

EARSC 2016

A year to expand
and develop EO and
geo-information
business.

Creating a European Marketplace for Earth
Observation (EO) Services, developing links
with commercial communities and
stakeholders (EEE's), ease access to
Copernicus services, promoting capabilities
based of the EO industry...

Editorial

In the last edition of eomag, I mentioned briefly a report we had just published looking at the economic benefit of satellite data. It was the first case we published in a series about "Satellites Benefitting Citizens". In it we looked at the enormous return to the Finnish and Swedish economies coming from the use of satellite imagery by the icebreakers. We are about to publish the report on the second case which looks at the use of imagery to support Forest Management in Sweden – which also shows a strong benefit.

We are interested to take a new look at the benefits which satellite technology can bring to governments, businesses and ultimately the citizens; for this analysis we have developed a new methodology. Previous work has always taken a top-down approach; looking at the macro-economic effects. Studies would look at major economic sectors and trends so as to assess how much use could be made of satellite imagery to support them. The consultant would then assign a percentage for each sector and calculate the total benefit.

[Keep reading...](#)

Summary

Issue Winter 2015/2016

EARSC Activities

[EARSC new brochure is out: From Satellites to Supermarkets in the Baltic](#)

[EARSC Workshop PCP/PPI in Horizon2020 Projects on Earth Observation](#)

Innovation procurement can deliver solutions to challenges of public interest and EO services providers can play a major role in this; therefore EARSC and BHO legal are organizing a workshop next 3rd of December in Brussels on the subject of PCP (Pre-Commercial Procurement) to guide

companies on how to approach the H2020 call EO-2-2016.

[Info Session by EEA upcoming CfTs for Copernicus Land Monitoring](#)

EARSC organized with EEA an Information session on the upcoming calls for tender for Copernicus full operation, land service, pan-European and local components.

[Latest EARSC Secretary General Blog's on European Unicorns and commercialization in Europe](#)

Interview

[Interview with Chris Steenmans, Head of Programme, ICT and data management at the European Environment Agency.](#)

Industry Profile

[Turning Earth Observation into information you can trust](#)

CGI delivers ground systems, exploitation platforms and space enabled applications.

Member News

[GlobWetland Africa - Implementing Sustainable Earth Observation Based Wetland Monitoring Capacity in Africa and Beyond](#)

A consortium led by DHI GRAS (Denmark) and including GeoVille GmbH (Austria), ITC (Netherlands) and Brockman Consult (Germany) as well as the technical universities in Copenhagen (Denmark) and Vienna (Austria) has been selected by the European Space Agency (ESA) to carry out the 1.5 million Euro project "GlobWetland Africa".

[21st Conference of the MARS-Unit, JRC was held in Thessaloniki, Greece; ReSAC participated with a Poster](#)

(November 2015) The conference offered an opportunity for Member State Administrations, EU officials, Image Providers and contractors to meet and discuss particular problems or innovations concerning the whole management of the Common Agriculture Policy (CAP) direct aids, such as controls with Remote Sensing (CwRS), Land Parcel Identification Systems (LPIS) management and quality assessment, permanent Ecological Focus

Area (EFA) creation and management, and GNSS technologies in support of CAP.

[BlackBridge to develop methodologies for forest degradation monitoring](#)

(Nov 2015) BlackBridge is the leading partner of the project ForMoSa, an Innovator III project funded by the European Space Agency (ESA) through the Data User Element.

[BlackBridge to Set the Grounds for Reliable Forest Degradation Monitoring in REDD+ MRV](#)

Berlin, October 29th, 2015 — BlackBridge, a Planet Labs company, is the leading partner of the project ForMoSa, an Innovator III project funded by the European Space Agency (ESA) through the Data User Element . The project aims at developing methodologies for forest degradation monitoring and algorithms for sensor interoperability in the frame of REDD+ MRV. These are considered as high-priority research topics by the Global Forest Observation Initiative (GFOI).

[Copernicus HR layer to map soil sealing in Italy at 5m](#)

The Italian National Institute for Environmental Protection and Research (ISPRA) presented in Milan last May 2015, the Map of land consumption in Italy, produced with the help of Planetek Italia. It is the first example of reuse at national level of Copernicus core downstream services.

[Deimos Imaging and UrtheCast provide satellite imagery and video for the IEEE GRSS Data Fusion Contest](#)

This year IEEE GRSS Data Fusion Contest, Very High Temporal Resolution from Space, will use DEIMOS-2 Very High Resolution (VHR) multi-temporal data and HRC/Iris High-Definition Video from space. Both the VHR images acquired at two different dates and the video from an in-orbit camera cover an area over Vancouver (Canada). The data were acquired and provided specifically for the Data Fusion Contest by Deimos Imaging and UrtheCast respectively.

[ECREEE Project](#)

NOVELTIS contributes to promoting Sustainable Energy Access in West Africa

[EO4CBI at the MUAS Conference](#)

(Nov 2015) First results of the “Earth Observation in support of the City Biodiversity Index” project presented at the MUAS Conference at Frascati, Italy

[Euroconsult Strategic Partnership Inked with World Space Risk Forum](#)

(Nov 2015) Euroconsult today announced that it has entered into a strategic partnership with the World Space Risk Forum (WSRF) whereby Euroconsult will assist in the WSRF’s commitment to the creation of a comprehensive platform for the global space risk community.

[Euroconsult's Latest Report Targets Satellite Value Chain](#)

Key trends and indicators on supply & demand of the world commercial satellite industry

[Euronews: Planetek is reaching for the stars with Copernicus](#)

Euronews channel: Planetek is the kind of hi-tech company which is investing and taking benefits from the European programme Copernicus.

[European Space Imaging reached again 100% collection success with VHR data supply to European Commission's CwRS Campaign](#)

(Munich, 06/11/15) European Space Imaging (EUSI) completed the 2015 Controls with Remote Sensing (CwRS) program for the European Commission (EC) with 100 % success rate. The Munich-based company collected and supplied very high resolution (VHR) satellite imagery over nearly half a million square kilometers and demonstrated again its capacity and reliability as Europe’s leading VHR data provider.

[EUROSENSE prominent geo-data provider in the Netherlands](#)

At the end of 2015, EUROSENSE was awarded by Het Waterschapshuis with a large LiDAR and

orthophoto-project in the Netherlands.

[Extreme events managed from space : climate refugees](#)

Organisations such as the UNHCR (United Nations High Commission for Refugees) or the Red Cross are in the front line and need the most efficient way of deploying emergency resources.

[Finding and ordering satellite imagery online with EarthImages](#)

At @Geocento, we have been working for the last couple of years on improving our web platform EarthImages.

[Five Years of Deimos-1](#)

... another step closer to democratizing Earth observation data with the addition of 22 m Deimos-1 imagery dating back to 2011.

[GAF attended the historic Climate Conference COP21](#)

GAF AG attended the historic UN Climate Conference COP21 in Paris and supported the European Space Agency (ESA) in organising a Side Event on 3rd December 2015.

[GlobWetland Africa – towards Earth Observation-based wetland monitoring in Africa](#)

A consortium led by DHI GRAS which includes GeoVille GmbH (Austria), ITC (Netherlands) and Brockman Consult (Germany) as well as the technical universities in Copenhagen and Vienna has been selected by the European Space Agency (ESA) to carry out the 1.5 million Euros GlobWetland Africa Project.

[GMV invited to the “Discovery Day event” organized by the FAO](#)

(21/12/2015) Satellite images are playing an increasing role in our daily lives. They are now a fundamental part of climate-change studies and they also provide us with cartographic information on any part of the world to help us improve our security, manage natural disasters and improve governance

of the land and its resources in light of the information they provide.

[HIS and Airbus Defence and Space Partner to Deliver Satellite Imagery Analysis](#)

[Via Satellite 01-11-2016] IHS and Airbus Defence and Space have announced a three-year partnership agreement.

[Jason-3 Sets Sail for the Oceanographic Golden Fleece](#)

(13 Jan2016) © Pixalytics. The Jason-3 oceanographic satellite is planned to launch on Sunday 17th January from Vandenberg Air Force Base in California, aboard the Space-X Falcon 9 rocket. Named after the Greek hero Jason, of the Argonauts fame, Jason-3 is actually the fourth in a series of joint US-European missions to measure ocean surface height.

[KSAT News](#)

KSAT supporting the vessel Tor Viking through Northern Sea Route
IUU Fisheries monitoring project with World Bank and ESA
KSAT joins in Arctic Frontiers partner program

[Providing high-resolution COSMO-SkyMed SAR imagery to the UK](#)

The Satellite Applications Catapult is leading the COSMO-SkyMed Radar Science and Innovation Research (CORSAIR) programme for the UK. The move will facilitate access to data obtained from the COSMO-SkyMed satellites for research and development (R&D) activities.

[Sargassum seaweed](#)

French West Indies beach invaded by Sargassum seaweed. CLS maps the seaweed ahead of time so it can be collected before reaching the shore.

[Satellite images acquisitions in 2015](#)

The Geocento archive contains over 30 million individual satellite footprints – spanning the last 33 years. The maps below show the frequency of

commercial acquisitions in 2015 alone (1.5 million in total), from more than 22 satellites.

[SERTIT congratulated by the forest sector](#)

The SERTIT platform of the ICube laboratory received on November 27, 2015 at the 10th National Congress Aprovalbois in Dijon, the 1st prize Innovation Awards in the forest industry in the Innovation category based media marketing, ICT, strategy, marketing and services.

[SNAP 2.0 released](#)

It has been released after a public beta test phase with many helpful feedback from enthusiastic users.

[TerraSAR-X and RADARSAT-2 to Improve Monitoring Over North Canadian Region](#)

The German Aerospace Center (DLR) has awarded Airbus Defence and Space with two research projects to enhance Emergency Preparedness and Safety of Operations in collaboration with Canadian partners.

Airbus Defence and Space will monitor man-made changes on land and support tactical ship route planning in Arctic Waters

[Thales Alenia Space wins contract worth €402 million](#)

Thales Alenia Space will again participate in Copernicus program. Company will for sure use their experience during first series of Copernicus satellites called Sentinel-1A and Sentinel-1B. Worth €402 million contract estimates that Sentinel-1C and Sentinel-1D will be launched on 2021 or later. According to Thales Alenia, Sentinel-1A launched on 2014 is now fully operational and launching Sentinel-1B is scheduled on spring 2016.

[The EAGLE goes on-line](#)

(Jan 2016) The results of the EAGLE working group are now publicly available from the Copernicus land monitoring [web site](#)

[The Fresh water Challenge](#)

Since 2013, CLS and its subsidiary ALTAMIRA

INFORMATION, have been mapping and delimiting flood zones of the Adour river in Dax, using their expertise in satellites and radar imaging.

[The new year with a new face.](#)

Rich of 25 plus years of experience, we felt it was time for a makeover

[The PanGeo Alliance welcomes two new members](#)

The PanGeo Alliance, the first global alliance of Earth Observation satellite operators, recently welcomed two new members: Kazakhstan Gharysh Sapary (KGS) and UrtheCast. With eight members worldwide, the Alliance now provides access to imagery and tasking opportunities from an unprecedented and growing fleet of Earth Observation sensors. The PanGeo Alliance fleet now includes 14 operational Earth Observation sensors, providing multispectral imagery in a wide range of resolutions (from 20 m to 75 cm per pixel), 4k full-color videos, and AIS data. This unique fleet assures a daily global imaging capability, with multiple revisit opportunities per day over any target.

[TRE and Altamira together in CLS become the largest InSAR group worldwide](#)

TRE joined CLS at the end of October 2015. Altamira has been part of CLS since 2010.

[UKHO published first nautical chart with EOMAP Satellite Derived Bathymetry](#)

[URBIS: Focus on urban re-development potential](#)

GISAT leads an international project aiming at implementation of operational information services supporting urban vacant land recycling within the sustainable business model.

In recent decades, urban sprawl became a serious European-wide problem, not only due to total land taken, but also due to its spatial distribution patterns and quality of the land consumed. Land use efficiency is becoming a prime political objective at both European and city level, and the EU Land Communication aims to establish “zero net land take” across the EU by 2050. Land is a finite resource and therefore the sprawl has to be

regulated. This can be realized through careful management of urban land, applying the concept of land recycling. Only such an approach can assure sustainable development of European landscape in the long term perspective.

Earth Observation News

[European Space Sustainability](#)

(by Giovanni Sylos Labini. President of AIPAS & Director of EARSC, published on ESA 's website on January 11, 2016). With the Lisbon Treaty "Europe has decided to develop its own operational Earth observation capacity in order to reflect the EU's growing responsibility in European and world affairs" COM 223 final.

[100 Earth Shattering Remote Sensing Applications & Uses](#)

Remote Sensing Applications and Uses

[Bundeswehr Acquires TanDEM-X Global Elevation Model](#)

Airbus Defence and Space and the German Ministry of Defence have signed a contract for the utilisation of TanDEM-X mission data, to update the Digital Elevation Model (DEM) of the Bundeswehr.

[CartoConsult Partners with Proteus to Harness New Laser Scanning Technology](#)

CartoConsult has signed a joint venture agreement with Proteus to develop and promote the use of the latest laser scanning technology.

[China Launches HD Earth Observation Satellite](#)

Beijing: China Today launched its most sophisticated observation satellite, Gaofen-4, as part of the country's high-definition (HD) earth observation project, Xinhua reported.

[COP21: An unprecedented agreement, and a continuing mission for the space sector](#)

(16 Dec 2015) Space-based technologies are involved in climate monitoring

[Copernicus: down-to-Earth opportunities for SMEs reaching for the stars](#)

(By Anne Glémarec © Euronews) Some 58% of the global space economy relies on satellite Earth observation data. This data is available on an open basis in the EU thanks to the Copernicus Programme, as Massimo Antoninetti, of the Italian Research Council explains: “By analysing the potential impact of the Copernicus programme on the European economy, we can forecast a financial benefit of 30 billions euro and the creation of at least 50,000 jobs by 2030 “.

[Digital Globe to use Raytheon's Constellation Scheduling System](#)

Aurora CO (SPX) Dec 14, 2015 – Raytheon has been selected by the high-resolution Earth imagery company, DigitalGlobe, Inc., to develop the capability to support a September 2016 launch and mission planning of DigitalGlobe’s WorldView-4 satellite.

[Director general of UAE Space Agency emphasises importance of satellite data analysis to monitoring](#)

Dr. Mohamed Nasser Al Ahbabi, director general of the UAE Space Agency, underlined the importance of satellite data analysis services related to earth observation, and the need to provide a uniform and systematic approach on efforts made by world countries to monitor the land, sea, and air..

[Discover the beautiful Earth with satellite images](#)

Earth observation satellites are capturing every day images of our globe and its regions. The Guardian gathered beautiful examples of satellite imagery coming, among others, from Sentinel missions.

[DOST, 2 Japanese universities complete Philippine satellite for launching in space](#)

On Jan. 12, 2016, the Philippines and two Japanese universities will hand over to the Japan Aerospace Exploration Agency (JAXA) the country’s first Filipino-assembled satellite for launch in space.

[Earth-i releases new sample imagery from DMC3 / TripleSat constellation](#)

New standards of Earth Observation data paving the way for frequent, very high resolution commercial imaging opportunities

[Esri and NASA Collaborate to Advance Cloud Access to Imagery](#)

Esri and NASA are collaborating to improve access to imagery and raster data stored in the cloud using a combination of two technologies, Meta Raster Format (MRF) and Limited Error Raster Compression (LERC).

[EU's Sentinel colour Earth camera now operational](#)

By Jonathan Amos BBC. Users are now able to download its images of the planet, although they will need to register first.

[Farmers benefit from satellite coverage](#)

(2 December 2015) Farmers can now call on the latest satellite information using the unique TalkingFields service to get the best from their land while cutting the environmental cost.

[FLEX mission to be next ESA Earth Explorer](#)

ESA's Member States have selected FLEX as the eighth Earth Explorer mission, upon recommendation from the Earth Science Advisory Committee. The Fluorescence Explorer (FLEX) mission will map vegetation fluorescence to quantify photosynthetic activity.

[France, Germany Pressing Ahead with Greenhouse Gas Monitoring Satellite](#)

(by Peter B. de Selding — December 8, 2015)

[Free and open satellite data: private companies join in the game](#)

(9 December, 2015 © by Massimo Zotti) Open data usually refers to information the public sector makes (or should make) available to ensure transparency and create business opportunities. A long-standing problem for users is the lack of harmonisation and integration of databases. This is an issue with geographical data too; an obstacle that the

standardisation process of INSPIRE is slowly trying to solve.

[Free data proves its worth for observing Earth](#)

Since late 2008, when Landsat Earth observation images were made available to all users free of charge, nearly 30 million Landsat scenes have been downloaded through the U.S. Geological Survey portal – and the rate of downloads is still increasing.

[Future Food Security for Global Consumers Is Taking an Informed Turn](#)

(Jan 12 2016) Considering the worldwide food scarcity that occurred between 2007 and 2008, governments around the world are taking positive steps to ensure this event does not occur again. The incident led to increase in prices of dietary staple foods and caused frightened governments to stop food exportation, leading to widespread riots in some cases.

[Global Forests Now Monitored With UrtheCast Imagery & Global Forest Watch](#)

(Jan 2016) For the first time, UrtheCast imagery is now available for use on an environmental monitoring platform. From day one, UrtheCast's vision has been firmly rooted in the concept of planet stewardship, aiming to provide people with the tools needed to change the world. This week, we mark an important step along that journey.

[Google and FAO partner to make remote sensing data more efficient and accessible](#)

Partnership enhances ability to assess changing forest and to estimate greenhouse gas emissions

[Ice matters](#)

(11 December 2015 © ESA) The satellite age has revolutionised our understanding of Earth, giving us accurate information to help critical agreements on climate change such as at the current COP21 conference in Paris. Diminishing polar ice is one of the most visible indicators of change, but how much have we learnt over the last decades?

[DigitalGlobe's Geospatial Big Data platform for forestry management](#)

(27 October 2015) DigitalGlobe announced an agreement with Intelescope Solutions to enable global-scale satellite imagery data for the forestry industry.

[Investing in European success - A Decade of Success in Earth Observation Research and Innovation](#)

Earth observation data and information are vital to allow decision-makers and society in general to take informed decisions about climate, energy, food security, natural hazards, health and other societal challenges. These challenges are complex, interrelated, cross-border in nature and interdependent at the global scale and therefore coordination is essential to avoid duplication of efforts and reduce observational gaps.

[ISRO's new year gift: A space park in Bengaluru for industry](#)

The Indian space agency is soon opening a 100-acre Space Park in Bengaluru where private industry players would be allowed to set up facilities to make subsystems and components for satellites.

[Monitoring Rice Production From Space](#)

When global food prices spiked dramatically in late 2007 and into 2008, the costs of many basic dietary staples doubled or even tripled around the world, sparking protests and riots. Panicked governments stopped exporting food, aggravating the crisis.

[More bandwidth for Earth observation](#)

DLR makes progress with a new radar mission at the World Radiocommunication Conference

[NOAA Issues Space Policy for Commercial Sector](#)

The National Oceanic and Atmospheric Administration (NOAA) released its commercial space policy, which sets a broad framework for agency use of commercial space-based approaches.

[OGC and ASPRS to collaborate on geospatial standards](#)

The Open Geospatial Consortium (OGC) and the American Society for Photogrammetry and Remote Sensing (ASPRS) have agreed to work together more closely in the application and promotion of standards and best practices for the location and geospatial industries.

[PlanetObserver presents PlanetDEM 30 Plus global elevation model](#)

(1 December 2015) PlanetObserver announced today the release of PlanetDEM 30 Plus global elevation model.

[Power of Shared Earth Observations](#)

A Ministerial Declaration, issued at the Ministerial Summit and twelfth plenary of the intergovernmental Group on Earth Observations (GEO) in November, made commitments to harness and share critical environmental observations to enable leaders to make better-informed decisions for the benefit of humanity at a time of rapid global change.

[Russia Developing Unique Radar Satellite System](#)

(Nov 2015) A group of Russian companies are currently cooperating to develop a cutting edge satellite radar system for the country's Defense Ministry. The new system will allow for creating a precise 3D model of Earth as well as tracking ground objects.

[Satellite data supporting Tor Viking through the Northern Sea Route](#)

Tor Viking is a Swedish icebreaker, which needed to get home to Scandinavia from the Pacific during December 2015.

[Space Innovation Congress 2016 - Opportunities in space exploration and earth observation](#)

Space Innovation Congress is the UK's new space industry conference and expo, on April 7-8 2016 at St Paul's, Aldersgate in London.

[Speech by Vice-President for Energy Union Maroš Šefčovič at the 8th Annual Conference on European Space Policy “Europe as a global space player”](#)

The following press release was issued by the European Commission on January 13, 2016 10:20 am.

[SPOT 5 makes its final curtain call](#)

Friday 11 December 2015 at 19:29, the SPOT 5 satellite sent back its last packet of telemetry.

[Ten Sensors & Systems Predictions for 2016](#)

Much time is spent this time of year looking forward. Sensors & Systems has been doing this for the past nine years now, and we've taken another stab with this latest list. We did some reflecting on emerging issues, innovative approaches and technology trends to come up with the following predictions for 2016. On the list are hardware advancements, policy decisions and directions, and a whole lot more inputs to mapmaking.

[The UK Space Internship Network is running again in 2016](#)

The Space Placements in Industry scheme (SPIN) has been designed to provide an introductory link for undergraduate students considering employment in the space sector and space sector organisations looking to find the most talented and enthusiastic people to ensure the future success of their businesses.

[The UrtheCast Developer Platform is Open for Business](#)

With the many challenges facing our planet — societal, economic, environmental, and more — we're all the more eager to release the UrtheCast Developer Platform, which is now publicly available and offers tools to help people solve global problems.

[Trends in urbanisation based on satellite data analysis of human settlements](#)

Urban Growth Monitoring

[Winner Announcement: NASA DEVELOP Fall 2015 Virtual Poster Session](#)

After two rounds of judging, a grand-prize winner has been selected for the Fall 2015 Virtual Poster Session (VPS) contributed by NASA's DEVELOP National Program. The contest included 105 researchers conducting 26 projects across 13 DEVELOP locations.

[World Bank and European Space Agency to Use Earth Observation Systems for Sustainable Development](#)

(Friday, 04 December) The FINANCIAL — The World Bank and the European Space Agency (ESA) announced on December 3 that they will collaborate in using space-based Earth Observation – data and images provided by satellites – to reduce poverty, monitor environmental changes, and stimulate economic growth in developing countries. The two organizations signed a Memorandum of Intent (MOI) during the climate talks, COP21, taking place in Paris.

Programmes

[Australia and the European Union Enter Historic Arrangement on Earth Observation](#)

Nov. 5, 2015—Australia's access to vital satellite data has been assured through the signing of a cooperation arrangement in Brussels today between the Australian Government and the European Commission.

[Canada joins Sentinel collaborative ground segment](#)

(Nov 2015) ESA and the Canadian Space Agency have signed an agreement that facilitates access to the Sentinel satellite data primarily for users from Canada.

[China launches HD earth observation satellite](#)

XICHANG, Dec. 29 (Xinhua) — China on Tuesday launched its most sophisticated observation satellite, Gaofen-4, as part of the country's high-definition (HD) earth observation project.

[China Plans to Build Remote Sensing Satellite Network with Global Coverage](#)

China is planning to build a remote sensing satellite network with global coverage by setting up more ground stations overseas.

[Draft Common Framework for Earth-Observation data](#)

[ESA Issues Call for New Earth Explorer Proposals](#)

ESA is announcing an opportunity for scientists involved in Earth observation to submit proposals for the next potential Earth Explorer satellite mission.

[ESA to use EO systems for sustainable development](#)

The World Bank and ESA signed an agreement on using information from Earth observation satellites in support of sustainable development. The agreement was signed at COP21 Climate Summit in Paris.

[Japanese venture plans to put 50 Earth observation microsattellites in orbit by '22](#)

Axelspace Corp., a space business venture originating from the University of Tokyo, will attempt to place into orbit 50 microsattellites from 2017 to 2022 to provide image data covering many parts of the globe.

[Roadmap publication: A Space Strategy for Europe](#)

The Commission has just published a roadmap concerning the European Space Strategy.

[The European Union and Africa: a Copernicus partnership since 2007](#)

The GMES & Africa initiative was established in order to promote cooperation between the European Union and the African Union, to strengthen coordination amongst Earth Observation initiatives, and to facilitate the development of Space-based technologies on the African continent. In October 2015, the Development Cooperation Instrument committee of the European Commission's Directorate-General for International Cooperation and Development (DG DEVCO) approved funding support from the Pan-African programme related to

this initiative. Three priority topics will be addressed during the initial implementation phase of the initiative (2016 – 2020): long term management of natural resources, marine and coastal areas monitoring and water resources management.

[€26.5 million for GMES & Africa initiative](#)

The following press release was issued by the European Commission on November 25, 2015 12:00 pm.

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