

# NTF

**NORDIC TEST FORUM**

invites to

# TestForum 2015

*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 24<sup>th</sup> and 25<sup>th</sup>, 2015

**Clarion Hotel Royal Christiania, Oslo, Norway**



## TestForum 2015 November 24<sup>h</sup> & 25<sup>th</sup> Oslo, Norway

I would hereby like to invite you in Oslo to the annual NTF conference.

Also this year, we have managed to put an exciting and interesting technical program together, covering essential disciplines of test of electronics. The invited experts will share the news and technological breakthroughs in their respective areas. This year we have speakers from the Nordic countries as well as from UK, The Netherlands, Germany and USA.

The keynote speaker this year is **Israel Losada Salvador, Chief Operating Officer, Kitron ASA**. He will speak about **"Driving profitability and customer success through Operational Excellence"**.

**Bill Eklow (USA)** is our invited speaker. He will talk about **"The Impact of IOT on the Network and its Implication to Test"**.



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At the end of the first day, we will also have an interesting panel discussion on the topic: *"Is simulation removing the need for physical test?"*

A panel of experts and users will present their personal views on the topic, and a follow up debate between panelists and the attendants.

The technical and business discussions will continue during and after the conference dinner.

On behalf of the committee, I wish to welcome you to TestForum 2015!

Yours sincerely

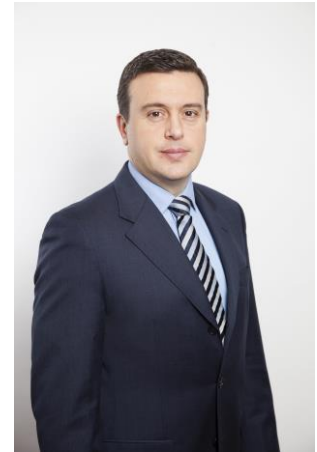


Knut Båtstøløkken  
Chairman of *Nordic Test Forum*

## Key Note Speaker

**Israel Losada Salvador**  
**Chief Operating Officer**  
**Kitron ASA**

Born in 1973 in Spain. After 12 years working for Schlumberger in different positions, joined Kitron in 2013 as Chief Operating Officer. Mr. Salvador has extensive experience from operations within the Oil & Gas sector and has a Masters degree in Finance & Administration from NHH (Norway) and a Masters degree in Engineering from the Polytechnic University of Valencia.



## Invited Speaker

**Bill Eklow**  
**Distinguished Manufacturing Engineer**  
**Cisco, USA**

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 that will improve the “end-to-end” (supplier to customer) quality of Cisco’s products. Bill has been working at Cisco for over 18 years. 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 (when it was still 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 is a fellow of the IEEE, a Golden Core member and an Eta Kappa Nu member. Bill was the chair of the 1149.6-2002 working group and chair of the current IEEE P1149.6 revision. Bill has also been an active working group member in the IEEE 1149.1, P1687 and P1838 working groups. Bill is currently the Program Chair for IEEE International Test Conference (2015). Bill is also the general chair for the IEEE Board Test Workshop and is chair of the IEEE Board Test Technical Activities Committee (BTTAC). Bill has published several papers and has also contributed to two books.

Among Bill’s hobbies are: golf, dining at 3 star restaurants, visiting Starbucks coffee shops and collecting Hard Rock Café tee shirts from all over the world.



## Nordic Test Forum in Brief

*TestForum* is an annual event that *Nordic Test Forum (NTF)* runs every fall/early winter. TestForum typically has 3-thematic areas and cover a broad balance of test and inspection.

*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 Norway, Sweden 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 event and NTF organization

Knut Båstoløkken	Kitron AS, Norway (Chairman)
Birger Schneider	DELTA, Denmark (Treasurer)
Bjørn B Larsen	NTNU, Norway (Secretary)
Stig-Gunnar Jensen	Eltel AS, Norway
Mick Austin	JTAG Technologies Finland, Finland
Artur Jutman	Tallinn University of Technology, Estonia
Erik Larsson	Lund University, Sweden
Lars Kongsted-Jensen	EP-TeQ A/S, Denmark
Magnus Rönqvist	Syntronic Test Systems AB, Sweden
Mauri Aalto	Neste Jacobs OY, Finland
Raimedas Sodaitis	UAB Kitron, Lithuania
Bill Eklow	Cisco Systems, USA (associate member)

## 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://www.NordicTestForum.org>

## TestForum 2015 Local Organizer

The local organizer is:

**Stig-Gunnar Jensen**

Eltek

PO Box 2340 Strømsø,

NO-3003 Drammen

Phone: +47-32203200

E-mail: [stig-gunnar.jensen@eltek.com](mailto:stig-gunnar.jensen@eltek.com)

## Technical Program of TestForum 2015

### Nordic Test Forum (NTF) Annual Assembly, November 23<sup>rd</sup> 2015

The NTF organization holds an annual general assembly a day before the TestForum conference. This year it will be held on **November 23<sup>rd</sup> at 20:00**. The agenda and motions will be dispatched to the members in a separate mailing.

### Tuesday, November 24<sup>th</sup>, 2015

Time	Titles	Speakers or additional info
08:30-08:50	Registration	
<b>08:50-09:00</b>	<b>Welcome / Introduction</b>	Knut Båtstøløkken
<b>09:00-10:00</b>	<b>Key Note Session</b>	<i>Chairman: Knut Båtstøløkken</i>
09:00-10:00	Driving profitability and customer success through Operational Excellence	Israel Losada Salvador, Kitron ASA
<b>10:00-10:30</b>	<b>Exhibitor Forum: short presentations</b>	<i>Chairman: Mick Austin</i>
10:30-11:00	Coffee Break / Exhibition	
<b>11:00-12:30</b>	<b>Session 1: JTAG based test</b>	<i>Chairman: Lars Kongsted-Jensen</i>
11:00-11:30	Automated test of High Speed interfaces with programmable BER	Jan Heiber, Goepel
11:30-12:00	IEEE 1687 An Introduction	Martin Keim, Mentor Graphics
12:00-12:30	Mixed-signal boundary-scan in practice	Marcel Swinnen, tpb electronics
12:30-13:30	Lunch	
<b>13:30-15:00</b>	<b>Session 2: Test Strategies and Test Quality</b>	<i>Chairman: Stig-Gunnar Jensen</i>
13:30-14:00	Functional Test – Test strategy of the future?	Lothar Diez, Spea
14:00-14:30	Big Data Solution for test	Vidar Grønås, Virinco
14:30-15:00	Out Sourced Test - Customer view	Mikko Karjalainen, Palodex
15:00-15:30	Coffee Break / Exhibition	
<b>15:30-16:30</b>	<b>Session 3: Fixturing and test interfaces</b>	<i>Chairman: Bjørn B. Larsen</i>
15:30-16:00	Benefits of eliminating cables from ATE systems	Gary Clayton, MAC-Panel
16:00-16:30	PCB design from a mechanical point of view	Per Milborg Pedersen, Mekan
<b>16:30-17:00</b>	<b>News from conferences</b>	<i>Chairman: Artur Jutman</i>
17:00-17:30	Fruit & Refreshments / Exhibition	
<b>17:30-19:00</b>	<b>Panel debate: "Is simulation removing the need for physical test?"</b>	<i>Panel moderator: Birger Schneider</i>
<b>19:30</b>	<b>Dinner</b>	

## Wednesday, November 25<sup>th</sup>, 2015

Time	Titles	Speakers or additional info
<b>09:00-10:00</b>	<b>Session 4: Invited speaker</b>	<i>Chairman: Magnus Rönnqvist</i>
09:00-10:00	The Impact of IOT on the Network and its Implication to Test	Bill Eklow, Cisco Systems
<b>10:00-11:00</b>	<b>Session 5: Quality aspects</b>	<i>Chairman: Magnus Rönnqvist</i>
10:00-10:30	Addressing No Failure Found in Board Test by Modeling and Embedded Instrumentation	Artur Jutman, Testonica Lab
10:30-11:00	High Voltage and electronic drivers	Birger Schneider, Delta
11:00-11:30	Coffee Break / Exhibition	
<b>11:30-13:00</b>	<b>Session 6: Functional test</b>	<i>Chairman: Raimedas Sodaitis</i>
11:30-12:00	The Power of Measurement IP Through the Test Lifecycle	Robert Hood, Keysight Technologies.
12:00-12:30	EMI debugging with Tektronix Mixed Domain Oscilloscope	Derek MacLachlan, Tektronix
12:30-13:00	Wheeler Analysis – A powerful alternative to a traditional Gage R&R	Mattis Ericsson, AddQ Consulting
13:00-14:00	Lunch	
<b>14:00-15:00</b>	<b>Session 7: Automatic inspection and structural test</b>	<i>Chairman: Erik Larsson</i>
14:00-14:30	Contactless testing	Abdelghani Renbi, Luleå University of Technology
14:30-15:00	Building, modular, scalable, flexible and above all reliable ATE's that last	Peter van Oostrom, 6TL
15:00-15:15	Closing Session: TestForum concluding remarks	<i>Knut Båtstøløkken Kitron</i>

## Exhibition

As usually, a mini exhibition will take place in frames of TestForum 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<sup>2</sup>, 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 450 for NTF members, EUR 250 for students and EUR 525 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 850, 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 1480 NOK single room and 1680 NOK 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 Sunday 8<sup>th</sup>, November, 2015**, 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 2015 can be done through the NTF website by using the following link.

- <http://www.NordicTestForum.org>

Alternatively, one can contact the TestForum secretariat at

Att.: Suzanne Holte  
Tel.: +45-2088 5972  
Email: [suzanne@nordicestforum.org](mailto:suzanne@nordicestforum.org)

Please indicate, whether you register as:

- |  |         |
|--|---------|
| • NTF member   | EUR 450 |
| • A non-member   | EUR 525 |
| • A student (with valid student ID)                          | EUR 250 |
| • An exhibitor, i.e. want to exhibit in the small exhibition | EUR 850 |

Please indicate whether you need a room at the conference hotel:

- Dates of arrival and departure
- Single or double room



## Clarion Hotel Royal Christiania, Oslo, Norway

TestForum 2015 will take place at Clarion Hotel Royal Christiania Oslo, which is situated in the center of Oslo. Details about the hotel is at: <https://www.nordicchoicehotels.no/clarion/clarion-hotel-royal-christiania/>

### Hotel address

Biskop Gunnerusgt. 3  
NO-0106 Oslo

### Getting to the hotel

From Oslo Gardermoen Airport:

- Flytoget Airport Express train to Oslo S / Jernbanetorget – 100 metres.
- SAS Flybussen Airport bus to Oslo bus terminal – 25-50 meters.
- Taxi fare from Gardermoen is about NOK 850 to central Oslo. Don't forget to ask for a fixed price.
- 50 km, about 35 minutes by car.



By car:

- Parking garage “Royal P-hus” with entrance from Skippergata.

By metro and train:

- Oslo S/Jernbanetorget – 25-50 meters.

By bus:

- All local buses to Jernbanetorget.
- Airport bus and long-distance buses to Oslo bus terminal.

