



International Astronautical Federation **News**

Connecting Space People

4/2012 (December 2012/January 2013)



Message from the President

It is my pleasure to welcome you to the December/January issue of the IAF newsletter.

For those of you who attended the IAC in Naples, I hope you enjoyed and made the most of the multiple opportunities to see, hear and discuss the latest in space. The IAC this year was key, not solely to participants who were provided with one of the most varied programmes to date, but for the IAF, who saw major changes in its governance, welcomed new members and adopted new activities. Personally, it was my honour to be elected as President and I look forward to working alongside all of you to stimulate the continuous growth and improvement of the work of the Federation.

In the following pages, you will first find IAF news, of its governance, membership, Global Networking Forum and awards, followed by an overview of the IAC in Naples and news on the upcoming IACs. News from the IAF members, from around the world and the space sector, conclude the newsletter, this time featuring many of the opportunities they found during the 2012 IAC.

I finish by wishing you a happy New Year and a very fruitful 2013.

Kiyoshi Higuchi
President

International Astronautical Federation

IN THIS ISSUE

MESSAGE FROM THE PRESIDENT

IAF NEWS

- 2012-2014 IAF Bureau Members
- IAF sees membership numbers grow
- IAF Awards
- IAF space-flown flags
- IAF's Global Networking Forum (GNF)
- IAF's International Astronautical Congress (IAC)

IAF MEMBERS' CORNER

OUR LATEST PUBLICATIONS

IAC 2013 Brochure

DEADLINE REMINDERS

Next Generation Plenary: **6 January 2013**
ESL Grant Programme: **1 February 2013**
Emil D. Allan Award: **14 February 2013**
Frank J. Malina Medal: **14 February 2013**
IAF World Space Award: **14 February 2013**
YSL Recognition Programme: **14 February 2013**
IAC2013 call for abstracts: **21 February 2013**

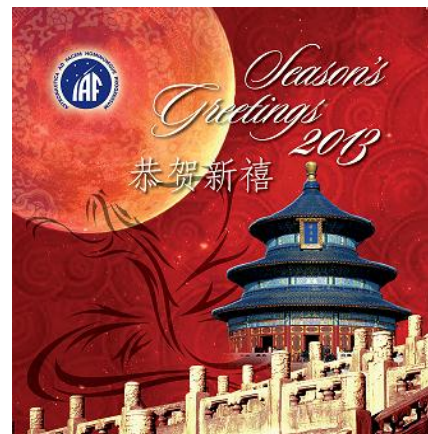
UPCOMING EVENTS

IAF Spring Meetings

18-20 March 2013 Paris, France

International Astronautical Congress

23-27 September 2013 Beijing, China



2012-2014 IAF Bureau members

Members of the new IAF Bureau, in charge of driving the direction of the Federation, were selected during the IAF General Assembly in Naples, Italy.



Kiyoshi Higuchi

Vice-President of JAXA

succeeds Berndt Feuerbacher as IAF President until October 2014

Five new Vice-Presidents join the Bureau:

IAF Vice-President for Outreach and Societies



Andrea Boese, *Strategy and International Relations, European Space Policy and Special Affairs, Deutsches Zentrum für Luft- und Raumfahrt (DLR), Germany*

IAF Vice-President for Industry Relations



Jean-Yves Le Gall, *Chairman and CEO, Arianespace, France*

IAF Vice-President for International Organisations Relations and Developing Countries



Sergey Saveliev, *Deputy Head, Russian Federation Space Agency (Roscosmos), Russia*

IAF Vice-President for Global Membership Development



Ray Johnson, *Senior Vice-President and Chief Technology Officer, Lockheed Martin Corporation, United States*

IAF Vice-President for Financial Matters



Jan Kolar, *Director, Czech Space Office, Czech Republic*

They join 5 IAF Vice-Presidents elected for a second term:

IAF Vice-President for Honours and Awards



V.S. Hegde, *Chairman and Managing Director, Antrix Corporation Limited, India*

IAF Vice-President for Technical Activities and IAC Evolution



Maria Antonietta Perino, *Head of Advanced Exploration Programmes, Infrastructures and Transportation Systems, Thales Alenia Space Italia, Italy*

IAF Vice-President for Institutional Relations and MP Liaison



Jean-Jacques Dordain, *Director General, European Space Agency, Paris, France*

IAF Vice-President for Youth and Workforce Development



Lyn Wigbels, *President, American Astronautical Society, United States*

IAF Vice-President for International Relations



Jie Yuan, *Vice-President, China Aerospace Science and Technology Corporation (CASC), China*

IAF sees membership numbers grow

The growing and diversifying activities of the IAF keep attracting novel members, keen to join its global and heterogeneous space community. 25 new members are now part of the Federation, following approval from the IAF General Assembly in October 2012. These include:



Access e.V., Germany



Advanced Instrumentation and Technology Centre (AITC), Australia

Beijing Sunwise Space Technology Ltd., China



California Polytechnic State University, USA



Center for Planetary Science and Exploration, Western University, Canada



China Head Aerospace Technology Co., China



Cluster of Serbian Aeronautical Industry – UVIS, Serbia



Committee on Space Research of the Polish Academy of Sciences (CoSR PAS), Poland



CVA (Community of Ariane Cities), France



Dniprotekhservice LLC, Ukraine



Emirates Institution of Advanced Science and Technology (EIAST), UAE



EMXYS (Embedded Instruments and Systems S.L), Spain



Euro Space Center, Belgium



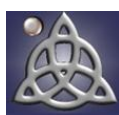
Institut Supérieur de l'Aéronautique et de l'Espace (ISAE), France



JSC NPO Energomash, Russia



National Space Agency of Malaysia (ANGKASA), Malaysia



National Space Centre, Ireland



Nec Corporation, Japan



New Mexico Space Grant Consortium, USA



South African National Space Agency, South Africa



South African Space Association (SASA), South Africa



Space Industry Association of Australia, Australia



Tesat-Spacecom GmbH & Co. KG, Germany



Turkish Aerospace Industries, Turkey



Vietnam National Satellite Center (VNSC), Vietnam

IAF Awards

New IAF awards approved by IAF General Assembly 2012

- **IAF World Space Award:** presented for an exceptional contribution to space science, space technology, space medicine or space law, or for space management of exceptional impact to the world's progress in astronautics
- **Hall of Fame:** intended to create a standing forum of personalities who have contributed substantially to the progress of space science, technology or space benefits to mankind, within the framework of the IAF activities
- **Fellowship Award:** intended to reward active volunteers for their contributions to the progress of astronautics and to the IAF



2012 Emil D. Allan Memorial Award

The Allan D. Emil Memorial Award is presented annually for an outstanding contribution to space science, space technology, space medicine or space law.

2012 award recipient Prof. Dr Kuninori Uesugi received the award at the Closing Ceremony of the 63rd International Astronautical Congress. The award was presented by the new IAF President Kiyoshi Higuchi, who used to be Prof. Uesugi's student.

2012 Frank J. Malina Astronautics Medal

The Frank J. Malina Astronautics Medal is presented annually to an educator who has demonstrated excellence in taking the fullest advantage of the resources available to them to promote the study of astronautics and related space sciences.

Prof. Amalia Ercoli-Finzi, recipient of the 2012 Frank J. Malina Astronautics Medal, received the award at the Closing Ceremony of the 63rd International Astronautical Congress.



2012 Young Space Leaders Recognition Programme



The Young Space Leaders Recognition Programme recognises exceptional students and young professionals (age 21-35) who are demonstrating leadership in their academic or early careers.

From left to right: **Danielle Wood**, **Kevin Stube**, **Ariane Cornell**, **Agnieszka Lukaszczyk** and **Nicolas Peter** (not present) are the first Young Space Leaders and received their award at the Closing Ceremony of the 63rd International Astronautical Congress.

Calls for nominations for the 2013 [Allan D. Emil Memorial Award](#), [Frank J. Malina Astronautics Medal](#), [IAF World Space Award](#) and the Young Space Recognition Programme opened in December and close on

14 February 2013 15:00 CET (Paris time)

For more information, contact Lisa Antoniadis, award@iafastro.org.



2012 Luigi G. Napolitano Award Winner

The Luigi G. Napolitano Award is presented to a young scientist, under 30 years of age, who has contributed significantly to the advancement of aerospace science and has presented a paper about it at the International Astronautical Congress.

The winner of the 2012 Luigi G. Napolitano Award is **Valerio Carandente**. He is a Ph.D. student at the University of Naples Federico II, focusing on the atmospheric re-entry of blunt bodies and vehicles characterised by a high aerodynamic efficiency. He received his award in Napolitano's home town Naples, during the 63rd International Astronautical Congress.

2012 Student competitions



From right to left, Alessandro Grasso - 2nd prize Student Award undergraduate category, Hagarly Hutassuhut - 1st prize Student Award undergraduate category, Andreas Leonhard Winhard - 2nd prize Student Award graduate category, Team from ISAE/SUPAERO Toulouse - British Interplanetary Society Prize for Best Technical Paper and Team from University of Strathclyde – Hans von Muldau Team Award for the Best Team Project



Credit: Graeme Fleming,
University of Strathclyde.

Charlotte Lücking - 1st Prize Student Award graduate category, and StrathSat-R team from University of Strathclyde – Hans von Muldau Team Award for the Best Team Project

Call for applications for the **Emerging Space Leader Grant Programme is opened and closes on**

1 February 2013 15:00 CET (Paris time)

For more information, contact Lisa Antoniadis, eslgrants@iafastro.org.

IAF space-flown flags come full circle, from Earth to space, back to the Federation and now to its members



Sergey Saveliev (Roscosmos), William H. Gerstenmeier (NASA), Berndt Feuerbacher (former IAF President), Christian Feichtinger (IAF Executive Director) and Zhaoyao Wang (CMSA) at the IAF GA ceremony



Liu Yang, first female Chinese taikonaut also attended the ceremony

To celebrate its 60th birthday, partnering with Roscosmos, NASA and CMSA, the IAF sent 300 IAF flags on a one-of-a-kind space journey. Having spent 444 days in space, aboard Soyuz, ISS Shuttle, Endeavour, Tiangong-1 and Shenzhou-9, the flags returned to the Federation, which now awards them to its member organisations as tokens of gratitude and recognition.

Many members received their flags during an IAF General Assembly Extraordinary Session held at the IAC this year. IAF members who did not attend the ceremony are invited to the IAF Secretariat Office in Paris, to collect their unique IAF gift.



IAF member organisations' representatives receiving the IAF flag at the IAF Extraordinary GA

All pictures of the ceremony are available online: <http://www.flickr.com/photos/iafastro/sets/72157631856931804/>

Video of IAF flags on-board Tiangong 1 and Shenzhou 9 is available online:
<http://www.youtube.com/watch?v=mCTDQ1A9KpM>

IAF's Global Networking Forum (GNF)

The first IAF [Global Networking Forum](#), an evolution of the IAF Cluster Forum targeting a much wider and more varied audience, took place in Naples, Italy and hosted its first, and very well received, programme. Events attracting some of the biggest audiences included:

The **Industry Day**, with panel discussions on



The economic impacts of satellite navigation systems



Earth observation challenges



Vega launch System

A **tweet up session** dedicated to the World Space Week (WSW), with talks from WSW's Dennis Stone and Max Grimard, "The Science Guy" Bill Nye, and astronauts Christer Fuglesang and Paolo Nespoli



The Astronauts' day, featuring a tribute to Neil Armstrong by Buzz Aldrin, followed by an astronauts' discussion with Christer Fuglesang (ESA), Sergei Krikalev (Roscosmos), Paolo Nespoli (ESA) and Leland Melvin (NASA)



Much more about and from the IAF Global Networking Forum, a versatile platform for both members and the IAF community at large, are yet to come in 2013. Watch the IAF website for more or contact Giulia Maria Berardi, giuliamaria.berardi@iafastro.org.

International Astronautical Congress

IAC 2012

A record number of participants, unprecedented numbers of students and young professionals, outstanding presentations of the latest space research and progress, and the most ambitious programme to date mark the IAC 2012

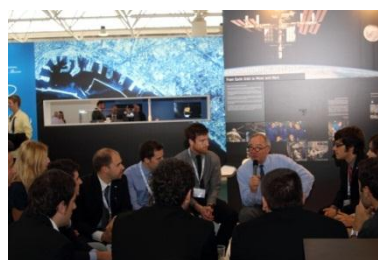
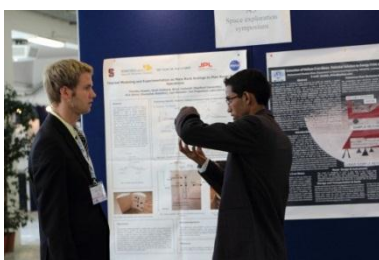
You missed it? Have a look at

<http://www.youtube.com/playlist?list=PL-mSQLPEXwutOyNHLzNed4d59I5v-H3By>

The 2012 IAC in Naples, Italy, gathered a record 3466 participants.

Featuring its most ambitious programme to date, the Congress featured 171 technical sessions; an exhibition showcasing some 70 exhibitors; a plethora of social events, including numerous Young Professionals' receptions and a gala dinner in a royal palace in the vicinity of Naples; the first IAF Global Networking Forum (GNF); and a range of associated events, including the IAF-UN workshop, IAF Members of Parliament meeting and IAC Cities Summit.

Close to a 1000 students and young professionals attended the Congress. This unprecedented number was particularly encouraging, consistent with the Federation's mission to prepare the workforce of tomorrow, the fruit of many of its latest programmes and a trend the IAF hopes to nurture for the years to come.



All presented papers are available in the IAC Proceedings, which can be ordered at iac_archive@iafastro.org.













14 plenary programme sessions, where space leaders discussed and highlighted the latest in space research and exploration, took place during the week:

[Plenary 1](#): Heads of Agencies



[Plenary 2](#): Small and Medium Satellites:
a high potential for operators



Plenary 3 : Commercial Space Transportation Initiatives How Fast Are We Moving and Where Are We Going	
Plenary 4 : Improving the Quality of Life on Earth Societal Impacts of Human Space Flight	
Plenary 5 : Disaster Monitoring From Space	
Plenary 6 : International initiatives for the safe and sustainable use of outer space	
Plenary 7 : Next Generation Visions for Uses of Social Media for the Advancement of Earth and Space Science, Technology, and Operations	
Plenary 8 : The Italian Mission COSMO-Skymed: dual approach and achieved results	
Highlight Lecture 1 : Outcome of the World Radiocommunication Conference 2012 (WRC-12) and future challenges for space services	
Highlight Lecture 2 : The new face of the sun from space From Nuclear Fusion to Climate Change	
Highlight Lecture 3 : The Kepler space mission for the search of Earth-like planets	
Late Breaking News 1 : Shenzhou - 9 Mission	
Late Breaking News 2 : MSL Mission	
Late Breaking News 3 : SpaceX Dragon visit to the International Space Station	

Hosting IAC2012 a success for ASI

The **Italian Space Agency** was greatly honoured and pleased to host the IAC this year. During the Congress, the Agency held several bilateral meetings with cooperating countries and signed new agreements with Thailand and Mexico. The event also nurtured greater interaction between space professionals and the general public in the Campania Region. As part of this initiative, Italian astronaut Roberto Vittori visited several local primary and high schools, inspiring local students and assuring them that dreams do come true. "Space is an opportunity for everyone, you just have to want it" was his message.

Source: Gabriella Arrigo, Chief of International Cooperation with non-European countries, ASI

IAC2013 in Beijing, China, promises some of the most impressive on-site organisation and local space community involvement to date

Preparations of the IAC 2013, hosted by the Chinese Society of Astronautics (CSA) in Beijing, China, are already in full motion, with many of the practical and logistical on-site arrangements firmly under hand. An impressive Local Organising Committee (LOC), coordinated by CSA, includes all key leaders of the local space environment, including government, industry and academia.

President of CSA and of the China Aerospace Science and Technology Corporation (CASC) Xingrui MA is chair of the LOC:

"CASC is the leading force of China's space industry and a core enterprise group that explores, develops and utilises space in China. It is engaged in researching, developing and manufacturing launch vehicles, satellites, manned spaceships, space stations, deep space exploration spacecrafts and satellite operation management. It also actively promotes international exchange and cooperation and is willing to make new contributions to the peaceful utilisation of space."



"CASC will fully support the IAF and the CSA to prepare and hold the Congress. It will organise and coordinate representatives from related Chinese government departments, enterprises, academic institutions and universities to participate in the IAC, and provide the opportunity for representatives from home and abroad to visit and exchange with its affiliated academies."

More information about IAC2013 available on: <http://www.iac2013.org>

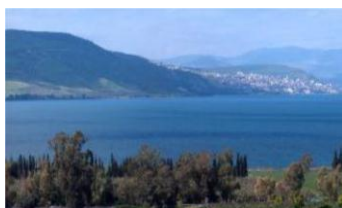
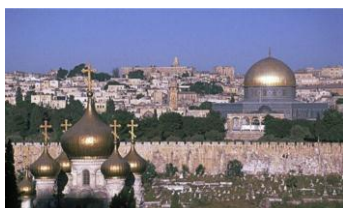


Israel to host IAC2015

All three bidders competing to host the IAC 2015, including the Geo-Informatics and Space Technology Development Agency (GISTDA), the Israel Space Agency (ISA) and the Mexican Space Agency, presented to and were evaluated by the IAF General Assembly (GA) gathered at the IAC in Naples. The outstanding preparation of, and drive behind, each bid generated much discussion and rendered the final choice a challenging decision.

It was the Israeli bid, which demonstrated remarkable mobilisation of all key actors in the country, including ISA, local space industry and government, to ensure a flawless IAC, that won the GA vote.

ISA is planning to hold the Congress in the Jerusalem International Convention Centre, the country's largest convention venue, and will dedicate it to the theme 'Space – the Gateway for Mankind's Future'



Thrilled by the decision, ISA issued a statement:

Albert Einstein noted: *"Success is 95 percent perspiration and 5 percent luck"*! Israel Space Agency (ISA)'s road to win the IAC 2015 embraced hope, hard work and great expectations. We have learned from others, and from ourselves, a very valuable lesson – **what makes a winner of the IAF-IAC, and how to get the job done!** ISA's bid received total Israeli governmental backing, including from the President Mr Shimon Peres, Knesset's Speaker, the Supreme Court Chief Justice, the Ministry of Foreign Affairs' Director General and Jerusalem's Mayor, to name a few. In Naples, ISA achieved its goal - **Jerusalem is hosting the IAC 2015!** In Winston Churchill's immortal words: *"Success is not final, failure is not fatal: it is the courage to continue that counts"*!

IAC2016 Call for hosting now open

The call to host the IAC2016 is now open. Interested organisations can submit their bids by 8 February 2013. For more information, visit the IAF website: www.iafastro.org.

IAF Members' Corner

AEM makes the most of IAC2012

For the **Mexican Space Agency (AEM)**, the IAC proved one of the most important fora to interact with the international astronautics and space community. During the 2012 Congress, the agency signed two MoUs - one with the German Aerospace Centre (DLR) and one with the Italian Space Agency (ASI) - to establish a general framework for future collaborative efforts between Mexico and, respectively, Germany and Italy.



AEM also held bilateral meetings with other parties, rendering its first formal participation in the Congress a huge success but also confirming the opportunities an IAF membership and participation in an IAC can offer.

More: <http://www.aem.gob.mx/>



Latest from the AIAA

In October 2012, the **American Institute of Aeronautics and Astronautics (AIAA)** saw Dr Sandra H. Magnus succeed Maj. Gen. Robert S. Dickman, U.S. Air Force (retired), as its fourth Executive Director. Magnus left NASA's Astronaut Corps to join AIAA. Her NASA career began in 1996 and included two shuttle missions, STS-112 and STS-135, and a four-month stay on the International Space Station in 2008. Upon assuming her duties as AIAA's Executive Director, Magnus stated: "The aerospace industry has significant impact on our nation and our world. AIAA, with its broad base of talented members and their depth of experience, will continue to play a key role not only in creating new generation of scientists, engineers and technologists."

In September, AIAA launched its new electronic library, Aerospace Research Central (ARC). ARC, created in partnership with Atypon®, gives users powerful search capabilities through all of AIAA's books, standards, meeting papers, and journal articles; offers streamlined research capabilities, including the ability to track and download citations; and gives subscribers early access to journal publications ahead of print. ARC is accessible at <http://arc.aiaa.org>.

More: <http://www.aiaa.org>.

Latest from CIRA

As a centre of excellence in aeronautical and space disciplines, the **Italian Aerospace Research Center (CIRA)** carries out theoretical and applied analyses in the areas of space propulsion, aerodynamics, aerothermodynamics and thermostructures, advanced structures, flight systems, adaptronics and information technology.



Thanks to the capabilities of its major test facilities, the Plasma Wind Tunnel, Icing Wind Tunnel and Crash Laboratory (as well as its new laboratories for Space Qualification, Space Propulsion and Air Traffic Management), it is at the forefront of advanced aerospace research.

CIRA played a significant role in the development of the Vega launch vehicle and will contribute to the future development of an aerospace vehicle capable of making an independent re-entry from Earth orbit. The Center also participates in Clean Sky and other major European and international research programmes and cooperates with the world's main industrial and government players in both aeronautics and space.



The 2012 IAC provided an excellent opportunity to strengthen CIRA relationships with companies, organisations and institutions at a domestic, European and global level, from NASA to ESA, and from JAXA to the Chinese Aerospace Academy.

More: www.cira.it



Dneprotekhservice at the IAC2012

During the IAC 2012, IAF Ukrainian member Dneprotekhservice SPC LLC (DTC) discussed the supply of CubeSat satellite components, that it funds and supports as part of an international project, with representatives of the ISIS Company. Dneprotekhservice also discussed a possible presentation of some of its ground-base equipment for launch preparation and space rockets launches at the

upcoming IAC in 2013, as part of discussions of upcoming space trends that always take place during International Astronautical Congresses.

The Dneprotekhservice is already planning its participation in the IAC 2013 in Beijing, to present progress on its cyclone-4 ground-based equipment for space rockets launch.

More: www.dts.dp.ua

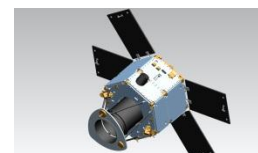
EAIST news: DubaiSat-2 nearing completion

The DubaiSat-2 project, an initiative of the **Emirates Institution for Advanced Science and Technology (EIAST)**, is nearing completion and readiness for launch.

The satellite is less than 320 kg heavy, approximately 2 meters high and features a Hall Effect Propulsion Subsystem jointly developed between KAIST, EIAST, SI and JAXA. It will produce 1m or less resolution images, for a variety of applications, and will be commercially available as a viable high-resolution product. It is jointly developed by EIAST and Satrec from South Korea and will be the second satellite launched by EIAST and the UAE. It brings EIAST one step closer to harnessing the technical expertise necessary for the domestic development of satellites in the near future.

The launch of DubaiSat-2 is expected in the first half of next year.

More: www.eiast.ae



EMXYS finds Asian partner during IAC2012

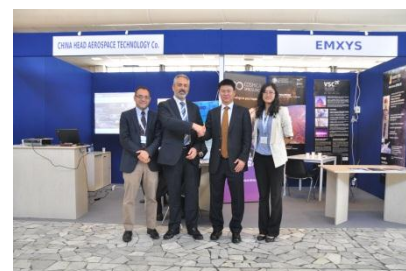
The 63rd IAC was the perfect opportunity for Head Aerospace (China) and EMXYS (Spain) to meet and discuss strategic cooperation opportunities for the European and Asian markets.

EMXYS and Head Aerospace agreed to maintain a close commercial cooperation, working together on the identification of business opportunities in the Asian market where Head Aerospace will be EMXYS' sales representative.

"This cooperation agreement opens a huge range of business opportunities for both companies, which have found each other to be highly synergistic in the aerospace market," said Dr Jose Antonio Carrasco, EMXYS' CEO.

"HEAD is proud to prompt the connection and cooperation between European and Chinese space. We will be more active during the 64th IAC in Beijing next year and I look forward to seeing more space companies there as well," said Mr Jason Zhou, HEAD's CEO.

More: www.emxys.com



Latest on EUMETSAT's satellites

One focus point of **EUMETSAT's** 2012 activities was to ensure the continuity of existing services for users in EUMETSAT Member and Cooperating States - and beyond.



The MSG-3 satellite was launched on 5 July from Kourou, Europe's Spaceport in French Guiana. Once fully operational as Meteosat-10, MSG-3 will secure monitoring of weather over Europe, Africa and parts of the Atlantic and Indian Oceans, in tandem with Meteosat-9, used for the Rapid Scanning Service over Europe. The two-satellite system will support weather forecasters in one of their most challenging tasks, nowcasting, which involves detecting and monitoring rapidly developing high impact weather phenomena and issuing related warnings.

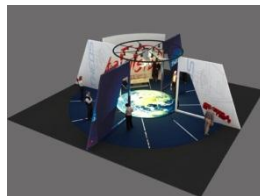
On 17 September, the Metop-B satellite was launched from the Baikonur Cosmodrome in Kazakhstan. Metop-B's role is to ensure continuity of observations from polar orbit which are vital to Numerical Weather Prediction – the basis of most weather forecasts – as well as climate and environmental monitoring.

Both satellites are under commissioning and will soon be declared operational.

More: www.eumetsat.int



GISTDA holds Space Krenovation Park (SKP) exhibition and organises COSPAR 2013 symposia



GISTDA's Space Krenovation Park (SKP) was established to support emerging entrepreneurs in the development of their ideas and initiatives. In addition to offering facilities, including a museum laboratory and office space, SKP offers capacity building training for all stakeholders in the value chain. From November this year, SKP hosts "Visionarium" – a space exhibition seeking to introduce visitors to the latest visions and developments in space technology.

In 2013, GISTDA will also host the first of a new series of COSPAR symposia themed "Planetary Systems of our Sun and other Stars, and the Future of Space Astronomy", in Bangkok, Thailand. Intended as a bi-annual event dedicated to strengthening space and astronomical research at a regional level through multidisciplinary and training sessions, the first symposium will take place 11-15 November.

For additional information, deadlines and registration, visit: cospar2013.gistda.or.th.

IAC 2012 a Great Success for HE Space

Once again the IAC was a great success for **HE Space**, a leading provider of space engineering services. With their company stand located between Europe's largest space company, Astrium, and the hottest name in global space, SpaceX, HE Space welcomed a steady flow of keen young engineers looking for a step up the career ladder.



IAC 2012 also offered the opportunity to catch up with many customers - current and potential - away from the stresses and distractions of the usual office environment.

More: www.hespace.com



INPE participates in IAC2012

Representatives from the Instituto Nacional de Pesquisas Espaciais - INPE - from Brazil enjoyed a fruitful participation in the IAC in Naples. Besides several presentations of research under development at the Institute, they took part in two meetings to develop joint work. The first one, with representatives from NASA/JPL, DLR and Astrium, addressed the ASTER mission bringing together several institutions in Brazil and abroad, with the objective of sending a spacecraft to the 2001 SN263 asteroid. The second meeting with representatives from Euroconsult discussed an update of the

Brazilian space projects in the coming years.

More: www.inpe.br

ONERA Strongly Committed to Space Security



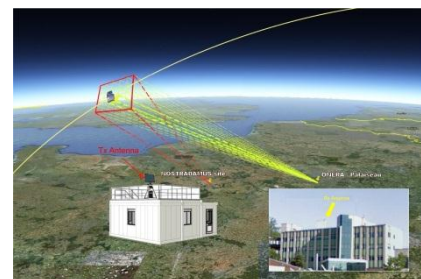
ONERA's expertise lies in Space Situational Awareness (SSA), vulnerability to space weather events and orbital debris. An IAF member for close to 3 decades, ONERA's latest in these

areas includes:

In 2005, it delivered the Graves space surveillance system to the French MoD, a system so far unique in Europe.

Conducting system studies and proposed concepts for the European space surveillance of LEO, MEO and GEO orbits since 2002, ONERA has been involved in the ESA SSA programme from its beginning.

Focusing on LEO surveillance, it defined requirements for an UHF surveillance bi-static radar and, in July 2012, contracted the design and development of a breadboard to validate orbital debris observation techniques.



Regarding vulnerability to space debris, in 2007 ONERA labs initiated studies on vulnerability and survivability, culminating in the P2ROTECT project (Prediction, Protection & Reduction of Orbital Exposure to Collision Threats), which will evaluate debris risks to space missions and feature new means to cope.

Regarding vulnerability to space weather, spacecraft charging is a major threat that can be mitigated by the quantitative assessment of charging levels in orbit. ONERA has developed key tools for assessing and evaluating such space environment effects.

More: <http://www.onera.fr/>



SES and Luxembourg University cooperate on latest-generation techniques for conversion of procedures

IAF member **SES** operates 52 satellites from various manufacturers. All use a variety of automation languages whereby the resulting lack of common standards is a source of complexity, risk and cost of operations.

ASTRA 2F, manufactured by Astrium and launched successfully in September 2012, is the first satellite entirely controlled through automatically-converted procedures.

Every procedure used to control the spacecraft is generated via a new technique - the Satellite Procedure Execution Language and Library (SPELL).

SPELL was developed in cooperation with the University of Luxembourg's Interdisciplinary Centre for Security, Reliability and Trust whose scientists refined existing mathematical tools to adapt them to an automatic translation problem. All the control procedures written in native software language can now be translated into SPELL using a 100% automated process.

SPELL is an open-source software (<http://code.google.com/p/spell-sat/>).

More: www.ses.com



Sirius XM Radio Donates Broadcasting Satellite to the Smithsonian's National Air and Space Museum



Sirius XM Radio donated to the Smithsonian one of the first satellites designed to provide space-based digital radio service to consumers. The Sirius FM-4 satellite, built as a flight-ready back-up for the SiriusXM satellite constellation, was never launched.

By using space-based technology, SiriusXM has expanded the reach of radio beyond the limited reach of ground-based transmission towers, to deliver commercial-free music, premier sports, comedy, exclusive talk and entertainment and the most comprehensive Latin programming in radio across most of the North American continent.

The Sirius FM-4 satellite will be on display in the James S. McDonnell Space Hangar of the National Air and Space Museum's Steven F. Udvar-Hazy Center.

More: <http://newsdesk.si.edu>



World Space Week 2012 in Vietnam

Annually, from 4 to 10 October, **Vietnam's Space Technology**

Institute (STI) holds the nationwide World Space Week (WSW) to spread knowledge on space science and technology and to promote space education.

This year, STI held WSW programmes in the cities of Hanoi and Hochiminh city. All education activities organised focused on

Space for Human Safety and Security, with lectures and seminars on space technology history, the role of space science and application of remote sensing technology for social benefits. Other events included a painting activity entitled "Friendship in the Universe", space games, a water rocket competition and 3D movies about activities on the International Space Station (ISS).



The programme attracted the interest of many pupils, students and teachers, stimulating the curiosity, inspiring the passion and encouraging the study of space exploration among the younger generation.

More: www.sti.vast.ac.vn

Cluster of Serbian Aeronautical Industry (UVIS)

UVIS is one of the IAF's newest members, having received Federation Membership on 1 October 2012 at the 63rd IAC in Naples. The interests and goals of UVIS - a non-governmental association - lie in the areas of aeronautics and space technology with a focus on international cooperation.



UVIS members are small and medium enterprises, universities and specialised institutes involved in scientific research and the production of aircraft and components for the space industry in Serbia and abroad. For example, UVIS participates in the CLUST-AIR project, which contributes to the expansion of cluster infrastructure in aeronautics and space in South-Eastern Europe.

In addition, the president of UVIS is the regional coordinator of the University Space Engineering Consortium (UNISEC), a space technology programme within the 2nd "Mission Idea Contest for Micro-Nano Satellite Utilisation", which has the support of the Government of Japan.

More: www.uvisaero.rs



Competitors after Google Lunar X PRIZE gather at IAC2012

The \$30 million Google Lunar X PRIZE has 25 teams from 16 countries competing to be the first to launch and conduct their missions on the lunar surface with just three years remaining. As deadlines approach for fundraising, signing of launch contracts, and building and testing of spacecraft, a number of teams are actively discussing partnerships, merger, and acquisitions in order to increase their chances of claiming the grand prize. The IAC in Naples was an ideal venue for such discussions to take place, and many teams attended the conference this year. Additionally, several teams presented their work and progress at IAC, and the Google Lunar **X PRIZE headquarters** staff gave two competition overview presentations. Expect more updates from the teams in the coming year regarding launch contracts and partnerships as they progress in this exciting race to the Moon.

For more info, visit: www.googlelunarxprize.org.

The next edition of the IAF newsletter will be out in March 2013.