukola:  Liaise with the UIA World Congress organizers and develop a proposal for SATC participation.

## 6.　*Aerospace America* "Year in Review" Article

David Nixon graciously accepted Ted's nomination to once again pull together the SATC's "Year in Review" article for *Aerospace America*.  Olga Bannova, Ondrej Doule, and Raúl Pólit Casillas offered to supply words and images regarding various newsworthy projects and events.

David completed the article and submitted it to the editor on 08/23.

## 7.　Meeting Adjourned

The teleconference adjourned at 2012/07/27, approximately 22:30 UTC.