NTF
NORDIC TEST FORUM

invites to

TEST FORUM 2008

*A Nordic event for exchange of experience and know-how
within the field of production test of electronics.*

*Meet colleges and experts, gain knowledge about trends
and best practices in the area of test of electronics.*

Tuesday and Wednesday, November 25th and 26th, 2008
Nordic Hotel Forum, Tallinn, ESTONIA

Test Forum 2008, November 25th – 26th, Tallinn, ESTONIA

We live in a turbulent age of globalization, which causes dramatic changes in traditional supply chains and growing impact of outsourcing. We witness the great migration of electronic production to Asia and seeing the global economic crisis these days. Despite these rapid developments, the challenge of testing of electronics has in no way diminished, and we are faced with growing complexity and changing needs in our focus of ensuring high quality in electronics products.

Test Forum, that is held every year in the month of November, is a major event for test professionals in the Nordic area and Baltic states that helps sharing good practices in testing and at the same time showing significant examples of new methodologies for testing of electronics. As usually, the main goal of the annual Test Forum event is to follow the significant technological progress that is nowadays taking place in the electronics industry. Every year the Test Forum is attended by the industry's key persons as well as by international vendors of test and measurement equipment and solutions.

In this respect, Test Forum 2008 is no exception, and many important results and methodologies will be reported during the two days of the conference. Our keynote speaker this year will be Bill Eklow from Cisco Systems. Bill is well known for his contributions at the International Test Conference, Board Test Workshop and other test related events. The title of his talk is "How to tie chip, board and system test together into a single, "seamless" test process?" Einar J. Aas from the Norwegian University of Science and Technology (NTNU) in Trondheim is the invited speaker. Einar has for many years been working with research and lecturing on VLSI design, verification and test methodologies. He will talk about Delay Testing. I am sure both presentations will be very interesting and inspiring.

A major focus this year is on LXI (LAN eXtensions for Instrumentation) technology. David Owen from the LXI Consortium will give us an update on the LXI standard. We will also have three presentations on LXI applications. SJTAG is an emerging standard intended to provide improvements in systems test via boundary scan. Ian M. MacIntosh from the SJTAG Working Group will give us an update on this work.

Other important topics will be Functional Test, Quality, Boundary Scan and Structural Test. Functional versus Structural test dilemma is selected this year for panel debate. We are sure this will be a topic that will inspire to an engaging and informative debate. An important aspect of an event like this is the informal contact between the participants. Do not miss this opportunity to meet old and new colleagues.

This year the Test Forum conference takes place for the first time in Estonia. The 2 day Test Forum 2008, is the 9th event in the series. The conference venue is Nordic Hotel Forum in Tallinn. This location has good connections by air and boat to other Nordic countries.

On behalf of the committee I wish you welcomed to TestForum 2008.

Yours sincerely

Knut Båtstoløkken

Knut Båtstoløkken
Chairman of *Nordic Test Forum*

Key Note Speaker

Bill Eklow
Cisco Systems

Bill Eklow is a Distinguished Manufacturing Engineer at Cisco Systems, Inc. In his role, Bill works with design engineers, component suppliers, board and system integrators and test engineers to identify and implement processes and tools which will improve the "end-to-end" (supplier to customer) quality of Cisco's products. Prior to joining Cisco, Bill worked at Tandem Computers for 12 years as a Senior Test Engineer/Test Architect. Before Tandem, Bill worked as a test engineer at Fairchild.

Bill has been involved in the test industry for over 30 years and has been involved with IEEE for more than 20 years. Bill was the chair of the 1149.6 working group and has been involved in the 1149.1, 1149.2 and P1687 working groups. Bill is also the general chair for the IEEE Board Test Workshop and is currently the Vice Program Chair for ITC. Bill has published several papers at ITC, DATE, ETS, BTW and EBTW. He has also contributed to two books and an article on 1149.6 in IEEE Design and Test.

Among Bill's hobbies are: golf, dining at 3 star restaurants and visiting Starbucks coffee shops all over the world.

Invited Speaker

Einar J. Aas
NTNU - The Norwegian University of Science and Technology

Einar Johan Aas received his Ph.D. degree from the Norwegian Institute of Technology (NTH) in 1972. In 1972, he joined ELAB at SINTEF (The Foundation for Scientific and Industrial Research), where he served in several positions including Head of CAD group and Senior Research Scientist. Since 1981 he has been a full professor in Electronic Design Methodology at NTH, now the Norwegian University of Science and Technology. Dr. Aas is the author and co-author of more than 300 technical and scientific publications. His current areas of research include VLSI design, verification and testing.

Nordic Test Forum in Brief

TestForum is an annual event that *Nordic Test Forum (NTF)* runs every fall/early winter. NTF may also run thematic events during a year, but these are focused events addressing basically only one topic area, each in the area of test and inspection of electronics, whereas TestForum typically has 3-thematic areas and cover the broader balance of test and inspection as well.

TestForum has its roots back the late eighties, where it originated as an event for the Norwegian electronics industry. However, from the late part of 2001 a group of people from Sweden, Norway and Denmark established the network, *Nordic Test Forum*. Later on, this activity (including the *TestForum* event) was extended to include all the Nordic countries. The language of the official presentations is English. Content and focus of the TestForum varies over time, but always within topic areas in focus at a given point in time.

TestForum has its main emphasis on issues relevant to production managers, engineers and technicians working in the fields of production, test, inspection and validation of electronics. At TestForum events we offer technically relevant presentations on methodology, tools, modules/instruments and available technology. The interaction between users and suppliers within the focus areas is an important asset of TestForum, and this balance and interaction is pursued in presentations, panel discussions, and in the planning of the events.

TestForum Aims at:

- Creating and sustaining a relevant, balanced and coherent interaction between users as well as between users and suppliers of solutions for test, inspection, validation and production of electronics.

- Providing an up-to-date view on new methodologies and tools for relevant test, inspection, validation and production of electronics.

- Establishing a relevant and balanced view on equipment, systems, tools and software from tool vendors in the domain.

Target Audience of TestForum

Engineers and technicians, managers and planners within the fields of electronics production and test, inspection and validation. Includes also decision makers in organizations that procure equipment, tools and systems for production and test, inspection and validation of electronics.

Executive Committee of TestForum and NTF

Knut Båtstoløkken	Kitron AS (Chairman)
Birger Schneider	microLEX AS (Treasurer)
Bjørn B Larsen	NTNU Department of Electronics and Telecommunications (Secretary)
Stig-Gunnar Jensen	Flextronics International Norge AS
Bengt Magnhagen	Elektronikindustriföreningen
Mick Austin	JTAG Technologies Finland
Jürgen Sedlacek	Alvetec KonTest AB
Jukka Antila	Nokia Siemens Networks
Artur Jutman	Tallinn University of Technology
Tauno Jokinen	University of Oulu

Become a Member of Nordic Test Forum

If you are involved in production test, validation test, and inspection of electronics, and your professional work is related to activities in the Nordic countries as a test professional, design engineer, manufacturer, supplier of solutions, consultant, etc., you may register as member of Nordic Test Forum (NTF) in order to benefit from:

- Exchange of know-how in testing
- Increased contact network in the Nordic countries
- Surveillance and information of International activities in the area of test and inspection
- Discounts at NTF seminars and TestForum events
- Membership list

Please register on the WEB page: http://NordicTestForum.org

Test Forum 2008 Local Organizer

The local organizer is:

        Dr. Artur Jutman
        Tallinn University of Technology
        Department of Computer Engineering
        Raja 15, 12618, Tallinn, ESTONIA
        Tel.:   +372 6202263
        Fax.:   +372 6202253
        Email: artur@pld.ttu.ee

In Association with

The TestForum 2008 event is in association with the following Nordic organizations:

Technical Program of Test Forum 2008

Nordic Test Forum (NTF) Annual Assembly, November 24th 2008

The NTF organization was established in 2001. Since then, it holds an annual general assembly a day before the Test Forum conference. This year it will be held on **November 24th at 19:30**. The agenda and motions will be dispatched to the members in a separate mailing.

If you do not intend to participate in the Annual Assembly, the Test Forum 2008 starts with registration on 25th November from 8:30 to 9:00.

Tuesday, November 25th, 2008

Time	Titles	Speakers or additional info
8:30-9:00	Registration	
9:00-9:10	**Welcome/Introduction**	Artur Jutman
9:10-10:10	**Key Note Session**	*Chairman: Knut Båtstoløkken*
9:10-10:10	How do we tie chip, board and system test together into a single, "seamless" test process?	Bill Eklow, Cisco Systems
10:10-10:40	Coffee Break / Exhibition	
10:40-12:00	**Session 1: Invited speaker / Exhibitors**	*Chairman: Bengt Magnhagen*
10:40-11:20	Delay Testing - From the Ivory Tower to Tools in the Workshop	Einar J. Aas, Norwegian Univ. of Science and Technology
11:20-12:00	Exhibitor presentations	*All Exhibitors*
12:00-12:30	Exhibition	
12:30-13:30	Lunch	
13:30-15:00	**Session 2: Functional test**	*Chairman: Stig-Gunnar Jensen*
13:30-14:00	RF testing by a Software-Defined Test Platform for Current and Future Communications Systems	National Instruments
14:00-14:30	Digital Audio Measurements Through Efficient FPGA Based Test Techniques	Birger Schneider, microLEX
14:30-15:00	Eliminate Test	Bernard Sutton, Lighthouse Creativity
15:00-15:30	Coffee Break / Exhibition	
15:30-17:00	**Session 3: Structural test**	*Chairman: Mick Austin*
15:30-16:00	Fault Modeling and Fault Diagnosis in Digital Systems	Raimund Ubar, Tallinn Univ. of Technology
16:00-16:30	Reverse Engineering for Board Test	Luca Corli, SEICA
16:30-17:00	Integrating Boundary Scan and Analog Opens techniques	Mike Smith, Teradyne
17:00-17:25	Fruit & Refreshments / Exhibition	
17:25-17:40	News from Conferences	*Chairman: Birger Schneider*
17:40-19:00	**Panel debate: Will structural test finally wipe out the needs for functional test**	*Panel moderator: Birger Schneider* Panelists: Mike Smith, Bernard Sutton, David Owen, Knut Båtstoløkken, Stig-Gunnar Jensen
20:00	Dinner in Olde Hansa	
22:30	Social get-together in Nordic Hotel Forum	

Wednesday, November 26th, 2008

Time	Titles	Speakers or additional info
8:30-10:00	**Session 4: System Test & Quality Management**	*Chairman: Bengt Magnhagen*
8:30-9:00	PostgreSQL: The world's most advanced open source database	Rolf Østvik, AXXE AS
9:00-9:30	Magellon Quality Lifecycle Management	Paul Attwell, CIMTEK
9:30-10:00	SJTAG Backgrounder	Ian M. McIntosh, SELEX Sensors and Airborne Systems
10:00-10:30	Coffee Break / Exhibition	
10:30-12:00	**Session 5: Boundary Scan**	*Chairman: Artur Jutman*
10:30-11:00	Boundary Scan and Emulation - Complement or Contradiction?	Jan Heiber, GOEPEL Electronic
11:00-11:30	Board testing of VDSL2 DSLAM using Boundary Scan	Magnus Björk, Elcoteq Tallinn
11:30-12:00	GEB techniques to fast BScan test Fixture development and manufacturing	Francesca Gabbani, GEB-GROUP
12:00-13:00	Lunch	
13:00-14:30	**Session 6: LXI**	*Chairman: Birger Schneider*
13:00-13:30	LXI Standard Evolution	David Owen, Pickering Interfaces, LXI consortium
13:30-14:00	Comparing LXI and Modular Platforms for Implementation of High Density switching functions.	David Owen, Pickering Interfaces
14:00-14:30	Modular Mass Interconnect Solutions for LXI	Gary Clayton, MAC-Panel
14:30-15:00	Coffee Break / Exhibition	
15:00-16:30	**Session 7: Instrumentation**	*Chairman: Mick Austin*
15:00-15:30	Synthetic Instruments – an overview	Niclas Björsell, Gävle Universty Musab Siddiq, Hapro
15:30-16:00	RFID – a tool in logistics. Deployment test.	Martin Viktil, SINTEF
16:00-16:30	Advanced X-ray inspection: µAXI and nanofocus Computed Tomography	Dr. André Egbert, phoenix|x-ray Systems + Services GmbH
16:30-16:40	Closing Session: concluding remarks	*Knut Båtstoløkken*

Dinner and Social Get-Together

Be prepared for a lavish Royal Hunting Feast in a medieval restaurant Olde Hansa. Olde Hansa was established to honour the Hanseatic League and our forefathers and foremothers. Olde Hansa is the home of a rich merchant. His house is built in a manner to increase the enjoyment of the happy moments in the life of a Hanseatic merchant. Not just for eating delicious food and savoring good drink, but also for the enjoyment of good music and the wamrth of hearth and home during the Hanseatic times.

After the dinner everybody are invited back to Nordic Hotel Forum, where we have prepaid one drink per participant in the hotel lobby bar. We wish you an enjoyable evening and a lot of interesting discussions!

Exhibition

As usually, a mini exhibition will take place in frames of Test Forum event where vendors are welcome to present their tools and methodologies related to production test. Exhibitors can make arrangements with NTF about exhibition space. If nothing special has been agreed, a table of about 60x120 cm^2, as well as

space for posters or similar material will be provided. Every exhibitor will be given 7-8-minute slot in the program for a brief introduction.

Registration and hotel booking

The **Conference Fee** is EUR 390 for NTF members, EUR 195 for students and EUR 425 for others. The fee includes participation, food and refreshments from Tuesday morning to Wednesday afternoon as well as forum proceedings on the USB memory. Exhibitors pay EUR 750, which also includes the participation of a single person.

The seminar fee will be invoiced directly to the organisation, from which the participant comes. In the event of cancellation after the final registration date, or in the event of failure to appear, the entire fee is still due. On request, another person from the same organisation can participate instead.

The hotel rooms are booked through the seminar registration, but the room rate is paid directly by each participant to the hotel (i.e. not included in the seminar fee). **The room rate** is EUR 105 single per night including breakfast. The double room rate is EUR 120.

Booking of rooms at the conference hotel is **not** mandatory for participation at the conference.

The **registration deadline is Friday, November 7th, 2008**, in order to guarantee hotel room. **Registration after this date is also possible**. However, we cannot guarantee that hotel rooms will be then available at the conference hotel.

The conference hotel can be also contacted directly (see: www.nordichotels.eu/eng/nordichotelforum). In such an event, please, provide the "NTF2008" code when booking in order to benefit from the reduced fees for conference participants.

Registration for Test Forum 2008 can be done through the NTF website by using the following link.

- http://www.nordictestforum.org

Alternatively, one can contact the Test Forum secretariat at

> microLEX Systems A/S
> Dr. Neergaards Vej 5C
> DK-2970 Hoersholm
> Denmark
>
> Att.: Suzanne Holte
>
> Tel.: +45-45 76 21 00
> Fax: +45-45 76 22 00
> Email: sho@microlexsys.com
> Web: www.microlexsys.com

Please indicate, whether you register as:

- NTF member   EUR 390
- A non-member   EUR 425
- A student (with valid student ID)   EUR 195
- An exhibitor, i.e. want to exhibit in the small exhibition   EUR 750
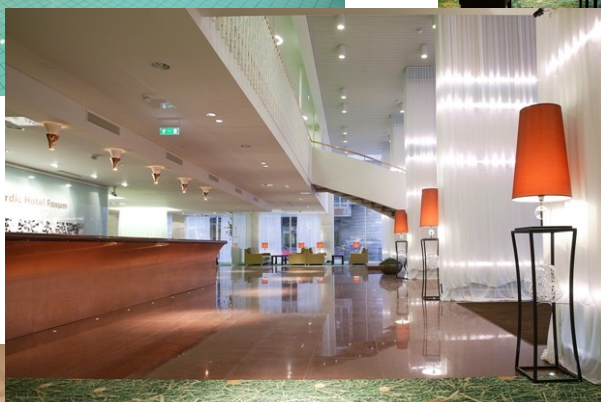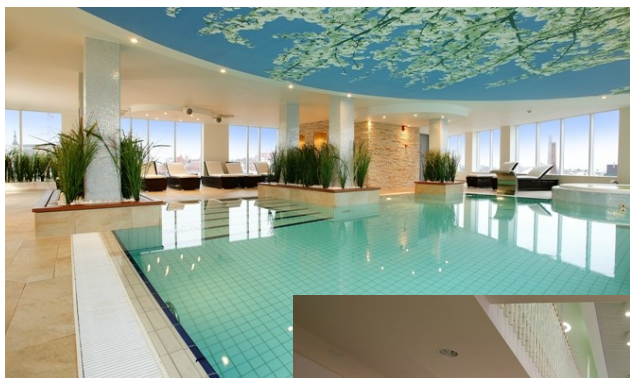
Please indicate whether you need a room at the conference hotel:

- Dates of arrival and departure
- Single or double room

Test Forum 2008 Venue and Travel Information

Nordic Hotel Forum

Test Forum 2008 will take place in Nordic Hotel Forum that is situated right in the heart of Tallinn's business center, only a short stroll from medieval old town. The location in the very heart of the city brings all possible adventures in Tallinn close together. The Nordic Hotel Forum is a cozy stopover, which transforms itself according to your moods. Giving way to desires, the hotel offers you the possibility to find yourself in the middle of the city life or enjoy its peace and quiet. The unique mixture of crispness and homely warmth of a Nordic country, in the middle of a fast-paced city, is the best place to gain new experience. The business area, tourist sights and museums, major attractions and theatres are easily accessible by foot.

Traveling to and from Tallinn

Tallinn is well accessible by plane, boat, train, or bus.

By Plane

Tallinn Airport (TLL) is situated just 4 km away from Tallinn downtown and the NTF'08 venue. Tallinn is connected by air with major European airports: Copenhagen, Stockholm, Helsinki, London, Frankfurt, Paris, Moscow, Prague, and many others. The full list of connections together with the full timetable is available here. The list of carriers is available at the Tallinn Airport's home page.

Taxi

The most convenient way to travel from the airport to the city center is a taxi where normal fare is approximately 120 EEK (ca. 8 EUR). There is no need to neither ask for a price nor argue with the driver before entering a taxi. Just make sure that the meter is switched on. The pricing in different taxi companies is almost the same - around EEK 10 per km. In many taxis you can use major credit cards (VISA, Eurocard/MasterCard) besides paying in cash.

Bus from the airport

The public bus no. 2 will take you to the city center. The journey takes 15-20 minutes. Bus fare is 20 EEK (ca. 1,2 EUR). Tickets are sold by the driver in the bus. Airport bus stop is located in front of departure hall. Further information is available at the Tallinn Transport Department website. The public transportation map can be found here.

By Boat

The Port of Tallinn is connected by sea routes to Stockholm and Helsinki. There are more than 20 journeys per day to/from Helsinki provided by 4 operators and one daily departure to Stockholm. The timetable can be found here and here. The Passenger Port is located in the city center very close to the old town. The best way to reach the conference location from the port is a taxi (see description above). It is also possible to reach the Nordic Hotel Forum on foot, which would take approximately 15 minutes.

By Helicopter

For those who enjoy alternative means of transportation, there is an exclusive helicopter connection between Tallinn and Helsinki with its 12 daily scheduled flights on weekdays. It takes only 20 minutes to travel between the passenger port of Helsinki and Tallinn city center. Copterline's terminal is situated right by the old town of Tallinn - close to the Passenger Port. You will find the timetable and flight rules at Copterline's website.

By Bus

There are bus connections to Baltic Countries, Poland, Germany, Russia, and Ukraine. The largest bus operator is Eurolines company. The timetable and pricelist are available here. The Tallinn bus terminal is located just 2 km from the city center.

By Train

There is a railway connection from Tallinn to Moscow. For details click here.

Visa Info

As of 21 December 2007, Estonia is a part of the Schengen visa area. If you are not sure about visa regulations between your country and Estonia, check the following page. Other useful consular information is available at the website of Estonian Ministry of Foreign Affairs.

Map of Tallinn downtown

Please note, the **conference dinner on November 25th** will be held outside the conference hotel. We will visit a medieval restaurant **Olde Hansa** located in the Old Town just 600 meters away from Nordic Hotel Forum. All Test Forum participants are kindly requested to be in the hotel lobby at 19:45 where we will start our walk to Olde Hansa restaurant.