# PLENARY SESSION

- N° 1 – **A350 Flight test campaign** – Patrick DU CHE - AIRBUS – France
- N° 2 – **nEUROn Flight test campaign** – Sylvain COURTOIS - DASSAULT AVIATION - France
- N° 3 – **SNCF Railway Rolling Stock Test Centre and Test in railway domain** –Franck BOURGETEAU – Daniel CHAVANCE - SNCF – France
- N° 4 – **Last news from Rosetta** – Philippe GAUDON – CNES – France
- N° 5 – **NASA's Optical Communications Program for 2015 and Beyond** – Donald CORNWELL – NASA – USA

# TECHNICAL PROGRAMME
# ORAL PRESENTATIONS

## SESSION N° 1 – Transducers, measurement devices – AIM2 research European Programme.
**Session chairman:** Fritz Boden – DLR - Germany

- N°1 - **Advanced In-flight Measurement Techniques** – Fritz Boden – DLR – Germany.
- N° 2 - **Recalibration of a Stereoscopic Camera System for in-flight Wing Deformation Measurements** - Tania Kirmse - DLR Göttingen – Germany.
- N° 3 **In-flight wing deformation measurements by image correlation technique on A350** - Benjamin Mouchet and Vincent Colman - AIRBUS Operation SAS – France
- N° 4 - **Rotating Camera System for Propeller and Rotor Blade Deformation Measurements** - Fritz Boden, Boleslaw Stasicki and Marek Szypula – DLR – Germany
- N° 5 - **Development of Fibre Optic Strain and Pressure Instruments for Flight Test on an Aerobatic Light Aircraft** - Nicholas Lawson, Ricardo Goncalves Correia, Ralph Tatam, Stephen James and Jim Gautrey - Cranfield University – United Kingdom
- N° 6 - **Recent achievements in Doppler lidars for aircraft certification** - Claudine Besson, Beatrice Augere, Agnès Dolfi-Bouteyre, William Renard and Guillaume Canat – ONERA – France
- N° 7 - **NURMSYS - New Upstream Rotating Measurement System for gas turbine exhaust gases analysis** - Betrand Carré, Sylvain Loumé and David Lalanne - AKIRA Technologies – France..

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## SESSION N°2 – Test data acquisition and recording
**Chairman Part 1:** Christian Herbepin – AIRBUS HELICOPTERS - France

- N° 1 - **FALCON 5X1 Flight Test Instrumentation** – Jean-Pierre Rouby – DASSAULT AVIATION – France
- N° 2 - **High speed development of a temperature remote acquisition system to reduce instrumentation heat sink in an aircraft engine** - Jean-Christophe Combier - AIRBUS Operation SAS – France.
- N° 3 – **Combined position, attitude measurement with precise time distribution for observation payload** - Emmanuel Sicsik-Pare, Gilles Boime and John Fischer – Spectracom – France – USA
- N° 4 - **Optimizing Bandwidth in an Ethernet Telemetry Stream using a UHF Uplink** - Moises Gonzalez-Martin and Pedro Rubio-Alvarez - AIRBUS DEFENCE AND SPACE – Spain
- N° 5 - **Flexible Switching for Flight Test Networks** – Diamuird Collins - Curtiss-Wright Defense Solutions, Avionics & Electronics – Ireland
- N° 6 - **Evolving embedded electronics testing in HIL simulation and largescale test cells through sub-ns synchronization systems via Time Sensitive Networks in Ethernet**- Kurt Veggeberg and Olivier Daurelles -National Instruments - United States, France

**Chairman Part 2:** Diarmuid CORRY – Curtiss-Wright Controls Avionic & Electronic - Ireland

- N° 7 - **PTPv1 vs PTPv2: Characteristics, differences and time synchronization performances** - Guillermo Martinez - Airbus Military – Spain
- N° 8 - **User Programmable FPGA I/O for Real-Time Systems – Combining User Friendliness, Performance, and Flexibility** – Yannick  Hildenbrand, Andreas Himmler and Jürgen Klahold - dSPACE GmbH – Germany
- N° 9 – **Guaranteed end-to-end latency through Ethernet** - Øyvind Holmeide and Markus Schmitz - OnTime Networks - Norway, United States
- N° 10 - **Lessons for Onboard Data Storage from the worlds of Electronic Data Processing and Airborne Video Exploitation** - Malcolm Weir - Ampex Data Systems Corporation – United States.
- N° 11 - **Cabin Comfort Flight Test Installation** - Joel Galibert, Aymeric Plo and Stephane Garay - AIRBUS Operation SAS – France
- N° 12 - **The research on wireless sensor network for the aerocraft measurement system** - Juan Lu, Ying Wang and Bingtai Liu - Beijing Institute of Aerospace Systems Engineering,- China

## SESSION N° 3: Big data and test data processing and analysis
### Chairman:  Guy Destarac – 3AF- France

- N° 1 - **How to Harness the Value of Iot / Fast Data / Big Data and Data Analytics Technologies for the Tests Community** - Frédéric Linder and Stéphane Biguet – Oracle – France
- N° 2 - **BigData applications for Telemetry** -Greg Adamski and Gilles Kbidy – L-3-Communications Telemetry-West – United States
- N° 3 - **Case Study: Proposal of Architecture for Big Data Adoption** - Luiz E. G. Vasconcelos, André Y. Kusumoto, Nelson P. O. Leite and Cristina M. A. Lopes- IPEV/ITA, ITA – Brazil
- N° 4 - **How Big Data technology brings added-value and agility during a flight campaign?** - Laurent Peltiers and Jean-Marc Prangère - AIRBUS operations – France
- N° 5 - **Big Analog Data - Extracting Business Value from Test & Telemetry Data** - Otmar Foehner, Robert Lee and Olivier Daurelles - National Instruments - United States, United Kingdom, France
- N° 6 - **Improving Test Cell Efficiency by Monitoring Measurements** - Gouby Aurélie - Snecma – France
- N° 7 – **Processing Ethernet Flight Test Data with Open Source Tools** – Paul Ferrill – Avionics Test and Analysis Corporation – United States

## SESSION n° 4 – ICTS (International Consortium for Telemetry Spectrum)
### Chairman: Jean-Claude GHNASSIA – 3AF – France

- N°1 - **Welcome and Introduction by ICTS Chair** J.-C. Ghnassia
- N°2 - **Regional Reports**:
        RI : J-C. Ghnassia
        RII: G.Mayer
        RIII: M.Ryan by J-C.Ghnassia
- N°3 - **"World Radiocommunication Conference 2015 (WRC-15) – Agenda Items Relative to Telemetry"** G. Mayer
- N°4 - **"C-band for Airbus telemetry : status and improvement"** L. Falga
- N°5  - **"Eurocopter's Conversion to C-band"** tbc
- N°6 – **Threats to aeronautical telemetry in USA : update #10.** S. Hoshar
- N°7 - **Conclusion and Closure** J.-C. Ghnassia

### SESSION n° 5 – Telemetry frequency (spectrum management), modulation, telemetry systems.
Chairman: Gilles FREAUD – Airbus – France

- N° 1 : **A new design to ground TM/TC communications for spacecraft launch campaign at Guiana Space Centre** - Nicolas Hugues and Michel Thomas - CNES , ZDS – France
- N° 2 : **The entry into service of C-band Telemetry at Airbus Test Centre: first result and way of improvement** - Luc Falga - AIRBUS Operations – France
- N° 3 – **Combining a Reed-Salomon block code with a blind equalizer: synchronization and bit error rate performance** - Alexandre Skrzypczak, Gregory Blanc and Tangi Le Bournault - Zodiac Data Systems – France
- N° 4 – **Limitation of the 2 antennas problem for aircraft telemetry by using a blind equalizer**. - Alexandre Skrzypczak, Gregory Blanc and Tangi Le Bournault - Zodiac Data Systems – France
- N° 5 - **A Gaussianization-based performance enhancement approach for coded digital PCM/FM** - Guojiang Xia, Xinglai Wang and Kun Lan -  Beijing Institute of Astronautical Systems Engineering – China
- N° 6 - **Real time C Band Link Budget Model Calculation** - Francisco-M-Fernandez – Airbus Space and Defence - Spain

### SESSION n° 6 – Space Telemetry
Chairman: Jean-Luc ISSLER - CNES – France

- N° 1 - **Rosetta-Philae RF link, from separation to hibernation** - Clément Dudal, Céline Loisel, Emmanuel Robert, Miguel Angel Fernandez, Yves Richard and Gwénaël Guillois - CNES, Syrlinks – France
- N° 2 - **JASON3, a story of TT&C interference handling** - Céline Loisel and Gérard Zaouche – CNES – France
- N° 3 - **Wavelet and source coding on Ariane 5 telemetry data** - Didier Schott - Airbus Defence & Space – France
- N° 4 – **Cubesat communication CCSDS hardware in S and X band** - Issler Jean-Luc and Lafabrie Philippe – CNES – France
- N° 5 - **Implementation of a high throughput LDPC decoder in space-based TT&C** – Wen Kuang, Nan Xie and Xianglu Li - Inst. Of electronic engineering, china academy engineering physics – China
- N° 6 - **The Implement of IP-Based Telemetry System of Launch Vehicle** - Feng Tieshan, Lan Kun and Zhao Weijun - Beijing Institute of Astronautical Systems Engineering - China

### SESSION n° 7 – MDL (Meta data language group)
Chairman: Lee H. ECCLES – Boeing - USA

  Programme tbc .
- Target of the group.
- Detail of the actual situation
- Discussion

### SESSION n°8 – ETSC (European Telemetry Standardization Committee)
Chairman: Gerhard MAYER – GMV Consulting – Germany

**Welcome & Introduction**                    **(G. Mayer)**
**1.   Committee Reports**
- **ETSC Subcommitees**
SC-1:Spectrum & Frequency Management  ( **J.-C. Ghnassia**, S. de Penna)
SC-2: Data Acquisition & Processing                    (**W. Lange**, Ch. Herpepin)
SC-3:Data Recording & Storage              (**B. Bagó**, P. Morel, S.W. Lyons )
SC-4: Networked Telemetry                    (**E. Schulze,** Ch. Eder)
- **Telemetering Standards Coordination Committee**(TSCC) (D. Corry)
- **Consultative Committee for Space Data Systems** (CCSDS) (R. Ritter)
**2.   Short Presentation & Discussion**
Briefing on the "Working Draft IRIG 106, Chapter 7" (**B. Bagó** )
**3.   New Business**
Membership standings, coming elections, preparation for the ETC 2016
**Conclusions & Adjourn**


# POSTER PRESENTATIONS
## SESSION n° P1 – TEST METHODS

- N° 1 - **Computational results for flight test points distribution in the flight envelope and dynamic relocation** - Lina Mallozzi, Alessandro D'argenio, Pierluigi De Paolis and Giuseppe Schiano - Dipartimento di Ingegneria Aerospaziale - Università degli Studi di Napoli "Federico II" – Italy
- N° 2 - **High-resolution electro-acoustic transducer for dielectric characterization of outer space materials** - Lucie Galloy-Gimenez, Laurent Berquez, Fulbert Baudoin and Denis Payan - LAPLACE, CNES – France
- N° 3 - **Non-contacting Methods with Lidar for Spacecraft Separation Ranging** - Shengzhe Chen, Hui Feng and Yuzhi Feng - Beijing Institute of Aerospace Systems Engineering – China
- N° 4 - **How do you go about achieving your video recorder? (Chapter 2)** - Pierrick Lamour and Loic Mauhourat – TDM – France
- N° 5- **SpaceWireless: Time-synchronized & reliable wireless sensor networks for Spacecraft** - Damon Parsy – Beanair – Germany

## SESSION n° P2 – TEST TOOLS AND SIMULATION

- N° 1 - **LTM scalable to the tests** - Sylvain Derlieu - AIRBUS OPERATIONS SAS – France
- N° 2 - **Optimized Automatic Calibration Tool. Application for Flight Test Programs** – Enrique Torello, Jose Manuel Baena, Lorenzo Miranda and Pilar Vicaria - AIRBUS DEFENCE AND SPACE – Spain
- N° 3 - **Means driven by tests** - Jerome Sartolou and Bruno Chaduteau – Nexeya – France
- N° 4 - **Design and implementation of LAN-based real-time simulation system of high frequency communication** -Rui Song, Daquan Li, Guangming Zhou and Guojiang Xia -  Beijing Institute of Astronautical Systems Engineering - China

## SESSION n° P3 – PROPAGATION, JAMMING AND ASSOCIATED MITIGATION

- N° 1 - **Characterization of the unavailability due to rain of an X band radar used for range safety at Kourou Space Center** - Frédéric Lacoste, Jérémie Trilles and Clément Baron – CNES – France
- N° 2 - **Channel capacity estimation of stacked circularly polarized antennas suitable for drone applications** - Ioannis Petropoulos, Jacques Sombrin, Nicolas Delhote and Cyrille Menudier - SigmaLim Labex, University of Limoges – France
- N° 3 - **Pattern-reconfigurable antenna design for telemetry and wireless communication systems** - Gaojian Kang, Daquan Li and Xinglai Wang - Beijing institute of astronautical systems engineering - China