

SIX DAYS

THREE CONFERENCES

THREE FORUMS

ONE EXHIBITION

EUROPEAN MICROWAVE WEEK 2020
JAARBEURS CONVENTION CENTRE
UTRECHT - THE NETHERLANDS
10 - 15 JANUARY 2021



**EUROPEAN
MICROWAVE WEEK**
JAARBEURS UTRECHT
THE NETHERLANDS
10-15 JANUARY 2021
www.eumweek.com

EUROPEAN MICROWAVE WEEK 2020

CONFERENCE PROGRAMME

EUROPE'S PREMIER MICROWAVE,
RF, WIRELESS AND RADAR EVENT

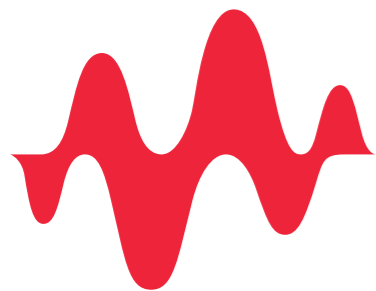
THE ART OF MICROWAVES



Register online at: www.eumweek.com

The European Microwave Week 2020 organisers would like to thank the following companies for their help and valued support throughout this year's event.

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Make ideas real



Welcome to the 23rd European Microwave Week

The Corona virus has swept across the globe. We have managed to move the European Microwave Week from September 2020 to January 2021, because we so much value that real-life, person-to-person interaction. Register and visit!

"Be part of the European Microwave Week, that will be remembered as the first big Microwave Conference after Corona."

Welcome! We are excited to host the European Microwave Week in The Netherlands, the country where it all started in 1998, when three conferences merged into the 'Microwave Week'. This turned out to be a strategic and very successful move: 22 years later this week has grown into the biggest event of its kind in Europe. To me, the week can be summarised in four words: Learn, meet, enjoy and explore!

Learn. This week represents the state-of-the-art in RF, microwaves and radar. Academia and industry present well over 400 scientific talks. Although this is more than any individual can absorb, it guarantees that – if you work in this field – you can pack your week with relevant insights and new developments. Short courses will get you up to speed for new topics, workshops will bring you all the new developments for those already working in the field. Exchange ideas with colleagues from academia and industry. Stay skilled in a world that is changing at an unprecedented rate.

"If you work in this field – you can pack your week with relevant insights and new developments."

Meet. This week is where the entire community meets. Meet, to interface with all the relevant industries at the largest microwave and radar tradeshow - this tradeshow alone is more than worth a visit! Stop by the EuMA booth and become a member. That is the first step to get involved in volunteering: Do so for a few years and suddenly realise that you actually know all the famous names in microwaves and radar. Meet, to learn before things even get published. Meet old friends to catch up, meet to make new friends that last a lifetime.

Enjoy. This week's venue maximally facilitates learning and meeting. Utrecht is a historic place that welcomes visitors warmly. Enjoy its canals, churches, modern and ancient art, and over 3000 years of history. Enjoy its famous music scene, century-old restaurants, bars and nightlife. Enjoy the Railway museum where we will host a splendid dinner amidst historic trains. Enjoy the pub crawl and dancing festivities organised by us for you in the heart of the city. Both the conference venue and city centre are within five minutes walking from the railway station, so be prepared to combine work and fun!

"With over 400 scientific papers, around 30 workshops and 10 short courses this will more than satisfy your scientific thirst."

EuMIC, EuMC, EuRAD. The European Microwave Integrated Circuits Conference, the European Microwave Conference and the European Radar Conference together form the scientific heart of the Microwave Week. Keynote speakers from around the globe to inspire our audience, semiconductors that literally work up to a THz, dedicated sessions on Teaching Microwave Engineering, a Focus Day on (Active) Array Antennas, there is just too much to name it all here. Female talent can meet their peers and get together during the Women-in-Microwaves event. EuMC, the oldest of the conferences involved, will be celebrating its 50th anniversary, which is the reason for the golden crown over this year's logo.

"We invite you to immerse yourself in the culture, art and history of Utrecht."

Explore! Browse through this mini-programme to learn about the student activities (including a drone-detecting challenge: build a team, receive hardware and demonstrate your performance on-site), the different fora (the Defence, Security and Space Forum on Space Situational Awareness, the Automotive Forum, this year particularly on waveforms and AI in automotive radar, and the new 5G Forum that bridges the gap between business and technology), a workshop on Quantum Computing for Electronic Engineers, and there is something on 5G at virtually every time-slot. This week is so packed with science and fun, that you'll regret going home when the week is over!



FRANK VAN VLIET
General Chair



ALEXANDER YAROVOY
General TPC Chair

The City of Utrecht

The city of Utrecht, with its combination of storied past and dynamic present, is a truly unique place. This 2000-year-old city teems with a wide range of interesting museums and other cultural institutions, their programmes full of theatre, dance, art and more. When you stroll through the quaint streets and along the canals in the Utrecht Museum Quarter, taking in the pleasant, intimate atmosphere for which Utrecht is famous, you'll understand. Utrecht also offers various options to discover more than just the city. An interesting fact: Utrecht is both the name of the city and the surrounding province. In the province of Utrecht you can get off the beaten track and combine its nature, tranquillity and beautiful old buildings with all the advantages of a dynamic metropolis.

Career Platform

Tuesday, 12th January to Thursday, 14th January 2021

Our motto is to help the community bring the jobs and career opportunities to students and young professionals, all in a single place and time, in order to make our field more attractive to young talents and more productive for companies.

The Career Platform is a three-day event that is conducted with the support of EuMW, EuMA and the IEEE MTT-S / Region 8 Young Professionals. The Career Platform is dedicated to students, graduates, and young professionals where they can get in touch with companies to increase their network and inform themselves about current job offers. This unique place provides multiple activities like career work-

shops, recruitment space, a start-up panel, and special sessions to boost the career of the next generation of microwave/millimetre-wave, radar, wireless, and integrated circuits engineers. All these activities are centred around the Career Lounge, a cosy area with comfortable seats and refreshments, where contacts to companies can be made in an informal fashion. During the conference, all this will be supported by social media (Facebook, LinkedIn, Xing, etc.) as well as the European RF and Microwave job portal www.rf-and-microwave-jobs-in-europe.eu, which is the virtual marketplace for students and companies to meet at and in-between European Microwave Weeks. Connect with us on social media for more:

WHAT'S IN IT FOR YOU?

- Start-up Panel: Get ready to start your own company
- Job Wall: Spot vacancies instantly
- Career Workshop: Boost your CV and receive tips for your résumé
- Job Dating: Meet (your?) future employer in 20 minutes
- CP Lounge: Meet recruiters and colleagues with a cup of coffee

For details on the programme and speakers, visit www.eumweek.com/docs/Career_platform.html



Promoting Student Development

Tom Brazil Doctoral School of Microwaves "The Route to 5G: Design of mmWave Active Array Systems, from RFIC to Signal Processing"

Thursday, 14th January 2021

Every year, the European Microwave Week features the Doctoral School of Microwaves, which is a one-day workshop. In memory of Tom Brazil, who was one of the founders of this event, it has now been renamed "Tom Brazil Doctoral School of Microwaves". Its objective is to cover the needs of a Ph.D. student that go beyond the normal conference program. This year's Doctoral School will have lectures on technical topics, as well as on boosting your soft skills, by experts from both academia and industry. The overall theme of the technical topics is 5G mmWave with a focus on the design of integrated active array systems, covering the fields all the way from RFIC to signal processing.

For details on the programme, visit www.eumweek.com/students/doctorschool.html

5th European Microwave Student School "Practical Workshop: Build a Frequency-Modulated Continuous Wave Radar in 1-day"

Tuesday, 12th January 2021

During the EuMW 2020 we will celebrate the fifth edition of the European Microwave Student School. In this workshop you will learn the theory and design of FMCW radar. With this theoretical foundation, you will design, simulate and fabricate by hand, each component of your radar. You will then work in a team to assemble a complete radar and test it before the end of the class. The only background you need is basic microwave engineering knowledge and a desire to learn and build with your hands!

This workshop is sponsored by Thales Nederland B.V.

For further information, visit www.eumweek.com/students/student_school.html

Student Design Competitions

Tuesday, 12th January to Wednesday, 13th January 2021

The Student Design Competitions involve master and doctoral students designing and measuring a microwave device developed prior to the conference. This competition is open to all students. Measurements will be open to attend for all EuMW participants. A representative of the design team must be present at the conference. This year, two competitions will be offered:

Thrust 1: Drone Localisation System

Design a drone localisation system operating from 0.5 GHz to 1.5 GHz. The system should be able to determine the position of drones by detecting the radio frequency interference transmitted by the drones. This thrust is organised and sponsored by ASTRON. Prizes are co-sponsored by the IEEE Benelux AP/MTT joint chapter. For questions please contact David Prinsloo (prinsloo@astron.nl).

For more information and additional competition details visit www.bit.ly/eumw2020sdc.

Thrust 2: Wideband Amplifier Biasing Network

Design and realise a biasing network for RF high power amplifiers, considering low insertion loss at the operation bandwidth and low input impedance at the low frequency region. This thrust is organised and sponsored by Ampleon Netherlands BV. For questions please contact Adam Cooman (adam.cooman@ampleon.com).

For more information visit www.ampleon.com/news/events/student-design-competition-at-eumw-2020.html.

For further information, visit www.eumweek.com/students/student_design_competition.html

The Defence, Security & Space Forum Space Situational Awareness

Wednesday, 13th January 2021, 08:30 to 17:50
+ cocktail reception



Chair: Marco Martorella, University of Pisa, Italy

Co-Chair: Mark Bentum, Eindhoven University of Technology & ASTRON, The Netherlands

Space has become a new battleground where both economic and military interests clash. Space Situational Awareness (SSA) refers to keeping track of objects in orbit and predicting where they will be at any given time, in other words: determine a persistent and continuously updated picture of the situation in space. According to NATO's definition, SSA is the knowledge and the understanding of military and non-military events, activities, circumstances and conditions within and associated with the space environment or space-related systems.

To accomplish this, a complex infrastructure must be in place that includes sensors, communications systems, physical phenomena knowledge, technical and management skills that allow for all the necessary systems to operate and interact effectively.

The Defence, Security and Space Forum will address the topic of Space Situational Awareness. When thinking of Space and SSA, we tend to ask ourselves many questions that are related to our ability to understand and handle space, for instance: What have we learnt in the past years of SSA activities? How is the "New Space Era" affecting space and its safety? Are our SSA systems keeping up the pace of the new developments in space? Are we prepared to face what the future may hold?

World-wide renowned experts will present and discuss various SSA-related topics, ranging from space surveillance, challenges and threats in space, to space weather, providing some answers to the above questions and with the aim of triggering valuable discussions where SSA will be the primary focus. Technological aspects will be considered that

Registration and Programme Updates

Registration fee is € 20,- for those who registered for a conference and € 60,- for those not registered for a conference. The Conference Special Events section of the EuMW website will give further details and updates.

are impacting both military and civilian scenarios. Well-known and new threats will also be discussed in order to understand the risks that space induces.

The Automotive Forum Automotive Radar

Tuesday 12th January 2021, 08:30 to 17:50
+ dinner on Monday evening, 11th January 2021



Chair: Thomas Zwick, Karlsruhe Institute of Technology, Germany

Co-Chairs: Martin Kunert, Robert Bosch GmbH & Frank Gruson, Continental AG, Germany

Local Arrangements Chair: Cicero Vaucher, NXP, The Netherlands

Following applications like keyless entry and tire pressure monitoring systems, mobile communications and recently automotive radar made microwave technologies a strong pillar inside the automotive world. The first 77 GHz automotive radar sensors entered the European market in 1999. In 2019, the European Microwave Association (EuMA) for the first time organized the Automotive Forum to provide an open platform for industrial experts to discuss technical aspects, concepts and radar architectures as well as market issues in the area of microwaves in the automotive industry. The forum consists of a good mix of technical presentations, plenary and panel discussions as well as networking time. This year's event will

focus on the following topics:

1. Modulation & operation principles
2. Radar architectures
3. Artificial intelligence in automotive radar
4. Automotive radar interference

The forum is mainly devoted to technical experts from automotive industry throughout the whole supply chain. Keynote speakers will present their views on special technical solutions as well as regulatory or strategic issues. The evening before the event, we will get together in a networking dinner.

Early registration is recommended.

Registration and Programme Updates

Please refer to the special forums and session fees table for registration fees. The networking dinner, lunch and beverages are included in the fee. The Conference Special Events section of the EuMW website will give further details and updates.

Conference Highlights The week is packed with everything Microwave and Radar!

3 CONFERENCES

EuMIC
Europe's premium event on IC design at RF frequencies and above

EuMC
Europe's premium event on anything microwave

EuRAD
Europe's premium event on radar, all the way from systems down to signal processing

3 FORUMS

5G Forum
Everything new on 5G, complementing the week's 5G science and workshops

Automotive Forum
Continuing last year's massive success

DSS Forum
The executive forum on Defence, Security and Space, this year's theme: "Space Situational Awareness"

& NOT TO MISS

- Focus day on Array Antennas: a whole day on arrays for defence, space and radio astronomy
- Full day on Quantum Computing for Electrical Engineers
- Around 30 workshops and 10 short courses, including one on microwave laboratory practices
- A coherent student programme including job dating, CV polishing and Business Plan writing
- Technology in Context: A series of philosophical lectures on the relation between technology and society
- Railway museum: A splendid dinner at the fantastic railway museum

The 5G Forum From Technology to Business

Friday, 15th January 2021, 08:45 to 15:45



Chair: Bart Smolders, Eindhoven University of Technology, The Netherlands

Co-Chairs: Toon Norp, TNO, The Netherlands & Ulf Gustavsson, Ericsson, Sweden

The introduction of 5G is a major trend in cellular telecommunications; in various countries 5G frequency licenses are being awarded and 5G networks are rolled out. 5G promises to support a range of new applications - automotive, public safety, media, health, satellite communication, and factory automation to name a few - are supported using the same NR radio interface technology. The concept of 5G network slicing enables a single 5G network infrastructure to provide multiple virtual networks, each optimised for a particular application, service or industrial customer. In Europe, there are three pioneer frequency bands earmarked for 5G. Two of these - the 700 MHz band and the 3.5 GHz band - are in the same

sub 6 GHz range of spectrum where most current cellular technologies can be found. The third pioneer band is the 26 GHz band; a new frequency band which will introduce microwave technology in cellular networks. For the microwave industry, 5G will be a major new market opportunity. The 2020 5G Forum hosts a mix of technical presentations, posters, demo sessions and a panel discussion. Technical presentations from industrial experts will address 5G strategic and market needs and discuss how these can be met with technology solutions. Poster and demo sessions during lunch allow research projects to show their advances with new 5G technology and provides an excellent networking opportunity.

Registration and Programme Updates

Please refer to the special forums and session fees table for registration fees. Lunch and beverages are included in the fee. The Conference Special Events section of the EuMW website will give further details and updates.

Workshops and Short Courses

Despite the organiser's best efforts to ensure the availability of all listed workshops and short courses, the list below may be subject to change.

Also workshop numbering is subject to change. Please refer to www.eumweek.com at the time of registration for final workshop availability and numbering.

SUNDAY 10 th January 2021			
WS-01	EuMIC	Full Day	High Performance GaN MMICs
WS-02	EuMIC/EuMC	Full Day	Advanced RF Technologies for 5G
WS-04	EuMC	Full Day	Recent Advances in Additive Manufacturing of Microwave Components
WS-05	EuMIC	Full Day	Integrated Doherty PAs for Cellular and mmWave Applications
WS-07	EuMIC	Full Day	Sub-mmWave On-Wafer Measurements
WS-08	EuMIC	Half Day PM	mmWave Phased Array Front-End ICs for 5G
WS-09	EuMIC/EuMC	Half Day PM	Advanced Measurement Techniques for Next Generation Communication Systems
SS-01	EuMIC	Full Day	Fundamentals of Microwave PA Design
MONDAY 11 th January 2021			
WM-01	EuMC	Full Day	Microwave Wearable Circuits and Systems for Biomedical Applications
WM-02	EuMC/EuRAD	Half Day AM	Advanced Applications of In-Band Full-Duplex Technology
WM-03	EuMC	Full Day	Antenna/Modules in Package for mmWave for 5G
WM-04	EuMC	Full Day	High-Power Microwave Industrial Applications
WM-05	EuMC	Full Day	Measurements at mmWave and Terahertz Frequencies of Three Measurement Quantities: S-Parameters, Power, and Complex Permittivity of Dielectric Materials
WM-06	EuMIC/EuMC	Half Day PM	From Enabling GaN Technology to High-Performing Space-Borne SSPAs at mmWave
SM-01	EuMIC/EuMC	Half Day AM	From Device Characterisation to Amplifier Design: Advanced Large Signal Measuring, Fast and Accurate Modelling, and Reliable Designing
SM-02	EuMC/EuRAD	Half Day PM	Multibeam Antennas and Beamforming Networks
SM-03	EuMC	Half Day PM	Intuitive Microwave Filter Design with EM Simulation
TUESDAY 12 th January 2021			
WTu-01	EuMC	Full Day	Digital Predistortion for 5G MIMO Wireless Transmitters
WTu-02	EuMC/EuRAD	Half Day PM	Advanced mmWave Radar System Solutions for Industrial and Consumer Sensing Applications
WEDNESDAY 13 th January 2021			
WW-02	EuMIC/EuMC	Full Day	High-Efficiency Linear Power Amplifiers for High Bandwidth, High PAR Signals
WW-03	EuRAD	Half Day PM	Automotive Radar Networks and Sensor Fusion
SW-01	EuMIC/EuMC	Half Day AM	High Power Amplification for Space Applications
SW-02	EuMIC/EuMC	Full Day	Quantum Computing for Electrical Engineers
THURSDAY 14 th January 2021			
WTh-01	EuRAD	Half Day AM	High Resolution Radar for Automotive
WTh-02	EuMC	Full Day	5G and Beyond: Enabling RF Architectures and Technologies for Emerging Wireless Systems
WTh-03	EuRAD	Half Day PM	Recent Advances in Micro-Doppler Radar and its Applications
FRIDAY 15 th January 2021			
WF-01	EuMC	Half Day AM	Wireless Power Transmission Recent Research Advances
WF-02	EuMC	Half Day AM	Recent Advances in Topologies, Technologies and Practical Realizations of Microwave Sensors
WF-03	EuMC	Half Day AM	Recent Advances on Microwave Filters
WF-04	EuMC	Full Day	Practical Aspects of Running a Microwave Laboratory and How to Make Good Measurements Every Time
SF-01	EuRAD	Half Day AM	Cognitive Radar Signal Processing
SF-02	EuRAD	Half Day PM	Introduction to MIMO Radar

Registration Information

CONFERENCE REGISTRATION DETAILS

See pricing table on the following page.

ONLINE REGISTRATION

- All online registrations should be made at www.eumweek.com.
- Registrations completed up to and including 6th December 2020 will be charged at the 'Advance Discounted Rate' and those from 7th December 2020 will be charged at the 'Standard Rate'.
- Online registration is open from 13th September 2020 up to and during the event until 15th January 2021.

ONSITE REGISTRATION

Onsite registration is available:

- | | |
|--|---------------|
| ▪ Saturday, 9 th January 2021 | 16:00 - 19:00 |
| ▪ Sunday, 10 th January 2021 | 08:00 - 17:00 |
| ▪ Monday, 11 th January 2021 | 08:00 - 17:00 |
| ▪ Tuesday, 12 th January 2021 | 08:00 - 17:00 |
| ▪ Wednesday, 13 th January 2021 | 08:00 - 17:00 |
| ▪ Thursday, 14 th January 2021 | 08:00 - 17:00 |
| ▪ Friday, 15 th January 2021 | 08:00 - 10:00 |

Onsite registration will be charged at the Standard Rates.

HOW TO REGISTER

If you have any questions regarding registration procedures and payment, please contact: eumwreg@aventri.com

ONLINE

- Delegates can register for one, two or all three of the conferences.
- Discounts will be given to those registering for two or more conferences.
- In addition to the conferences, delegates can register for forums, short courses or workshops.
- Discount is given when combining a forum, short course or workshop registration with a conference registration.
- Payment can be made online using Amex, Visa, Mastercard or Bank Transfer.
- Registrants paying by Credit Card will be sent an automatic email confirmation, with a receipt and badge barcode.
- Registrants choosing to pay by Bank Transfer will receive their confirmation, but their receipt and badge barcode will be sent only once payment has been received and cleared by Horizon House.

ONSITE

- The registration area will be located through the 'Oost En-tree' and to the right, towards Exhibition Hall 1.
- There will be Self Service terminals in the registration area where delegates can enter their details and pay immediately by swiping their credit cards through the readers attached to the terminals.
- Delegates can also choose to 'Pay at Cashier' and then proceed to the Cashier Point and pay using credit cards or cash. Receipts will be given accordingly.

BADGE AND DELEGATE BAG COLLECTION

Online registrants: bring a photo ID and a copy of your registration email badge barcode to the Fast Track check-in desks at the registration area.

Onsite registrants: register using our Self Service terminals and receive your printed badge upon payment.

Scan your badge at the specified delegate bag area to collect your delegate bag.

Registration and badge collection will be quick and easy but queues may form at busy times, so please arrange to collect your badge well in advance of your first conference session.

NL MoD Reduced Rate

For the EuMW 2020 only, personnel of the NL MoD can register at a reduced rate. This very attractive rate includes access to EuRAD, the DSS Forum and the exhibition, lunch boxes on Wednesday and Thursday and the seated EuRAD lunch. The Advance Discounted rate for this is € 100,- (up to and including 6th December 2020), and € 140,- from 7th December 2020 onwards. No further options or combined discounts will be available.

Registration Fees

Full Week ticket: Get the most out of this year's Microwave Week with a Full Week ticket. Combine all three conferences with access to the Defence, Security and Space and the 5G forum (the Automotive forum is not included), and top your week off with Workshops or Short Courses of your choosing. To keep you fueled, lunch is included everyday, as are of course the social events: the EuMIC Get-Together, the Welcome reception and the EuRAD seated lunch.

Registration at one conference does not allow access to the sessions of the other conferences.

Reduced rates are offered if you have society membership to any of the following: EuMA[®], GAAS, IET or IEEE. Reduced rates for the conferences are also offered if you are a Student/Senior (Full-time students 30 years or younger and Seniors 65 or older as of 18th September 2020). The fees shown below are invoiced in the name and on behalf of the European Microwave Association. Fees invoiced by EuMA with respect to the European Microwave Week 2020 are exempt from Dutch VAT. All payments must be in € (Euros) - cards will be debited in € (Euros).

CONFERENCES REGISTRATION	ADVANCE DISCOUNTED RATE (FROM 13 th SEPTEMBER UP TO & INCLUDING 6 th DECEMBER 2020)				STANDARD RATE (FROM 7 th DECEMBER 2020 & ONSITE)			
	Society Member [⊕]		Non-Member		Society Member [⊕]		Non-Member	
1 Conference	Standard	Student/Sr.	Standard	Student/Sr.	Standard	Student/Sr.	Standard	Student/Sr.
EuMC	€ 480,-	€ 130,-	€ 680,-	€ 190,-	€ 680,-	€ 190,-	€ 950,-	€ 260,-
EuMIC	€ 370,-	€ 120,-	€ 520,-	€ 170,-	€ 520,-	€ 170,-	€ 730,-	€ 240,-
EuRAD	€ 330,-	€ 110,-	€ 460,-	€ 160,-	€ 460,-	€ 160,-	€ 650,-	€ 220,-
2 Conferences	Standard	Student/Sr.	Standard	Student/Sr.	Standard	Student/Sr.	Standard	Student/Sr.
EuMC + EuMIC	€ 680,-	€ 260,-	€ 960,-	€ 360,-	€ 960,-	€ 360,-	€ 1.340,-	€ 500,-
EuMC + EuRAD	€ 650,-	€ 250,-	€ 910,-	€ 350,-	€ 910,-	€ 350,-	€ 1.280,-	€ 480,-
EuMIC + EuRAD	€ 560,-	€ 240,-	€ 780,-	€ 330,-	€ 780,-	€ 330,-	€ 1.100,-	€ 460,-
3 Conferences	Standard	Student/Sr.	Standard	Student/Sr.	Standard	Student/Sr.	Standard	Student/Sr.
EuMC + EuMIC + EuRAD	€ 830,-	€ 370,-	€ 1.160,-	€ 520,-	€ 1.160,-	€ 520,-	€ 1.630,-	€ 730,-
Full Week Ticket	€ 1.280,-	€ 750,-	€ 1.690,-	€ 970,-	€ 1.630,-	€ 920,-	€ 2.180,-	€ 1.200,-

BECOME A MEMBER – NOW! EuMA membership fees: Professional € 25,-/year, Student € 15,-/year.

One can apply for EuMA membership by ticking the appropriate box during registration for EuMW. Membership is valid for one year, starting when the subscription is completed. The discount for the EuMW fees applies immediately.

Members have full e-access to the International Journal of Microwave and Wireless Technologies. The printed version of the journal is no longer available.

EUMA KNOWLEDGE CENTRE
The EuMA website has its Knowledge Centre which presently contains over 20,000 papers published under the EuMA umbrella. Full texts are available to EuMA members only, who can make as many copies as they wish, at no extra-cost.

SPECIAL FORUMS AND SESSIONS REGISTRATION	Date	ADVANCED DISCOUNTED RATE (UP TO & INCLUDING 6 th DECEMBER 2020)		STANDARD RATE (FROM 7 th DECEMBER 2020 & ONSITE)	
		Delegates*	All Others**	Delegates*	All Others**
Automotive Forum	12 th January 2021	€ 260,-	€ 360,-	€ 320,-	€ 420,-
5G Forum	15 th January 2021	€ 60,-	€ 90,-	€ 80,-	€ 100,-
Defence, Security & Space Forum	13 th January 2021	€ 20,-	€ 60,-	€ 20,-	€ 60,-
European Microwave Student School	12 th January 2021	€ 40,-	€ 40,-	€ 40,-	€ 40,-
Tom Brazil Doctoral School of Microwaves	14 th January 2021	€ 40,-	€ 40,-	€ 40,-	€ 40,-

* those registered for EuMC, EuMIC or EuRAD ** those not registered for a conference

WORKSHOPS AND SHORT COURSES	IN COMBINATION WITH CONFERENCE REGISTRATION				WITHOUT CONFERENCE REGISTRATION			
	Society Member [⊕]		Non-Member		Society Member [⊕]		Non-Member	
	Standard	Student/Sr.	Standard	Student/Sr.	Standard	Student/Sr.	Standard	Student/Sr.
Half Day	€ 100,-	€ 70,-	€ 130,-	€ 100,-	€ 130,-	€ 100,-	€ 170,-	€ 130,-
Full Day	€ 140,-	€ 100,-	€ 190,-	€ 140,-	€ 190,-	€ 140,-	€ 250,-	€ 190,-

CONFERENCE TECHNICAL CO-SPONSORS



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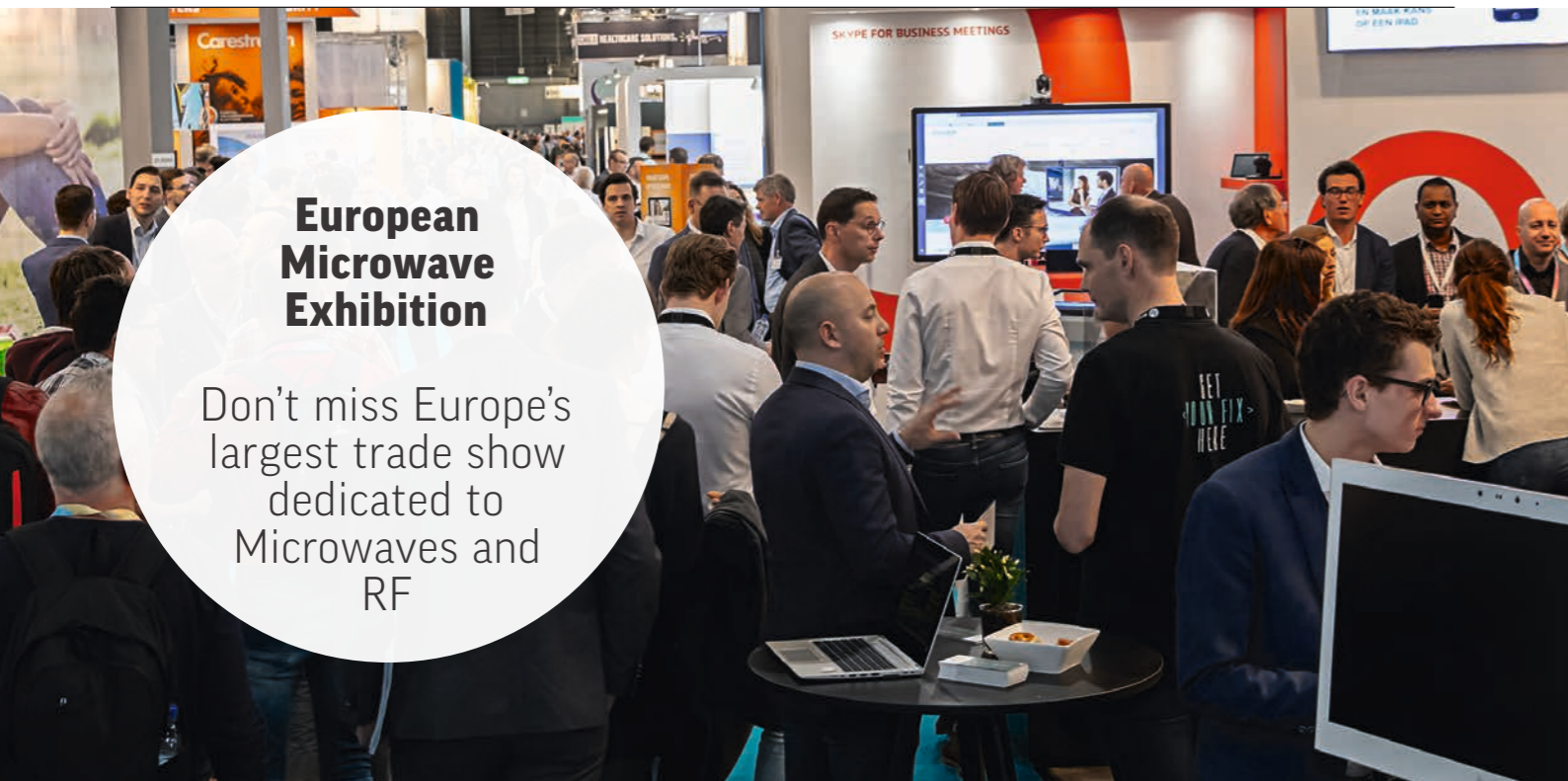


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European Microwave Exhibition

Don't miss Europe's largest trade show dedicated to Microwaves and RF

THE EUROPEAN MICROWAVE EXHIBITION (12TH - 14TH JANUARY 2021)

Registration grants you access to the European Microwave Exhibition. With over 300 international exhibitors (incl. Asia and US), this is Europe's largest trade show dedicated to microwaves and RF.

The European Microwave Exhibition provides delegates with an unrivaled opportunity for face-to-face interaction with those developing the future of microwave technology. Make use of this opportunity to view state-of-the-art exhibitor demonstrations, attend the annual EuMW Microwave Application Seminars (MicroApps), or register for one of the industrial workshops hosted by Rohde & Schwarz, MathWorks, Keysight and IHP Microelectronics.

Interested exhibitors: don't miss this opportunity to promote your company to a global audience. For more information, visit: www.eumweek.com/exhibition/exhibition_overview.html.

LOCATION AND ACCOMMODATION

The 2020 European Microwave Week is held at The Jaarbeurs Convention Centre:

Jaarbeursplein
3521 AL Utrecht
The Netherlands

We have teamed up with Connex Hotels and Events, our official hotel booking supplier, to offer you the ability to book your accommodation for the EuMW at the most competitive rates available.

For more information on the Jaarbeurs, visit: www.jaarbeurs.nl. More information on accommodation can be found at: www.connexhotelsandevents.com/eumw-2020-utrecht.html.

SOCIAL EVENTS

Keeping to the tradition of the European Microwave Week, the welcome reception and conference dinner - sponsored by Keysight - will be held on Tuesday, 12th January 2021.

To ensure the critical networking element of the conference is maintained, the organisers are re-evaluating the entire social calendar for the Week.

DELEGATE LUNCHBOXES AND COFFEE BREAKS

The EuMW offers subsidised lunchboxes to conference delegates, WS/SC, Tom Brazil doctoral school of microwaves, Student School, WiM and student design competition attendees at the reduced cost of € 7,- per lunchbox (one per day). In order to guarantee availability, it is required to order the lunchboxes at the time of registration. For more information, visit www.eumweek.com.

Upon presentation of their badge, conference delegates will be served free coffee during the coffee breaks. There will be two coffee breaks per day, except on Friday where only one coffee break will be held in the morning.

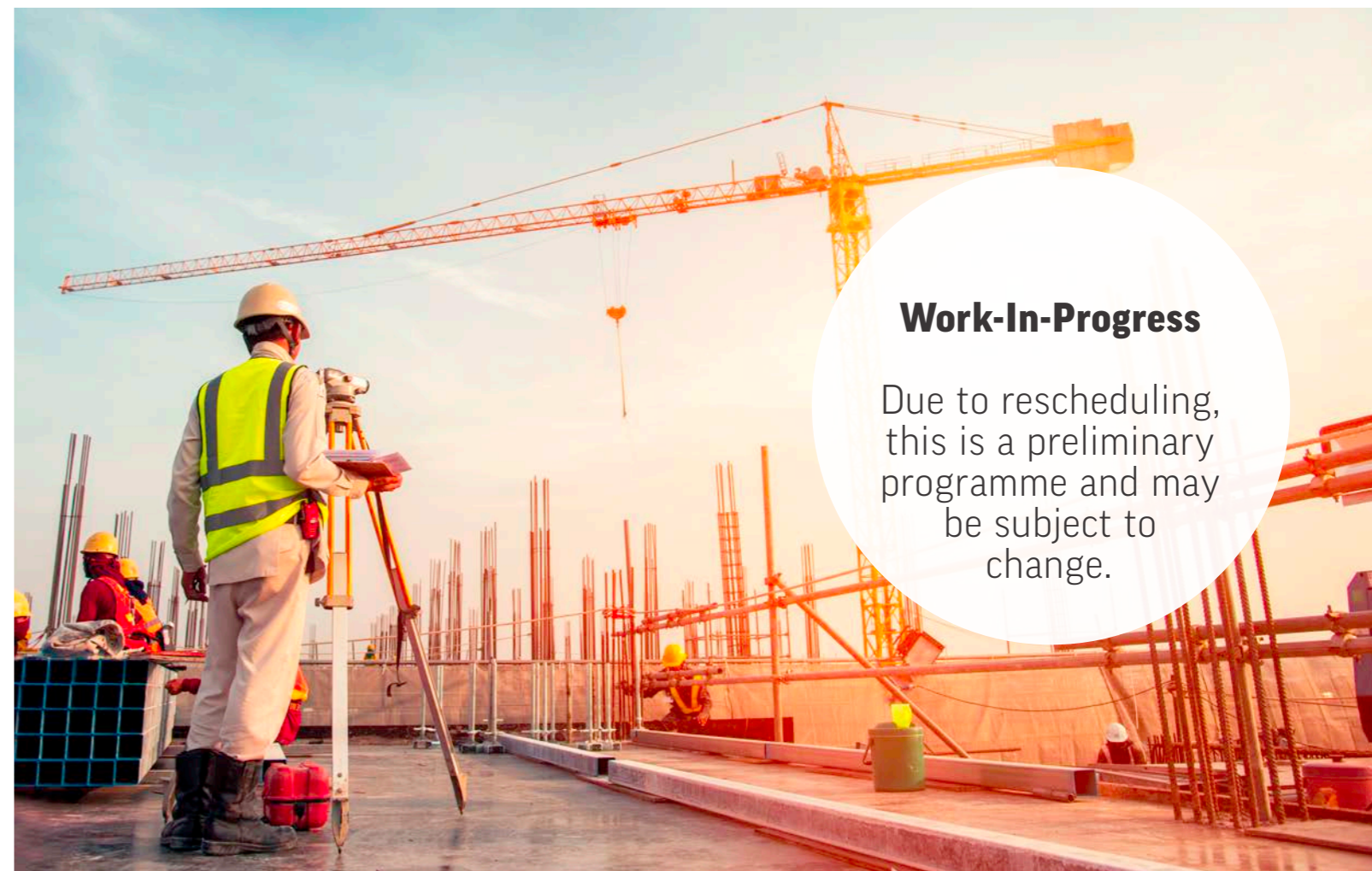
DOWNLOADABLE PROCEEDINGS

This year the conference proceedings will be available as a downloadable file and not on a USB stick. Papers published for presentation at the three conferences will be available as a downloadable file. Four weeks prior to the event, downloading instructions will be communicated to conference registrants.

SUNDAY

Room	08:30 - 10:10	10:50 - 12:30	13:50 - 15:30	16:10 - 17:50	EVENING PROGRAMME
Mission 1		WS-01 High Performance GaN MMICs			
Mission 2		WS-02 Advanced RF Technologies for 5G			
Expedition		WS-04 Recent Advances in Additive Manufacturing of Microwave Components			
Auditorium		SS-01 Fundamentals of Microwave PA Design			
Spark		WS-05 Integrated Doherty PAs for Cellular and mmWave Applications			
Glow			WS-08 mmWave Phased Array Front-End ICs for 5G		
Beam			WS-09 Advanced Measurement Techniques for Next Generation Communication Systems		
Fluor		WS-07 Sub-mmWave On-Wafer Measurements			

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Work-In-Progress

Due to rescheduling, this is a preliminary programme and may be subject to change.

MONDAY

Room	08:30 - 10:10	10:50 - 12:30	13:50 - 15:30	16:10 - 17:50	EVENING PROGRAMME
Mission 1	EuMIC02 D-Band to H-Band Amplifiers		EuMIC05 ICs for mmWave Beamforming Systems	EuMIC08 ICs for Communication and Sensing	
Mission 2	EuMIC03 GaN MMIC Power Amplifiers		EuMIC06 Advances in mmWave and High Power Technologies	EuMIC09 Advanced Solutions for Integrated Power Amplifiers	
Quest	EuMIC04 Receivers and LNAs		EuMIC07 Oscillators and Switches	EuMIC10 Nonlinear Modelling	
Expedition	WM-01 Microwave Wearable Circuits and Systems for Biomedical Applications				
Polar		EuMIC01 EuMIC Opening			
Auditorium	WM-02 Advanced Applications of In-Band Full-Duplex Technology		Technology in Context Philosophical Lecture	SM-02 Multibeam Antennas and Beamforming Networks	
Spark			WM-06 From Enabling GaN Technology to High-Performing Space-Borne SSPAs at mmWave		
Flash	SM-01 From Device Characterisation to Amplifier Design: Advanced Large Signal Measuring, Fast and Accurate Modelling, and Reliable Designing		SM-03 Intuitive Microwave Filter Design with EM Simulation		
Glow	WM-03 Antenna/Modules in Package for mmWave for 5G				
Beam	WM-04 High-Power Microwave Industrial Applications				
Fluor	WM-05 Measurements at mmWave and Terahertz Frequencies of Three Measurement Quantities: S-Parameters, Power, and Complex Permittivity of Dielectric Materials				
Off-site					Automotive Forum Networking Dinner 18:30 - 22:00
Off-site					EuMIC Get-Together 18.30 - 21.00

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TUESDAY

Room	08:30 - 10:10	10:50 - 12:30	13:50 - 15:30	16:10 - 17:50	EVENING PROGRAMME
Mission 1	EuMIC11 Transceiver and Transmitter ICs		EuMIC13 Foundry Panel	EuMC07 Wireless Communication Systems	EuMC14 Microwave and mmWave Systems
Mission 2	EuMC01 Power Amplifiers for Sub 6 GHz Application			EuMC08 Power Amplifiers Based on III-V & CMOS Technologies for 5G	EuMC15 Doherty and Load Modulated Power Amplifier Structures
Quest	EuMIC/EuMC01 Silicon Integrated Sub-mmWave Circuits			EuMC09 Terahertz Electronic Devices	EuMC16 Terahertz Photonic Devices and System
Expedition	EuMIC12 Design and Characterisation Techniques			EuMC10 MIMO and 5G Antennas	EuMC17 Phased and Transmit Arrays
Polar			EuMIC14 1-Minute Poster Pitch (13:50 - 14:10)		EuMIC16 EuMIC Closing Session
Auditorium	Automotive Forum Automotive Radar: Waveforms, Architectures, AI and Interference		Technology in Context Philosophical Lecture	Automotive Forum Automotive Radar: Waveforms, Architectures, AI and Interference	
Spark	EuMC02 Array Antennas			EuMC11 Waveguide and Horn Antennas	EuMC18 5G Antenna Systems
Flash	EuMC03 Advanced Packaging Components and Techniques			EuMC12 Advanced Packaging Solutions for mmWave Applications	EuMC19 3D-Printing Technologies
Glow	EuMC04 Theoretical and Computational Electromagnetics			EuMC13 Numerical Methods in Microwave Technology	EuMC20 Modelling of Field Radiation and Scattering
Beam	Student School Build Your Own Radar: Instruction			WTu-02 Advanced mmWave Radar System Solutions for Industrial and Consumer Sensing Applications	
Media arena	EuMC05 1-Minute Poster Pitch (09:40 - 10:10)		Women in Microwaves Lunch Lecture	Career Platform How to Stand Out in a Job Application	Teaching Microwaves Increase Your Microwave Lecturing Skills
Round control		Career Platform Career Lounge: Meet Jobs, Build Careers			
Transitzone B			Automotive Forum Lunch		
Transitzone C		Student School Build Your Own Radar: Hands-On Experience			
loopbrug		Career Platform Company Wall and Job Wall			
Beatrix		Opening of the European Microwave Week EuMC/EuMW Opening			
Juliana 1	WTu-01 Digital Predistortion for 5G MIMO Wireless Transmitters				
Hall 1		EuMC06 Interactive Poster Session	EuMIC15 Interactive Poster Session		
Hall 1	Student Design Competition Detect a Drone / Build (a part of) an Amplifier				
Off-site			Women in Microwaves Utrecht City Tour		EuMW Welcome Reception 18.30 - 22.00

WEDNESDAY

Room	08:30 - 10:10	10:50 - 12:30	13:50 - 15:30	16:10 - 17:50	EVENING PROGRAMME
Progress			WW-03 Automotive Radar Networks and Sensor Fusion		
Mission 1		EuRAD02 Dual Use & Waveform Design	EuRAD04 Doppler Processing Techniques for Low Reflectivity Targets	EuRAD06 Emerging & Industrial Applications	
Mission 2	EuMC21 Special Antenna Systems	EuMC27 [Focussed Session] Emerging Microwave Technology: Asia-Pacific	EuMC33 Advances on RF Power Amplifier Behavioural Modelling	EuMC39 Solid State High Power Amplifiers for Satellite and Radar Applications	
Quest		EuRAD03 Design and Calibration Concepts for Advanced Radar Systems	EuRAD05 Radar Circuits and Systems	EuRAD07 Radar Scenario Simulations	
Expedition	EuMC22 Novel Circuits Solutions for Energy Transfer in the Near-Field and Far-Field	EuMC28 Novel Wireless Power Transfer and Energy Harvesting Systems	EuMC34 Recent Advances in RFID and IoT Sensors	EuMC40 [Focussed Session] Emerging Antenna Technologies for RFID	
Polar	EuRAD01 EuRAD Opening Session				
Auditorium	EuMC23 [Focussed Session] Innovative Antennas for Cubesat Platforms	DSS Forum Space Situational Awareness	DSS Forum Strategy Analytics Lunch	DSS Forum Space Situational Awareness	DSS Forum Cocktail Reception
Spark	SW-01 High Power Amplification for Space Applications		EuMC35 Integrated Antennas	EuMC41 SATCOM and mmWave Antennas	
Flash	EuMC24 Additive Manufacturing and Emerging Materials for mmWave Applications	EuMC29 Reconfigurable Planar Passive Components	EuMC36 Transmission Lines and Passive Components	EuMC42 Planar Power Dividers/ Combiners	
Glow		EuMC30 Non-Planar Filters	EuMC37 Non-Planar Filters and Devices	EuMC43 Non-Planar Devices and Systems	
Beam	EuMC25 Metamaterials for Circuits and Sensors	EuMC31 Frequency Selective Surfaces, Reflectors and Metamaterial Antennas	EuMC38 Metasurfaces and FSSs Applications	EuMC44 [Special Session] Silicon-Based Ka-Band Massive MIMO Systems	
Media arena	EuMC26 1-Minute Poster Pitch (09:40 - 10:10)	Career Platform [Special Session] Industry Market and Professional Opportunities	IEEE Young Professionals	Career Platform Startup Panel	
Fluor	SW-02 Quantum Computing for Electrical Engineers				
Shuttle		IEEE Young Professionals			
Round control		Career Platform Career Lounge: Meet Jobs, Build Careers			
loopbrug	Career Platform Company Wall and Job Wall				
Juliana 1	WW-02 High-Efficiency Linear Power Amplifiers for High Bandwidth, High PAR Signals				
Hall 1	Student Design Competition Detect a Drone / Build (a part of) an Amplifier	EuMC32 Interactive Poster Session	Student Design Competition Detect a Drone / Build (a part of) an Amplifier		
Off-site					Microwave Nightfever 20.00 - 24.00

THURSDAY

Room	08:30 - 10:10	10:50 - 12:30	13:50 - 15:30	16:10 - 17:50	EVENING PROGRAMME
Progress	WTh-01 High Resolution Radar for Automotive				
Mission 1	EuRAD08 Object Classification in Automotive Radars	EuRAD12 [Focussed Session] Radar Interference Cancellation		EuRAD16 Automotive	
Mission 2	EuRAD09 Defence Applications	EuRAD13 [Special Session] Radar and Electronic Warfare		EuRAD17 Advanced Techniques and Innovative Array Configurations for DoA	
Quest	EuRAD10 SAR Processing	EuRAD14 Surveillance and SAR		EuRAD18 SAR Applications	
Expedition	EuMC/EuRAD01 Radar Receivers and Front-Ends	EuMC49 Front-End and Active Module		EuMC54 Low Noise Amplifier and Phased Array Module	
Polar				Closing of the European Microwave Week EuMC/EuMW Closing and Awards Ceremony	
Auditorium	EuMC45 [Special Session] Focus Day: Array Antennas for Radio Astronomy	EuMC/EuRAD02 [Special Session] Focus Day: Active Array Antennas for Space	Technology in Context Philosophical Lecture	EuMC/EuRAD03 [Special Session] Focus Day: Active Array Antennas for Defence	HAM Radio Social 18.00 - 21.00
Spark	EuMC46 Advanced Planar Filter Principles and Technologies	EuMC50 Compact Planar Filtering Devices			
Flash	EuMC47 Dielectric Measurements	EuMC51 Calibration and Characterisation Techniques		EuMC55 Antenna Characterisation Techniques	
Glow	EuMC48 Microwave Monitoring and Sensing of Biomedical Parameters	EuMC52 Biological Microwave Effects and Imaging Techniques		EuMC56 [Focussed Session] Electromagnetics in Biomedical Applications	
Beam	Tom Brazil Doctoral School of Microwaves The Route to 5G: Design of mmWave Active Array Systems, from RFIC to Signal Processing				
Media arena	EuRAD11 1-Minute Poster Pitch (09:40 - 10:10)	EuMC53 1-Minute Poster Pitch (12:00 - 12:30)		EuMC57 In Recognition: Prof. Dr. A.T. de Hoop	
Fluor			WTh-03 Recent Advances in Micro-Doppler Radar and its Applications		
Round control		Career Platform Career Lounge: Meet Jobs, Build Careers			
BOR 6		Career Platform Job Dating			
loopbrug	Career Platform Company Wall and Job Wall				
Juliana 1	WTh-02 5G and Beyond: Enabling RF Architectures and Technologies for Emerging Wireless Systems				
Hall 1		EuRAD15 Interactive Poster session	EuMC58 Interactive Poster Session		

FRIDAY

Room	08:30 - 10:10	10:50 - 12:30	13:50 - 15:30	16:10 - 17:50	EVENING PROGRAMME
Progress			EuRAD25 Closing Session		
Mission 1	EuRAD19 MIMO Radar	EuRAD22 Automotive Radar MIMO Processing			
Mission 2	EuRAD20 Passive Radars	EuRAD23 Target Characterisation with Radar			
Quest	EuRAD21 New Radar Concepts	EuRAD24 [Special Session] Civilian Radar Research and Development in China			
Expedition	SF-01 Cognitive Radar Signal Processing		SF-02 Introduction to MIMO Radar		
Auditorium	5G Forum 5G: From Technology to Business	Technology in Context Philosophical Lecture	5G Forum 5G: From Technology to Business		
Spark	WF-01 Wireless Power Transmission Recent Research Advances				
Flash	WF-02 Recent Advances in Topologies, Technologies and Practical Realizations of Microwave Sensors				
Glow	WF-03 Recent Advances on Microwave Filters				
BOR 2	WF-04 Practical Aspects of Running a Microwave Laboratory and How to Make Good Measurements Every Time				
Transitzone A		EuRAD Seated Lunch			
Transitzone B		5G Forum and WS/SC Seated Lunch			

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