

Breaking News: IBC TV to use the VRT-EBU LiveIP Studio at IBC 2016

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ADLINK Introduces Network Appliance and Media Cloud Server

Based on Intel® Xeon® Processor E5-2600 v3/v4
and Intel® Xeon® Processor E3-1500 v5
for High Performance, Compute Intensive Solutions



MICA Platform

Latest MICA-based platforms offer advanced intelligence and performance for networking and communications applications, improved graphics and processing for high-bandwidth video applications



ADLINK
TECHNOLOGY INC.

ANGA COM 2016 closes with New Record Relocation to new Exhibition Halls in 2017

- 6% visitor growth to 18,000 participants
- Number of congress attendees increases by 16% to 2,200
- Modernization initiative in 2017 with relocation to new halls
- Next show date: 30 May to 1 June 2017 in Cologne

Cologne/Germany, 9 June 2016 → Today, ANGA COM 2016 ended with an outstanding result of 450 exhibitors and 18,000 participants from 89 countries. This constitutes a visitor increase by 6 percent. 2,200 persons attended the congress programme and with that 16 percent more than in the previous year. Also the number of countries of origin increased by 20 percent.

Thomas Braun, President of the Association of German Cable Operators (ANGA): "ANGA COM was again a huge success for us. Our Cologne show team has once again excelled itself. The close combination of broadband and media as well as of the exhibition and congress has paid off. For this, I would like to thank also our cooperation partner Medienforum NRW and the altogether 12 industry associations that actively supported us. I was particularly impressed by the positive energy that could be experienced in the exhibition hall. Our industry is and will remain the most important motor for the digitization."

Also Herbert Strobel, Chairman of the Satellite & Cable Trade Association within the German Association of the Electrical and Electronics Industry ZVEI, is very satisfied: "Also this year, the success rate of ANGA COM is impressive. We, as the industry, are especially pleased that the new concept for the Broadband Day has proven right. Thus, the last day has been better attended than ever, we have been able to make many new contacts. ANGA COM with its clear profile and high internationality is and will remain the industry highlight of the year for us."

Next year and in the course of a comprehensive modernization initiative, ANGA COM will move: The event will take place in two new, spacious halls and a modern congress center in the Northern parts of the Cologne fairgrounds from 30 May to 1 June 2017. A **preview video** is available at www.angacom.de

Dr. Peter Charissé, Managing Director of ANGA COM: „After 16 years we say good bye to our former halls at our absolute best. With our relocation to the modern Northern fairgrounds, ANGA COM will reach a further milestone."

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ANGA COM

WHERE BROADBAND MEETS CONTENT

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ADLINK Introduces Network Appliance & Media Cloud Server Based on Intel® Xeon® Processor E5-2600 v3/v4 and Intel® Xeon® Processor E3-1500 v5 Product Families for High Performance, Compute Intensive Solutions

Latest MICA-based platforms offer advanced intelligence and performance for networking and communications applications, improved graphics and processing for high-bandwidth video applications

San Jose, CA, July 07, 2016 – ADLINK Technology, Inc., a leading global provider of embedded building blocks and edge computing platforms that enable the Industrial Internet of Things (IoT), today introduced the **CSA-7200 Network Appliance** and **MCS-2080 dedicated Media Cloud Server** featuring the Intel® Xeon® processor E5-2600 v3/v4 product family (codename Broadwell-EP) and Intel® Xeon® processor E3-1500 v5 product family (codename Skylake-H).

These latest products are based on ADLINK's **Modular Industrial Cloud Architecture (MICA)**, an industrial-grade delivery system designed to support the native virtualization requirements for software-defined networking (SDN) and network function virtualization (NFV), while integrating a wide range of the latest hardware acceleration technologies to boost the processing of network packets and video streams.

"The latest Intel® Xeon® processors offer important improvements over their predecessors," said Yong Luo, general manager of ADLINK's Embedded Computing Product Segment. "The Intel® Xeon® Processor E5-2600 Product Family features an increased core count, a multi-threaded design and the most robust CPU performance to date, while the Intel® Xeon® processor E3-1500 product family provides the best cost per channel by using an integrated Intel® GT4e GPU and Intel® Media Server Studio middleware to improve video processing performance without the need for an extra GPU card. Instead, the integrated GPU handles video processing tasks, making the CPU available to process analytics."



The CSA-7200 2U 19" network appliance offers up to 64x 10GbE SFP+ ports with I/O intensive architecture and flexible storage interfaces, including SATA, PCIe and M.2. The appliance is highly scalable with eight Network Interface Modules, offers advanced chassis management and is Intelligent Platform Management Interface (IPMI) v2.0 compliant. The 2U 19" rackmount form factor is ideal for communications infrastructure deployments and can be housed in platforms ranging from single socket all the way up to eight socket racks and cater to high-bandwidth communications applications that require large amounts of cores and memory working in parallel to accomplish multiple tasks and workloads. Target applications include networking, communications, security and other data center solutions where ruggedness is critical and compute requirements are intense.



The MCS-2080 also comes in a high density, 2U 19" form factor with modular compute and switch nodes scaling up to 16 systems (MCN-1500 compute node) or down to four systems (MCN-2600T compute node), with hybrid combinations supported. The MCS-2080 supports Intel® Quick Sync Video (GT4e graphics) with hardware assisted H.265/VP9 transcoding and offers dual redundant switch nodes, each providing 16x 1G internal links to compute nodes and 4x 10G uplinks. Interfaces include USB 2.0, HDMI and 8x PCIe x8 slots to meet expansion requirements. Onboard storage of 2x mSATA slots supports SSD modules up to 512GB.

The MCS-2080 is an Application-ready Intelligent Platform (ARiP) with MediaManager software providing enriched features above those of the Intel® Media Server Studio, and can be used as an end-to-end video server prototype solution to speed up product development. The MCS-2080 also supports the IPMI 2.0 with Serial over LAN (SOL) and a web-based management interface and offers adaptive fan speed and intelligent power supply monitoring. The MCS-2080 media server targets video applications such as surveillance with video analytics, video conferencing used in remote education & healthcare environments, and video transcoding for content delivery/broadcasting.

For more information on our MICA-based networking and communications offerings, please visit <http://www.adlinktech.com/MICA>



IBC TV to use the VRT-EBU LiveIP Studio at IBC

VRT (Vlaamse Radio- en Televisieomroeporganisatie): Belgian Public Broadcasting Company -- **EBU**: European Broadcasting Union

All-IP set-up available for visitors to see and test at IBC 2016 conference and exhibition in Amsterdam, 8-13 September

Brussels, Belgium – August 1 2016 – Belgian public broadcasting company VRT and European Broadcasting Union (EBU) announced today that IBC TV will be using the VRT-EBU LiveIP studio production set-up to shoot, edit and produce some of the programs covering the IBC 2016 conference and exhibition in Amsterdam, 8-13 September. IBC TV chose the LiveIP solution in light of the huge interest the industry has shown in IP and to demonstrate the encouraging possibilities of IP production.

Started in the summer of 2015, the VRT-EBU LiveIP studio is the world's first proof of concept of a complete live production that relies exclusively on IP. This summer, VRT successfully began using this solution to broadcast daily, live programming for its children's channel, Ketnet.

Driven by the **VRT Sandbox incubator program and the EBU**, and powered by a long list of partners including **Axon, Digital & Media Solutions (D&MS), Dwesam, EVS, Genelec, Grass Valley, Imagine Communications, Lawo, Nevion, Tektronix, Trilogy and Vizrt**, the LiveIP project has developed a fully functional IP production studio. Using existing open standards SMPTE 2022-6, AES67/RAVENNA, PTP and OpenFlow, this venture demonstrates a high level of interoperability and leverages the unique benefits of IP to create efficiencies, such as remote production and automation.

IBC TV

IBC TV, which delivers key stories about industry suppliers and event-related news, delivers content online and on screens **throughout the RAI Exhibition Centre**. The LiveIP project's presence at IBC 2016 is being supported by the partners, as well as the **Alliance for IP Media Solutions (AIMS)**.

The set-up will be split over three sites connected by fiber to demonstrate the flexibility provided by IP technology:

1 - The LiveIP studio floor and the control room where the production staff are based will be on **booth D10 in Hall 8**

2 - The data center holding much of the network equipment will be hosted on [EVS's booth B90 in Hall 8](#)

3 - The IBC TV studio in Hall 13 will have the capability to control the LiveIP studio remotely. The set-up will be on display for visitors at all times, and available for testing when not in use by IBC TV.

Sue Robinson, Producer IBC TV, said:

"Since the last IBC event in September 2015, the industry has made great progress in bringing IP to live production, including the development of agreed open standards, interoperability testing and of course projects like LiveIP. As the high-profile provider of content for one of the broadcast industry's biggest gatherings, IBC TV wanted to try the technology for itself and highlight the potential of IP in revolutionizing production."

Karel De Bondt, Project Manager of the LiveIP project explains:

"There is a tremendous momentum behind the use of IP and IT technology in live production because of the potential benefits of having an environment that can be remote, shared and automated. There are also a lot of questions around the maturity of the technology, so the use of the LiveIP set-up by IBC TV will be a perfect opportunity for visitors to IBC 2016, to see for themselves, how an all-IP studio can work. Visitors will also have the chance to talk with both technical and production professionals about their experience. This is very much what all of us in the project set out to do: explore the potential of IP and IT and share our findings with the industry at large."

The VRT-EBU LiveIP project recently won the 2016 EBU Award for Technology & Innovation and is shortlisted for the prestigious IBC 2016 Innovation Awards, in the Content Creation category.



Frankfurt, 12–13 October 2016

Next generation mobile networks NGMN Industry Conference & Exhibition 2016

NGMN is proud to announce the NGMN Industry Conference & Exhibition scheduled to take place at the Steigenberger Airport Hotel, Frankfurt, Germany, 12th to 13th October 2016.

As with the previous NGMN Industry Conference & Exhibitions you can expect:

- First-class line-up of top management speakers and panellists
- World-leading vendor exhibition open throughout the conference as well as the evening event
- Great networking opportunities

The agenda of the NGMN IC&E conference is filled with 5G hot topics:

Operator and industry leaders as well as subject matter experts will give an outlook on future 5G services and will discuss with the audience the required ecosystem and market conditions. They will envision the enabling 5G technology platform and present first testing results together with the most critical milestones ahead.

5G: Status of Demand & Delivery

5G Demand

- Future use-cases and the vision for the enabling 5G platform
- Vertical industry services, IoT and their impact on technology & architecture

5G Delivery

- Technology & Architecture: Development, milestones, challenges and implementation
- Trials, Testing & Proof of Concept: Global alignment and gap analysis
- Ecosystem: Characteristics of the IPR environment, Spectrum, Regulation
- Development & Standardisation: Relevance, roadmap and co-operation of Open Source and Standards
- Security, Privacy & Identity: Strategies and measures

Alongside the NGMN Industry Conference & Exhibition we look forward to celebrating with you NGMN's 10th anniversary.

Make sure you save the date! We look forward to seeing you in Frankfurt!

To inquire about exhibition or sponsoring opportunities please contact office@ngmn.org.

Red Bull Air Race HbbTV App Shortlisted for 2016 CSI Award

Salzburg/Hamburg/Ludwigsburg - August 30, 2016

Red Bull TV's vision to pioneer new experiences for its audience was recently recognized by being shortlisted in the category of 'Best interactive TV technology or application' in the highly esteemed CSI Awards 2016. The Red Bull Air Race HbbTV App was developed in cooperation with TeraVolt and 3 Screen Solutions for the Red Bull Air Race 2015 series.

The HbbTV-based innovation gave fans in Austria, Germany and Switzerland on-demand access to a new dimension of watching the aerobatic Red Bull event. For each race in the 2015 Red Bull Air Race series, the innovative platform coupled a live, fast-paced sporting broadcast with multiple information-packed data streams. Viewers can swiftly access pilot profiles, including informative statistics on performance. Furthermore, with the press of a button, fans could read technical data and historical notes on each competing aircraft.

Data from numerous sources were captured, transformed, modulated, combined and dynamically displayed as an animated overlay on the live broadcast. These included information from timekeepers, captured live during each event, and satellite GPS tracker info from devices installed in the planes, among others.

The enhanced broadcast features that TeraVolt and 3SS created made it possible for viewers to delve deep into the complexities of this high-octane sport. Viewers could swiftly access pilot profiles, technical data and historical notes on each aircraft. Analytical live-updated 'Hero Factors' – comparative evaluations and statistics on the pilots' strengths and weaknesses, standings and cumulative track records - proved the most popular feature with viewers.

About Red Bull TV

Red Bull TV is the digital video service owned by one of the world's most recognizable brands, Salzburg, Austria based Red Bull, Red Bull TV features inspirational programming from the world of Red Bull, an extensive selection of sports, music and lifestyle. entertainment. www.redbulltv.com

About Red Bull Air Race

Red Bull Air Race is an official World Championship supported by the Fédération Aéronautique Internationale (FAI). The combination of high speed, low altitude and extreme maneuverability make it accessible only to the world's most exceptional pilots. www.rebullairrace.com

About TeraVolt

TeraVolt GmbH is a privately held media production and consulting company specializing in delivering solutions that position our customers as outstanding market leaders with product lighthouses. We offer tailored solutions and services, from consulting to design. Formed in 2006, we have outstanding expertise in the fields of product strategy, process management and state-of-the-art media and entertainment technology. At TeraVolt we offer our partners an extraordinary competitive advantage, through our experience in delivering successful digital strategies with vision. We have enabled a wide range of TV platforms to deliver powerful consumer experiences. www.teravolt.tv

About 3 Screen Solutions

3 Screen Solutions helps bring video to any screen – with passion and vision. Established in 2009, 3SS is a world class innovator in the provision of advanced software solutions and services to blue-chip service providers, CE innovators and integration specialists in the multiscreen consumer entertainment ecosystem. Major satellite, cable, IPTV, OTT and mobile TV network operators and brand owners have benefitted from 3SS' creativity and capabilities. These include Unitymedia, Vodafone Kabel Deutschland, Swisscom and 02/Telefonica. Many leading hardware and network providers and SIs have selected 3SS to help optimize the services they provide to their customers. 3SS innovations have supported Eutelsat, Siemens, Rovi and Netgem. High profile retail brands also rely on solutions from 3SS to help enhance and extend their audience engagement, including Warner Brothers, ProSiebenSat.1, Red Bull Media House and BOSCH. Over 130 million people are discovering and enjoying content enabled by 3 Screen Solutions. www.3ss.tv

For more information and/or to co-ordinate a meeting during IBC, please contact:

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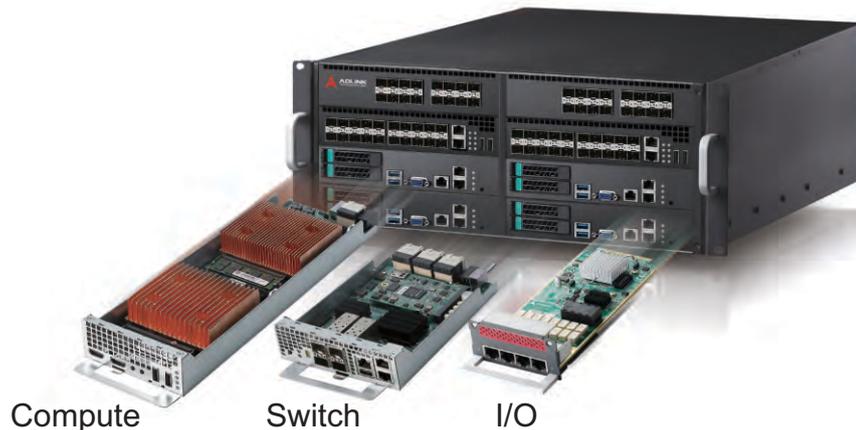
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ADLINK and Wind River Collaborate on Joint R&D Center

The two companies aim to promote Network Functions Virtualization (NFV) in the networking and telecommunications industries and accelerate the innovation and application of services

San Jose, CA – August 30, 2016 – ADLINK, a leading global provider of Industrial Internet of Things (IIoT) and communications platforms, and **Wind River** today announced the **establishment of joint lab facilities in Shanghai, China and San Jose, CA, US**, to promote the adoption of Network Functions Virtualization (NFV). The Research & Development centers will feature **Wind River Titanium Server software running on ADLINK's hardware platform based on the Modular Industrial Cloud Architecture (MICA) open framework**. The combination of technologies will offer a platform for software manufacturers, system device suppliers and service providers to test software rapidly through preliminary platform verification and system optimization, thus accelerating the application of NFV in the communications industry.



Unique to the industry, Wind River Titanium Server is a complete, commercial NFV infrastructure (NFVI) software platform that delivers carrier grade reliability and performance for NFV applications. By integrating Titanium Server with ADLINK's rugged hardware platforms, NFV can be achieved at the network edge or in the data center, providing users with greater opportunities to maximize the performance and capacity of their NFV implementation and reduce operating expenses. With Titanium Server as a software foundation, the industry can accelerate their NFV goals while ensuring carrier grade uptime and strict reliability mandated by telecom networks.

With its experience in carrier-class industrial computers and Ethernet product design and manufacturing for almost two decades, ADLINK released the new MICA open framework in March 2016, which employs a special, modular design to achieve Software-defined networking (SDN) and NFV along with the latest integrated hardware acceleration technology in order to speed up the processing of network data packages and video streaming. All functions have been integrated into the open computing structure, satisfying the key requirement of the cloud computing era for resource distribution on-demand.

"ADLINK is dedicated to promoting the development of the mobile telecommunications industry," said Jim Liu, CEO of ADLINK. "By creating a new generation ecosystem of NFV-optimized, inter-operable, standard solutions with Wind River, we can help to accelerate product time-to-market for ISPs and time-to-deploy NFV infrastructure for telecommunication device manufacturers, as well as promote rapid, low-cost function upgrades in the future."

"In order to make tangible progress towards NFV adoption, it is essential to collaborate across a wide ecosystem. Together with ADLINK, we're providing opportunities to accelerate the testing and deployment of NFV solutions," said Charlie Ashton, senior director of business development for networking solutions at Wind River. "With Wind River Titanium Server as a software foundation delivering carrier grade virtualization for NFV infrastructure, service providers can gain new flexibility and scalability while achieving significant improvements in operational costs and energy usage."

"The NFV mode not only allows the use of powerful and inexpensive server hardware, but also lets operators and enterprises deploy or update services faster and more economically than they can now. After adopting NFV, you can easily finish large-scale, network-exclusive hardware updates across vast geographic areas within several weeks or months," said Lingli Deng from China Mobile. "China Mobile is very glad to see that software and hardware companies like ADLINK and Wind River can establish strategic alliances that result in new network designs for future network device system structures and added flexibility in network infrastructure deployment."

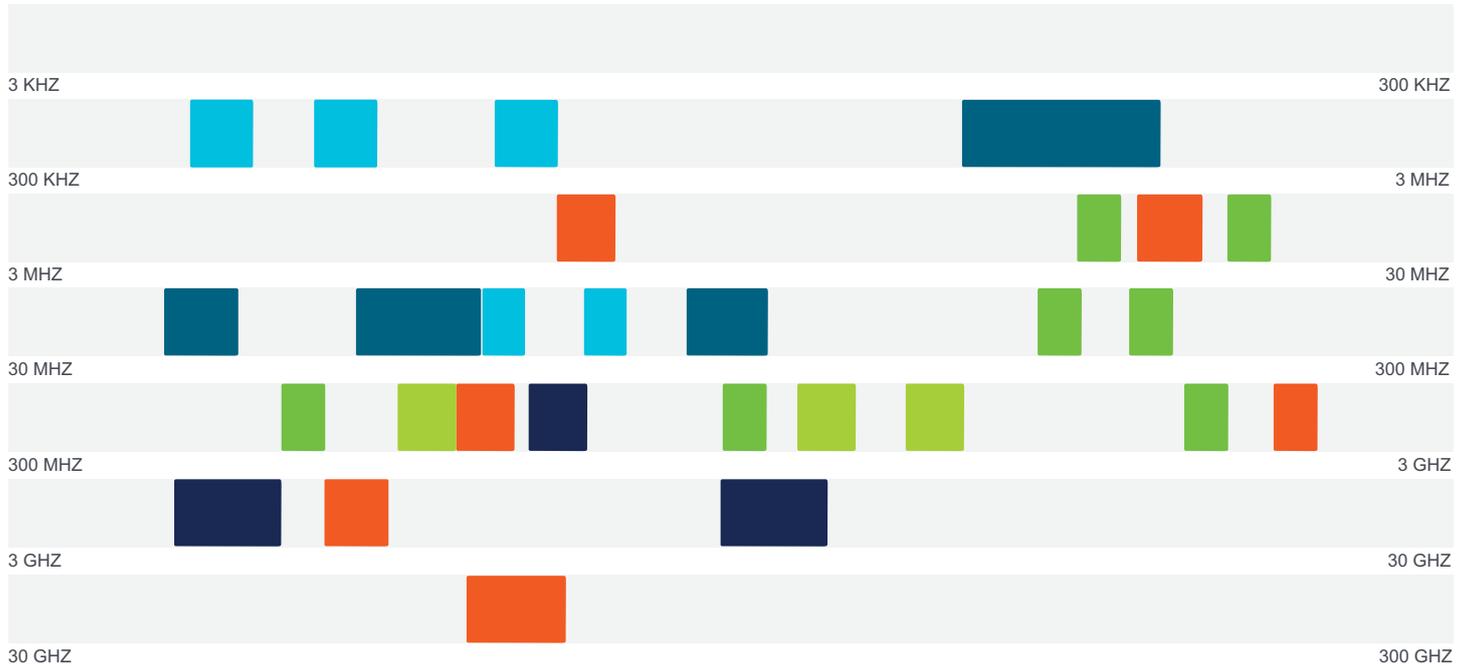
ADLINK will hold its MICA: The New 'Decide-Based-on-Demand' Structure of Industrial Application Servers technical seminars in Beijing, Nanjing and Shenzhen, China on August 30, September 6 and September 9, respectively, where ADLINK and Wind River will introduce technology related to MICA and Titanium Server.

For details, please visit:

<http://www.adlinktech.com/cn/events/2016MICA/index.php>



Identifying signals you measure with a spectrum analyzer can be difficult even with the best of tools. The radio spectrum is a shared resource and the propagation characteristics change for each frequency band. This guide discusses various radio signals and tools such as spectrum and spectrogram displays that can help identify and measure a range of radio frequency signals.



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|--------------------------------------|---------------------|---------------------------------------|
| UNLICENSED /ISM BANDS | CELLULAR | RADIO AND TELEVISION BROADCAST |
| LAND MOBILE AND PUBLIC SAFETY | AERONAUTICAL | WEATHER RADAR |

UNLICENSED/ISM BANDS

Constrained by power and frequency, many consumer (Wi-Fi, Key FOBs) and medical devices use these frequencies.
 Example Application: • WLAN 802.11b • WLAN 802.11g • Microwave Oven • DECT Cordless Phone • Bluetooth

LAND MOBILE RADIO

Trunked radio, Public and Private Mobile Radio, Distributed.
 Example Application: • P25 Phase 1 • Narrow Band FM • NXDN

RADIO AND TELEVISION BROADCAST

Applications including short wave and hobbyist spectrum. Sometimes under-utilized, long time owned by broadcasters
 Example Application: • FM Radio • ATSC – Terrestrial TV

CELLULAR

Extremely crowded and expensive spectrum. Used for mobile data and voice communications. Often replaces a hard wired communication line.
 Example Application: • LTE Downlink • LTE Uplink • UMTS Downlink • UMTS Uplink • GSM

AERONAUTICAL

Civilian flight control and communications bands.
 Includes Radars for aircraft tracking and navigation, communications, IFF.

WEATHER RADAR

Commonly used spectrum for radar, electronic warfare, and communications.
 Could be land, sea, air or space based systems.



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