

## Preliminary Programme

**Tuesday, 12 June 2007**

08:00 Registration

09:00 Opening

### Session 1: Space Exploration

09:30 Assessment of Thermally Induced Anomalies during Surface Operations on Mars  
*Hoffman, A.; Man, K.; Green, N.; Shapiro, A.*  
*Jet Propulsion Laboratory (United States)*

09:55 Effective Testing of the Mars Ballon Archimedes between Low Requirements and ECSS-standards  
*Bayler, K.*  
*IABG (Germany)*

10:20 Exploration (tbd)

10:45 *Coffee Break*

### Session 2a: Facility Improvements

11:05 The ESTEC New Quad Head Expander Project  
*Touzelet, P.<sup>1</sup>; Piret, G.<sup>2</sup>; Popovitch, A.<sup>2</sup>*  
*<sup>1</sup>Sereme (France); <sup>2</sup>ESTEC (Netherlands)*

11:25 Improvement of Acoustic Noise Control in the LEAF Facility  
*Teichert, W.; Gil-Gómez, G.; Salles, R.; Piret, G.*  
*ESA-ESTEC (Netherlands)*

11:45 The New Mechanical Data Handling Concept at IABG  
*Grillenbeck, A.; Dillinger, S.; Prause, S.*  
*IABG (Germany)*

12:05 KARI's Data Acquisition and Power Supply Control System (KADAPS) for Large Thermal Vacuum Chamber  
*Cho, H.; Moon, G.W.; Seo, H.J.; Lee, S.H.; Choi, S.W.*  
*Korea Aerospace Research Institute (Korea, Republic of)*

12:25 Research on High Frequency Performance of Large Reverberation Chamber  
*Xu, X.X.Q.; Geng, L.-Y.; Li, X.-M.; Zhang, J.-G.*  
*Beijing Institute of Spacecraft Environment Engineering (China)*

12:45 Slip Ring Unit for the ESTEC Test Centre  
*Krummen, M.<sup>1</sup>; Debeule, K.<sup>2</sup>*  
*<sup>1</sup>RUAG Aerospace (Switzerland); <sup>2</sup>ESA/ESTEC (Netherlands)*

13:05 *Lunch Break*

## Session 2b: Videogrammetry

- 11:05 Qualification Test of the Dyneema Cables and REED sensors for the Mechanism of the Miniaturised Videogrammetry System  
Thirkettle, A.<sup>1</sup>; Appolloni, M.<sup>2</sup>; Casarosa, G.<sup>2</sup>  
<sup>1</sup>ESA (Netherlands); <sup>2</sup>AOES B.V. (Netherlands)
- 11:25 Instrumentation for the New Videogrammetry System: Development of a Flashing System to be Used in Thermal Vacuum  
Casarosa, G.<sup>1</sup>; Appolloni, M.<sup>1</sup>; Cozzani, A.<sup>2</sup>  
<sup>1</sup>AOES BV (Netherlands); <sup>2</sup>ESA (Netherlands)
- 11:45 Validation in Ambient Conditions of Strategy for Deformation Monitoring of the Herschel Spacecraft by Photogrammetry  
Amiri Parian, J.<sup>1</sup>; Gruen, A.<sup>1</sup>; Cozzani, A.<sup>2</sup>; Sarti, B.<sup>2</sup>  
<sup>1</sup>ETH Zurich (Switzerland); <sup>2</sup>ESA-ESTEC (Netherlands)
- 12:05 Photogrammetric Cryo Measurements of ESA's Planck Telescope Structures  
Amiri Parian, J.<sup>1</sup>; Gruen, A.<sup>1</sup>; Riti, J.-B.<sup>2</sup>; Cozzani, A.<sup>3</sup>  
<sup>1</sup>ETH Zurich (Switzerland); <sup>2</sup>Alcatel Alenia Space (France); <sup>3</sup>ESA-ESTEC (Netherlands)
- 12:25 Adaptation of the Large Space Simulator for the Planck Space Telescope FM Videogrammetry Test  
Hagelschuer, D.; Messing, R.; Westera, R.  
ESA/ESTEC (Netherlands)
- 12:45 Network and System Design for a Photogrammetric Measurement of Large Space Structures  
Amiri Parian, J.<sup>1</sup>; Gruen, A.<sup>1</sup>; Tavares, A.<sup>2</sup>; Cozzani, A.<sup>2</sup>; Sarti, B.<sup>2</sup>  
<sup>1</sup>ETH Zurich (Switzerland); <sup>2</sup>European Space Research and Technology Center (ESTEC) (Netherlands)
- 13:05 Lunch Break

## Session 3a: New Facilities I

- 14:15 Thermal Test Facility for Manned Spacecraft Extra-Vehicular Activities  
Tao, T.; Qie, D.F.; Wei, C.F.  
China Academy of Space Technology (China)
- 14:35 Thermal System for Phenix, the New ESTEC Thermal Vacuum Chamber  
Grodent, C.<sup>1</sup>; Cucchiario, A.<sup>2</sup>; Jamotton, P.<sup>2</sup>; Guiot, M.<sup>2</sup>; Suchail, J.L.<sup>3</sup>  
<sup>1</sup>Centre Spatial de Liège (Belgium); <sup>2</sup>CSL (Belgium); <sup>3</sup>ESTEC (Netherlands)
- 14:55 Design and Application of a Helmholtz Cage for Testing Nano-satellites  
Poppenk, F.M.; Amini, R.  
Delft University of Technology (Netherlands)
- 15:15 Project of Creation Kazakhstan AITC on Baykonur  
Jaimurzin, A.; Nauryzbaev, M.; Moldabekov, M.  
JSC Kazkosmos (Kazakhstan)
- 15:35 Thermal Vacuum Test Ability in CAST  
Qie, D.F.; Yuan, W.F.; Tao, T.  
China Academy of Space Technology (China)
- 15:55 Coffee Break

### Session 3b: Thermal Test

- 14:15 Environmental Change in Thermal Vacuum Chamber caused by Blackout at JAXA  
Myojin, E.; Saitoh, S.  
*Jaxa (Japan)*
- 14:35 Design and Experimental Research of Reproduction of Radiant Thermal Loading on SC at Thermal Vacuum Tests  
Kopyatkevich, R.<sup>1</sup>; Mishin, G.<sup>1</sup>; Sakva, N.<sup>1</sup>; Altov, V.<sup>1</sup>; Shcherbakov, E.<sup>2</sup>  
<sup>1</sup>*TSNIIMASH (Russian Federation)*; <sup>2</sup>*RSC "Energia" (Russian Federation)*
- 14:55 Design Aspects for the Installation of an Automatic Operation Mode for a Thermal Vacuum Chamber  
Deutsch, G.; Schneider, A.; Görner, E.  
*IABG (Germany)*
- 15:15 Herschel Telescope Thermal Testing in CSL Focal 6.5 Chamber  
Tychon, I.<sup>1</sup>; Ninane, N.<sup>1</sup>; Grodent, C.<sup>1</sup>; Jamotton, P.<sup>1</sup>; Liebecq, S.<sup>1</sup>; Cucchiaro, A.<sup>1</sup>; Jung, P.<sup>2</sup>  
<sup>1</sup>*Centre Spatial de Liège (Belgium)*; <sup>2</sup>*EADS SAS (France)*
- 15:35 Thermal Balance Test on SMOS PLM  
Gamonal, A.; Luengo, P.  
*EADS CASA Espacio (Spain)*
- 15:55 *Coffee Break*

### Session 4a: New Facilities II

- 16:15 Conversion of 10 Foot Space Simulation Chamber into, an Ion Propulsion Engine Life Test Facility  
Van Velzer, P.  
*Jet Propulsion Laboratory (United States)*
- 16:35 New Technology for Aerospace Sensors. Satellite Dynamic and Thermal Measurements Using Fiber Optic FBG Sensors  
Paris, C.<sup>1</sup>; Bramante, A.<sup>2</sup>; Caponero, M.<sup>3</sup>; Coppotelli, G.<sup>1</sup>; Cotogni, M.<sup>4</sup>; Paolozzi, A.<sup>1</sup>; Peroni, I.<sup>1</sup>  
<sup>1</sup>*Sapienza University of Rome (Italy)*; <sup>2</sup>*ESA-ESTEC (Italy)*; <sup>3</sup>*ENEA – Frascati Research Center (Italy)*; <sup>4</sup>*Alcatel/Aleniaspace (Italy)*
- 16:55 Development of a Plasma Chamber with an Electroconductive Shroud for Solar Panel Testing  
Miyamoto, M.; Saitoh, M.; Nitta, K.  
*Japan Aerospace Exploration Agency (Japan)*
- 17:15 Development of Large Thermal Vacuum Chamber (Φ8m X L10m)  
Lee, S.H.<sup>1</sup>; Seo, H.-J.<sup>1</sup>; Cho, H.<sup>1</sup>; Moon, G.-W.<sup>1</sup>; Choi, S.-W.<sup>1</sup>; Yoo, S.-Y.<sup>2</sup>  
<sup>1</sup>*Korea Aerospace Research Institute (Korea, Republic of)*; <sup>2</sup>*Chung-nam National University (Korea, Republic of)*
- 17:35 Facilities for Experimental Validation of Stability under Environmental Factors and Special Characteristics of Rocket and Space Equipment  
Bobrov, A.V.; Semashko, V.V.; Ivanyko, G.A.  
*FSUE "NPO Mashinostroyenia" (Russian Federation)*
- 17:55 *Cocktail Party*

## **Session 4b: Mechanical Test**

- 16:15 Determination of C2 of the Force Limited Semi-Empirical Method for Any Structure with Driven-Base Excitation  
*Marchand, P.<sup>1</sup>; Singhal, R.<sup>2</sup>; O'Grady, M.<sup>2</sup>*  
*<sup>1</sup>Routes Astro Inc (Canada); <sup>2</sup>Canadian Space Agency (Canada)*
- 16:35 The Analysis of Satellite Load-Born Canister Vibration Test  
*Zhang, J.-G.; Yue, Z.-Y.; Feng, Y.-Q.*  
*Beijing Institute of Spacecraft Environment Engineering (China)*
- 16:55 Real Time Modal Identification for Ambient Vibration Testing  
*Girard, A.; Cavro, E.*  
*INTESPACE (France)*
- 17:15 A Redundant Safety Circuit for Vibration Testing  
*Baumgartl, R.*  
*IABG (Germany)*
- 17:35 The Integration of Modal Analysis in Vibration Qualification Testing  
*Britte, L.*  
*LMS International (Belgium)*
- 17:55 Cocktail Party**

**Wednesday, 13 June 2007**

**Session 5: System Verification**

- 09:00 Importance of Establishing Space System Verification Program Planning and Execution  
Nagano, S.  
*The Aerospace Corporation (United States)*
- 09:25 Environmental Assurance Program for NASA's Phoenix Project  
Man, K.; *Natour, M.; Hoffman, A.*  
*Jet Propulsion Laboratory - CALTECH (United States)*
- 09:50 Qualification Testing of the Herschel Satellite  
Alberti, V.M.<sup>1</sup>; *Jahn, G.*<sup>1</sup>; *Montet, D.*<sup>2</sup>; *Teichert, W.*<sup>3</sup>; *Schnorhk, A.*<sup>4</sup>  
<sup>1</sup>*EADS Astrium Satellites (Germany)*; <sup>2</sup>*Alcatel Alenia Space (France)*; <sup>3</sup>*European Test Services (Netherlands)*; <sup>4</sup>*ESTEC (Netherlands)*
- 10:15 Implementation of Leak Test Methods for the ISS Elements, Systems, and Components  
Underwood, S.<sup>1</sup>; *Lvovsky, O.M.*<sup>2</sup>  
<sup>1</sup>*The Boeing Company (United States)*; <sup>2</sup>*ARES (United States)*
- 10:40 Lessons Learned on a Series of Micro Satellite Thermal Vacuum Tests  
*Chang, M.S.*; *Huang, J.D.*; *Tsai, J.R.*  
*National Space Organization (Taiwan)*
- 11:05 *Coffee Break*

**Session 6a: Test Effectiveness**

- 11:25 Mat€d Initiative Results And Perspectives  
*Messidoro, P.*<sup>1</sup>; *Brunner, O.*<sup>2</sup>; *Wagner, M.*<sup>2</sup>; *Bader, M.*<sup>3</sup>; *Anello, G.*<sup>4</sup>; *Salvoni, I.*<sup>4</sup>; *Pasquinelli, M.*<sup>5</sup>; *Cerrato, A.*<sup>6</sup>  
<sup>1</sup>*Alcatel Alenia Space - Italia S.p.A. (Italy)*; <sup>2</sup>*ESA (Netherlands)*; <sup>3</sup>*EADS/Astrium GmbH (Germany)*; <sup>4</sup>*Sofiter (Italy)*; <sup>5</sup>*Politecnico di Torino (Italy)*; <sup>6</sup>*Reply S.p.A. (Italy)*
- 11:45 Model and Test Effectiveness Database (MAT€D): Introduction and Examples of Application  
*Journier, H.*; *Montrone, L.*; *Wagner, M.*  
*ESA-ESTEC (Netherlands)*
- 12:05 Data Specifications and Analysis Methods for the Assessment of Operational and Pre-Flight Anomalies  
Dhallin, A.; *Tosney, W.*; *Wong, B.*  
*The Aerospace Corporation (United States)*
- 12:25 Data Transfer Link2: 3D Visualisation Client at Customer Premises  
Guijt, H.<sup>1</sup>; *Debeule, K.*<sup>2</sup>  
<sup>1</sup>*TERMA (Netherlands)*; <sup>2</sup>*ESA/ESTEC (Netherlands)*
- 12:45 Tests Costs Saving by Improving the Technical Data Management  
*Cavro, E.*  
*Intespace (France)*
- 13:05 *Lunch Break*

## Session 6b: Mechanical Test II

- 11:25 Testing and Characterization of ISS Pressurized Modules Versus on-orbit Vibro-acoustic Environment - Lessons Learned  
*Marucchi-Chierro, P.-C.<sup>1</sup>; Destefanis, S.<sup>1</sup>; Cabodi, G.<sup>1</sup>; Quagliotti, F.<sup>1</sup>; Riva, N.<sup>2</sup>*  
<sup>1</sup>Alcatel Alenia Space (Italy); <sup>2</sup>Software's Engineering (Italy)
- 11:45 Investigation of Vibration Response Due to Fill Effect of Spacecraft  
*Shi, Q.*  
JAXA (Japan)
- 12:05 Simplified Prediction Method for Pyroshock Responses of the Composite Panel in Space Satellite Systems  
*Iwasa, T.; Shi, Q.; Saitoh, M.*  
Japan Aerospace Exploration Agency (Japan)
- 12:25 Experimental Determination of Acoustic Loads During Launches of Strela LV and Calculation of Test Modes for a Spacecraft to be Delivered by it to Space  
*Nosatenko, P.Y.; Bobrov, A.V.; Baranov, M.L.; Shlyapnikov, A.N.*  
FSUE "NPO Mashinostroyenia" (Russian Federation)
- 12:45 Design and Performance of a Gaseous Nitrogen Generator for Acoustic Facility  
*Crispel, S.<sup>1</sup>; Courty, J.C.<sup>1</sup>; Le Diouron, R.<sup>1</sup>; Jezequel, L.<sup>2</sup>*  
<sup>1</sup>Air Liquide (France); <sup>2</sup>Alcatel Alenia Space (France)
- 13:05 *Lunch Break*

## Session 7: Workshop Integration & Test for Multiple Spacecraft

14:00- 17:00

Topics for discussion :

- phasing of integration and test of multiple spacecraft (s/c)
- multiple s/c in the same chamber
- multiple launch
- testing & facility resources
- personnel resources
- funding issues and cost approach
- logistics, tracking procedures and work orders in view of possible minor differences
- functional test split up
- functional test with s/c in close proximity
- pre-launch activities

18:00 *Conference Dinner*

**Thursday, 14 June 2007**

**Session 8a: Special Tests, Alignment 1**

09:00 Correlation between Real-life Degradation and Accelerated Ageing Results of Epoxy-Aluminium Assemblies

*Chevalier, M.<sup>1</sup>; Dantras, E.<sup>1</sup>; Tonon, C.<sup>2</sup>; Guigue, P.<sup>3</sup>; Lavabanne, C.<sup>1</sup>; Puig, C.<sup>2</sup>; Durin, C.<sup>3</sup>*

<sup>1</sup>Laboratoire de Physique des Polymeres - CIRIMAT - Universite Paul Sabatier (France);

<sup>2</sup>Astrium (France); <sup>3</sup>CNES (France)

09:20 Spacecraft Alignment Measurements Accreditation and Development

*Tavares, A.<sup>1</sup>; Sablerolle, S.<sup>2</sup>*

<sup>1</sup>ESA/ESTEC (Netherlands); <sup>2</sup>Stork FDO (Netherlands)

09:40 COROT Baffle: Development, Alignment and Testing Activities

*Ratti, F.<sup>1</sup>; Tavares, A.<sup>1</sup>; Gavira, J.<sup>1</sup>; Plesseria, J.-Y.<sup>2</sup>; Lemmens, E.<sup>3</sup>*

<sup>1</sup>ESTEC (Netherlands); <sup>2</sup>CSL (Belgium); <sup>3</sup>Verhaert (Belgium)

10:00 Innovative Antenna Test Facility for Millimeter Wave Applications

*Garreau, Ph.<sup>1</sup>; Duchesne, L.<sup>1</sup>; Foged, L.J.<sup>2</sup>; Durand, L.<sup>1</sup>*

<sup>1</sup>SATIMO (France); <sup>2</sup>SATIMO (Italy)

10:20 *Coffee Break*

**Session 8b: Contamination, Electromagnetics**

09:00 Organic Contaminant Molecules' Behavior in Thermal Vacuum Environment

*Saruwatari, H.<sup>1</sup>; Baba, N.<sup>1</sup>; Saitoh, M.<sup>1</sup>; Hosogai, A.<sup>2</sup>*

<sup>1</sup>Japan Aerospace Exploration Agency (Japan); <sup>2</sup>Japan Manned Space Systems Corporation (Japan)

09:20 Contamination Inspection by a Micro-camera Sensor System for Launchers and Vacuum Facilities

*Schmeitzky, O.<sup>1</sup>; Appolloni, M.<sup>2</sup>; Cozzani, A.<sup>1</sup>; Casarosa, G.<sup>2</sup>*

<sup>1</sup>ESA-ESTEC (Netherlands); <sup>2</sup>AOES B.V. (Netherlands)

09:40 Preventing Electrical Overstress During EMC Testing

*Erickson, K.; Whittlesey, A.*

*Jet Propulsion Laboratory/Caltech (United States)*

10:00 Qualification of the Magnetic Field Simulation Facility MFSA for AC-Measurements

*Kuegler, H.; Müller, K.*

*IABG (Germany)*

10:20 *Coffee Break*

## Session 9a: Special Tests, Alignment 2

- 10:40 Impact of the Fluids Used During All Propulsion Tests  
Morabito, G.; Ernetti, U.; Stoll, T.  
*Alcatel Alenia Space (Italy)*
- 11:00 Proton Irradiation at Cryogenic Temperatures of Sintered SiC and its Electrical Behaviour  
Keil, W.<sup>1</sup>; Roure, S.<sup>2</sup>; Huber, J.<sup>3</sup>; Stiehle, H.<sup>3</sup>; Guy, B.<sup>4</sup>; HarboeSorensen, R.<sup>2</sup>; Rummler, P.<sup>2</sup>  
<sup>1</sup>EADS Astrium (Germany); <sup>2</sup>ESA/ESTEC (Netherlands); <sup>3</sup>EADS Astrium, Friedrichshafen (Germany);  
<sup>4</sup>UCL, Louvain la Neuve (Belgium)
- 11:20 Methods for Validation of Strength and Stability under Environmental Factors for Rocket and Space Equipment by Testing at Special Shock Stands  
Bobrov, A.V.; Ivanyko, G.A.; Nikitenko, V.I.  
*FSUE "NPO Mashinostroyenia" (Russian Federation)*

## Session 9b: Simulations

- 10:40 VRAIV: A Virtual Reality OSystem for Simulating AIV Procedures  
Guijt, H.  
*Terma (Denmark)*
- 11:00 Virtual Testing Simulation Tool for the New Quad Head Expander Electrodynamic Shaker  
Appolloni, M.<sup>1</sup>; Cozzani, A.<sup>2</sup>  
<sup>1</sup>AOES (Netherlands); <sup>2</sup>ESA/ESTEC (Netherlands)
- 11:20 LMS Virtual & Physical Prototyping Solutions: A New Frontier in Space Systems Development  
Manfron, E.; Betts, J.; Debille, J.; Olbrechts, T.  
*LMS International (Belgium)*
- 11:50-12:20 Closing Session
- 12:30-13:00      Tour to Test Facility      or  
                         Tour ISS User Centre**