

NTF

NORDIC TEST FORUM

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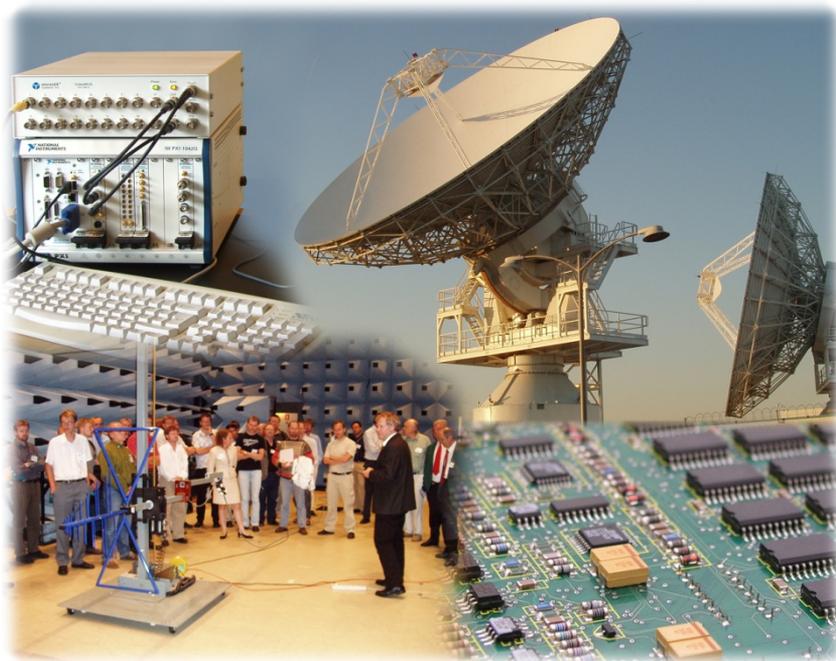
TestForum 2012

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

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

Tuesday and Wednesday, November 27th and 28th, 2012

Comwell/Borupgaard, Snekkersten, Denmark



TestForum 2012 November 27th & 28th Snekkersten, Denmark

For TestForum 2012 we have managed yet again to put an exciting program together, well balanced and covering essential disciplines of test of electronics.

The keynote speaker this year is Stig Lumbye, Executive Vice President at Danish Research, Consultancy and Test Service organization in electronics, light and acoustics, DELTA in Hoersholm. DELTA is an organization with over 350 employees, more than half of which are researchers and technical people with a university degree in technical disciplines. Stig Lumbye will present his vision on:

“Data Mining in Test – the Source to Wisdom and Prosperity?”

It is based upon a common set of experience and information from vast amounts of test over the years and has led to a new approach in optimizing test strategies for future test tasks.

For the two days’ of conference we have managed to get a number of leading people from the test community, primarily from Europe, but even the USA, to present essential views on progress in test strategies and the use of electronic test in important industrial applications. The presentations cover a range of important aspects of test domains, which find use in many leading industries throughout the world.

At the end of the first day, we will also have an interesting panel discussion on:

“Where is test of electronics heading?”

A panel of experts and users will present their personal views on the topic, and a follow up debate between panelist and the attendants will help clarify the directions that the electronics industry are likely to take over the coming years for the domains of testing of electronics systems and modules.

Starting the second day, Bill Eklow, Cisco, USA, offers a one hour tutorial on new approaches in boundary scan testing and the emerging IJTAG standard for embedded test applications.

TestForum 2012 includes many other highly interesting topics, which are too lengthy to detail here. Have a look at the program and convince yourself that TestForum is an event that is important to attend. Missing the opportunity to go to TestForum 2012, means missing an essential opportunity to get on the forefront of test technology for the electronics industry.

On behalf of the committee I wish you welcome to TestForum 2012 and a successful acquisition of know how in the field of testing of electronics.

Yours sincerely



Knut Båtsløløkken
Chairman of *Nordic Test Forum*

Key Note Speaker***Stig Lumbye***

Executive Vice President,
DELTA, Danish Electronics, Light and Acoustics

Stig Lumbye has over 25 years' experience in development and test of electronics systems and modules. He has a long-standing experience within development, marketing and sale of high technological solutions. His main contributions and major driving forces are business development, management and cooperation over country- and culture borders. Stig has, first as a Project Manager at Hope Computers, later on as Director, BDP, at Bruel & Kjaer and most recently as Executive Vice President at DELTA contributed with strategic development and geographical expansion of business areas, and he has initiated and completed a number of initiatives within employee- and organization development.

Today Stig Lumbye manages a consultancy and test house with about 100 top specialists within electronics, reliability and acoustics.

**Invited Speaker, Tutorial*****Bill Eklow***

Cisco, USA

Bill Eklow is a Distinguished Manufacturing Engineer at Cisco Systems, Inc., USA. 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 35 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.



Nordic Test Forum in Brief

Test Forum 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.

Test Forum 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 *Test Forum* event was extended to include all the Nordic countries. The language of the official presentations is English. Content and focus of the Test Forum varies over time, but always within topic areas in focus at a given point in time.

Test Forum 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 Test Forum 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.

Test Forum 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 Test Forum

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 Båtstøløkken	Kitron AS (Chairman)
Birger Schneider	DELTA, Danish Electronics, Lights and Acoustics (Treasurer)
Bjørn B Larsen	NTNU Department of Electronics and Telecommunications (On sabbatical)
Stig-Gunnar Jensen	Eltek Valere
Bengt Magnhagen	Svensk Elektronik (Secretary)
Mick Austin	JTAG Technologies Finland
Jürgen Sedlacek	Alvetec KonTest AB
Artur Jutman	Tallinn University of Technology

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 Test Forum events
- Membership list

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

Test Forum 2012 Local Organizer

The local organizer is:

Birger Schneider
DELTA
Venlighedsvej 4
2970 Hoersholm
Denmark

Tel.: +45 7219 4744
Mobile: +45 4055 21 00
Email: bis@delta.dk

In Association with

The Test Forum 2012 event is in association with the following Nordic organizations:



Technical Program of Test Forum 2012

Nordic Test Forum (NTF) Annual Assembly, November 26th 2012

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 26th at 20:30**. 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 2012 starts with registration on November 27th from 8:30 to 9:00.

Tuesday, November 27th, 2012

Time	Titles	Speakers or additional info
8:30-9:00	Registration	
9:00-9:10	Welcome/Introduction	Knut Båstoløkken
9:10-10:00	Key Note Session	<i>Chairman: Knut Båstoløkken</i>
9:10-10:00	Data Mining in Test – the Source to Wisdom and Prosperity?"	Stig Lumbye, DELTA
10:00-10:20	Exhibitor Forum, short presentations	<i>Chairman: Bengt Magnhagen</i>
10:20-10:50	Coffee Break / Exhibition	
10:50-12:20	Session1: Functional Testing 1	<i>Chairman: Stig-Gunner Jensen</i>
10:50-11:20	How to select a test platform among the several different options like PXI, LXI and AXI	Alexander Frew, Agilent
11:20-11:50	High Density Switch Selection for Maximum Reliability & Performance	Shaun Fuller, Pickering
11.50-12:20	Building a complete reliable Test solution using autonomous subsystems (modules) lead to great Engineering benefits	Peter van Oostrom, 6TL Engineering
12:20-13:30	Lunch	
13:30-15:00	Session 2: Structural Testing	<i>Chairman: Mick Austin</i>
13:30-14:00	Just-enough, Best test coverage	Jonathan O'Connell, Agilent.
14:00-14:30	Flying Probe Multi-Probe System for Functional Test and Design Validation	Marco Barahmand, Acculogic
14:30-15:00	Embedded Instrumentation for Test Quality Improvement	Artur Jutman, TU Tallinn
15:00-15:30	Coffee Break / Exhibition	
15:30-16:00	Session 3: Functional Testing 2	<i>Chairman: Stig-Gunner Jensen</i>
16:00-16:30	FLEXSTAND OI - a simple way to create an Operator Interface	Anders Meister, CIM Systems
16:30-17:00	News from Conferences	
17:00-17:30	Fruit & Refreshments / Exhibition	
17:30-19:00	Panel debate: "Where is test of electronics heading?"	<i>Panel moderator: Birger Schneider</i>
20:00	Dinner	
22:00	Social get-together in the Bar	

Wednesday, November 28th, 2012

Time	Titles	Speakers or additional info
9:00-10:30	Session 4: Boundary Scan & JTAG	<i>Chairman: Artur Jutman</i>
9:00-10:00	Invited Speaker, Tutorial New features and opportunities with JTAG, 1149.1 and JTAG (IEEE P1687),	Bill Eklow, Cisco, USA
10:00-10:30	JTAG based Board Level Testing - How to make it work	Jan Heiber, Göpel
10:30-11:00	Coffee Break / Exhibition	
11:00-12:30	Session 5: RF Testing	<i>Chairman: Birger Schneider</i>
11:00-11:30	Time Meets Frequency	Kenneth Rasmussen, Rohde & Schwarz
11:30-12:00	REVERB Stress EMC Test to Detect Possible Field Failures	Anders Mynster, DELTA
12:00-12:30	Merging high-performance instruments and FPGAs for meeting hard RF test challenges	Remco Krul, National Instruments
12:30-13:30	Lunch	
13:30-15:00	Session 6: Miscellaneous Testing	<i>Chairman: Knut Båttstøløkken</i>
13:30-14:00	Halt/HASS Testing – Weeding Out Design Errors through Accelerated Testing	Suzanne Otto, DELTA
14:00-14:30	A BIST strategy for a NoC switch Controller Described	Kim Petersén, HDC
14:30-15:00	From Electro Acoustic Testing over Perceptual Testing to the World of Affective Measurements	Birger Schneider, DELTA
15:00-15:15	Closing Session: concluding remarks	<i>Knut Båttstøløkken</i>

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 cm², 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.

Poster Sessions

Presenters see here!

As a new activity, we this year institute a Poster Session. It consists of a poster board for each poster presentation, approximately 1,5 m wide x 0,75 m high. The intention is that presenters can put copies of their main slides up on the poster board wall right after a session ends. That will enable attendees and presenters to get into a more detailed discussion on specific issues of the presentation that may otherwise not be handled in the short Q&A interval after each presentation. Each presenter will have a poster board available. After the break, the poster boards need to be cleared to make room for poster for the following session.

The poster material itself can be as simple as simple A4 copies of essential slides, and possibly some additional info, and/or it can be more advanced printouts supporting the views of the previous presentation.

We hope that the poster session will contribute further to the exchange of concepts and ideas and lead to fruitful discussions, hence stimulate the general transfer of knowledge.

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 organization, 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 organization 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 DKK 1245 (EUR 167) single room and DKK 1545 (EUR 207) double room per night, including breakfast.

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

The **registration deadline is Monday 12th, November, 2012**, in order to **guarantee hotel room. Registration after this date is also possible**. However, we cannot guarantee that hotel rooms are available at the conference hotel.

Registration for TestForum 2012 can be done through the NTF website by using the following link.

- <http://NordicTestForum.org>

Alternatively, one can contact the TestForum secretariat at

Att.: Suzanne Holte
Tel.: +45-2088 5972
Email: suzanne@nordicestforum.org

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

Comwell Borupgaard, Snekkersten, Danmark

Located in beautiful North Zealand (Nordsjælland), you find one of the most attractive hotel and conference centers in Denmark. An old manor house with the addition of a new, modern-style wing creates a unique atmosphere combining old fashioned charm with completely modern facilities.

Comwell Borupgaard offers 158 bright, comfortable rooms including 4 suites, two fine restaurants and a banqueting hall (seating capacity 450), indoor pool, fitness center and beautiful surroundings. The charming city of Elsinore (Helsingør) with Hamlets castle Kronborg, Sweden and Louisiana Museum of Modern Art are all close by.



Transport to Comwell Borupgaard

Comwell Borupgaard is located 400 m from Oeresund (Øresund), about 40 km North of Copenhagen (København) and 3½ km South of the city center of Elsinore (Helsingør).

Copenhagen (København). If you arrive from Copenhagen, it is quite easy to come by public transportation. Take the train on the coastal route (Kystbanen), direction Elsinore (Helgingør). You may leave from the Central Station, from stations at Nørreport or Østerport or other stations on the coastal line. Trains are leaving every 20 minutes. The trip to Snekkersten is about 45 minutes. Snekkersten is the second but last station before Elsinore. Upon arrival at Snekkersten, leave the station towards North, step across the street and here you see the small lane leading up to Comwell Borupgaard. You will have to walk about 250 m.

Kastrup, Copenhagen Airport. You may take public transportation. Take the train, one level down from the arrival hall, direction Elsinore (Helgingør) via Copenhagen Central Station. The trip takes 1:02 hours. Normally you need not change at Copenhagen Central Station but can remain in the same train. Follow the same procedure as above (Copenhagen).

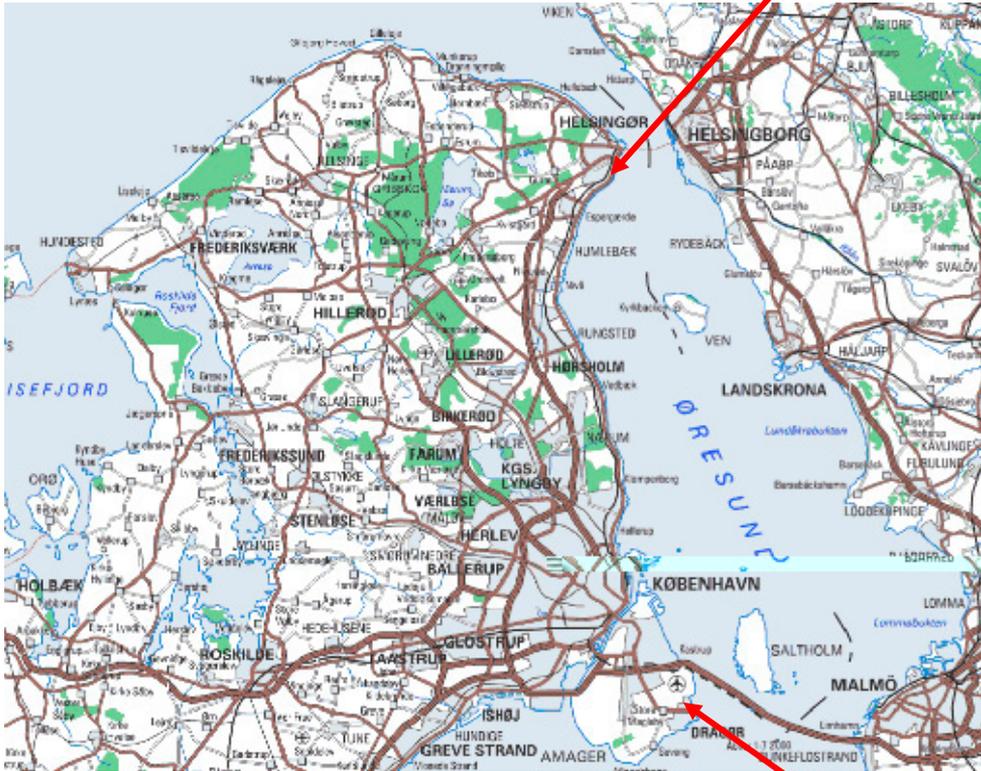
Elsinore (Helsingør). Take the train Southbound for Copenhagen one station and get off at Snekkersten, or get a taxi for the 3½ km ride. (Ferries to and from Sweden leave every 20 minutes from Elsinore to Helsingborg in Sweden. The ferry to Oslo may be boarded at Helsingborg).

By Car via Motorway E47/E55. Drive North, direction Elsinore (Helsingør). When the motorway ends, continue straight on towards Elsinore on the Kings Road (Kongevejen). At the second roundabout turn right towards Snekkersten following O3, "Klostermosevej". Drive about 1½ km until you reach a railway viaduct. Do not go under this but turn left on "Nørrevej". After about 800 m you reach the entrance for Comwell Borupgaard on your left.

By Car on the Coastal Road (Strandvejen). Halfway between the 38 km milestone, at Skotterup, og the 39 km milestone, at Snekkersten, you see a road, "Klostermosevej" leaving in the direction of Northwest (opposite the coastal side). Follow this about 650 m until you have passed under two railway viaducts. Now turn right on "Nørrevej". After about 800 m you see on your left the entrance to Comwell Borupgaard.



Comwell Borupgaard, Snekkersten



Copenhagen Airport, Kastrup

Welcome to TestForum 2012

