

NTF

NORDIC TEST FORUM

invites to

TestForum 2017

*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 28th and 29th, 2017

Sokos Hotel Flamingo, Vantaa, Finland



TestForum 2017 November 28th & 29th Vantaa, Finland

On behalf of the Nordic Test Forum committee I would like to invite you to Vantaa to the annual NTF conference. This is the third time of visiting Finland for our annual conference. Vantaa is part of the so called Greater Helsinki area consisting of Helsinki, Espoo and Vantaa. Vantaa is the location of the Helsinki international airport and the conference hotel is a short taxi or public transport ride from the airport.

Please be aware that this year the registration for the hotel is made directly with the hotel. Please read the section on page 8 on how to make the registration at the hotel to receive the discount rate.

TestForum 2017 has an excellent technical program, focusing on test automation, test strategies, test quality, structural test, functional test and JTAG based test.

Among the presenters, we find experts from Finland, Germany, Norway, Sweden, Belgium, Italy, UK and USA.

This year's Keynote speaker is Jaakko Ala-Paavola, Chief Technology Officer, Embedded systems & IoT, at Etteplan. He will speak about testing of IOT devices. The title of the keynote is "20 Billion Connected Devices, How to Test them All – or Not to Test at All?"

At the end of the first day, we will also have an interesting panel discussion on the topic: "Internet of Things (IoT) serving the test Community – and how do we test IoT?"

IoT is becoming ubiquitous in society and will gradually also penetrate the test community. How can we use IoT to our advantage in the test community, and how do we ensure IoT functionality to the quality levels we need?

The conference, the conference dinner and the mini exhibition offers a great opportunity for technical and business discussions.

On behalf of the committee, I wish to welcome you to TestForum 2017!

Yours sincerely

A handwritten signature in blue ink that reads 'Knut Båtstøløkken'.

Knut Båtstøløkken
Chairman of *Nordic Test Forum*

Key Note Speaker

Jaakko Ala-Paavola,
Chief Technology Officer, Embedded systems & IoT, Etteplan



Jaakko Ala-Paavola is the Chief Technology Officer of Etteplan, one of the biggest design houses in the Nordics. He has long-term professional experience in Embedded Systems R&D and active evangelist of IoT. His special focus is in IoT connectivity technologies, with hands on experiences with all the current and many of the emerging technologies. Jaakko has Master of Science degree, including electrical engineering, telecommunication and computer science studies, well suitable combo for IoT. In addition to 10+ years consulting for Industrial Internet, Jaakko has worked for Nokia in telecommunication networks and equipment development.

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 Båtstøløkken	Kitron AS, Norway (Chairman)
Birger Schneider	DELTA, Denmark (Treasurer)
Bjørn B Larsen	NTNU, Norway (Secretary)
Stig-Gunnar Jensen	Eltek 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	Associate member, USA

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 2017 Local Organizer

The local organizer is:

Mick Austin
JTAG Technologies
Vantaankoskintie 14,
01670 Vantaa
Finland

Phone: +358 (0)9 4730 2670
Mobile: +358 (0)505976549
E-mail: mick@jtag.com

Technical Program of TestForum 2017

Nordic Test Forum (NTF) Annual Assembly, November 27th 2017

The NTF organization holds an annual general assembly a day before the TestForum conference. This year it will be held on **November 27th at 20:00**. The agenda and motions will be dispatched to the members in a separate mailing.

Tuesday, November 28th, 2017

Time	Titles	Speakers or additional info
08:30-08:50	Registration	
08:50-09:00	Welcome / Introduction	Knut Båstoløkken
09:00-10:00	Key Note Session	<i>Chairman: Knut Båstoløkken</i>
09:00-10:00	20 Billion Connected Devices, How to Test them All – or Not to Test at All?	Jaakko Ala-Paavola, Etteplan
10:00-10:30	Exhibitor Forum: short presentations	<i>Chairman: Stig-Gunnar Jensen</i>
10:30-11:00	Coffee Break / Exhibition	
11:00-12:30	Session 1: Test Strategies 1	<i>Chairman: Mick Austin</i>
11:00-11:30	Could be the Flying Probe an alternative to the Board Tester System?	Lothar Diez, SPEA
11:30-12:00	In-Circuit test vs functional test	Hans Baka, DigitalTest
12:00-12:30	The Odds of Test and Measurement	Hans Manhaeve, Ridgetop Europe
12:30-13:30	Lunch	
13:30-15:00	Session 2: Test system design	<i>Chairman: Magnus Rönnqvist</i>
13:30-14:00	A short introduction to Lean concepts	Mikko Karjalainen, KaVo Kerr Group
14:00-14:30	Lean tools in production test development	Tomi Pietari, Vaisala
14:30-15:00	To Platform or Not to Platform - aspects of designing test systems	Mattias Ericsson, AddQ
15:00-15:30	Coffee Break / Exhibition	
15:30-16:30	Session 3: Test Strategies 2	<i>Chairman: Mauri Aalto</i>
15:30-16:00	Point Solutions or Plant-based MES and Beyond?	Ignace Braem, Siemens Industry Software
16:00-16:30	Are traditional SPC tools the right choice for finding quality issues in electronics manufacturing?	Tom Andres Lomsdalen, Virinco
16:30-17:00	News from conferences	<i>Chairman: Artur Jutman</i>
17:00-17:30	Fruit & Refreshments / Exhibition	
17:30-19:00	Panel debate "Internet of Things (IoT) serving the test Community – and how do we test IoT?"	<i>Panel moderator: Birger Schneider</i>
19:30	Dinner	

Wednesday, November 29th, 2017

Time	Titles	Speakers or additional info
09:00-10:30	Session 4: Fixturing & test interfaces	<i>Chairman: Raimedas Sodaitis</i>
09:00-09:30	Eliminating Cables from PXI ATE systems	Gary Clayton, MAC-Panel
09:30-10:00	Latest Mass Interconnect Solutions - i.e. High Speed, High Power, EMI solutions...	Werner S. Pinter Virginia Panel Corporation
10:00-10:30	Best practices in functional testing, Case study with SKS Automation Oy	Teppo Väliisaari, Etteplan
10:00-11:00	Coffee Break / Exhibition	
11:00-12:30	Session 5: Functional Test	<i>Chairman: Lars Kongsted-Jensen</i>
11:00-11:30	Box-builds in production testing and outlook for future	Jani Angervuo, Kone
11:30-12:00	Unified EoL test and programming over automotive bus	Jan Heiber, Göpel
12:00-12:30	Improving Testability During PCB Design	Mark Laing, Siemens (Valor)
12:30-13:30	Lunch	
13:30-15:00	Session 6: JTAG Based Test	<i>Chairman: Artur Jutman</i>
13:30-14:00	Eliminating or minimising Embedded Software Tests.	Mick Austin, JTAG Technologies / Jussi Mustola, Etteplan
14:00-14:30	SiliconInsight / IJTAG	Martin Keim, Mentor
14:30-15:00	Boundary Scan Design Review for Better Test Strategy	Thomas Götz, Keysight
15:00-15:10	Closing Session: TestForum concluding remarks	<i>Knut Båstoløkken Kitron</i>
15:10-15:30	Coffee Break / Exhibition	
15:30-17:00	Session : Extra Session	<i>Chairman: Mick Austin</i>
15:30-16:00	TR5001S2 Parallel Test	Tamás Szabó, Equip-Test
16:00-16:30	Electronic drivers for LEDs - why are many failing	Birger Schneider, Delta
16:30-17:00	Would Functional Tests Detect All Timing Issues On a Board?	R. Cantoro, E. Sanchez, M. Sonza Reorda, Politecnico di Torino, A. Jutman, Testonica Lab

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 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.

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 a USB memory stick. 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 hotel directly on their website <https://www.sokoshotels.fi/en/vantaa/sokos-hotel-flamingo> the room rate is paid directly by each participant to the hotel (i.e. not included in the seminar fee). **The room rate** is 154 EUR single room and 174 EUR double room per night, including breakfast.

When making the booking on the Sokos hotels website use the booking code **BNTF2017** to receive the preferred rate at the hotel.

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

The **registration deadline is Monday 13th, November, 2017**, in order **to guarantee hotel room. Registration after this date is also possible.** However, the special room rate will no longer be valid and we cannot guarantee that hotel rooms are available at the conference hotel.

Registration for TestForum 2017 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

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 |

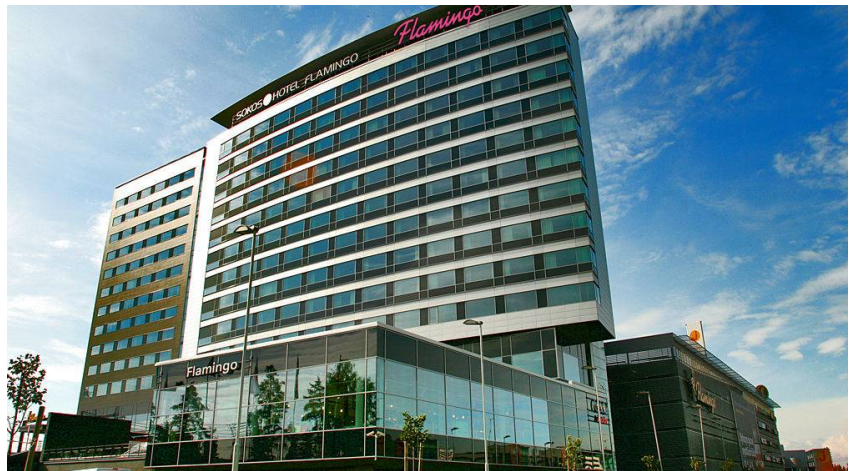
Break Sokos Hotel, Vantaa, Finland

TestForum 2017 will take place at Sokos-Hotel Flamingo, which is situated very close to the Helsinki-Vantaa international airport.

Details about the hotel is at: <https://www.sokoshotels.fi/en/vantaa/sokos-hotel-flamingo>

Hotel address

Tasatie 8
01510, Vantaa,
Finland



Getting to the hotel

From Helsinki Airport:

- Bus Stop – at the Airport bus terminal bus number 415, 615 or 617. Stop by the Jumbo shopping Centre.
- Taxi fare from Airport is about 13 - 15 Euro.
- 5 km, about 9 minutes by car.

By train

Fast trains from the north

The nearest mainline railway station is Tikkurila, located about 5 kilometres from Sokos Flamingo.

It is possible to transfer from here to local lines to Aviapolis or the airport and then take same bus as from the airport.

There is additionally a bus service from Tikkurila to Jumbo bus number 562

Trains from the West (Turku) railway station. The nearest mainline railway station is Pasila. Change here to either local train service to Aviapolis or use bus service to Jumbo.

Alternatively, you can use the free "Hotel Airport Bus shuttle" from the airport to the Holiday Inn hotel and walk a few hundred meters

