Submission Key Dates

D, A, T, and E papers	Deadline: September 10, 2017
Monday Tutorial proposals	Deadline: September 10, 2017
Friday Workshop proposals	Deadline: September 10, 2017
Special Session proposals	Deadline: September 17, 2017
PhD Forum	Deadline: October 15, 2017
European Projects	Deadline: October 15, 2017
Exhibition Theatre	Deadline: October 29, 2017
Notification of Acceptance	Deadline: November 10, 2017
Camera-Ready paper due date	Deadline: November 30, 2017
University Booth proposals	Deadline: January 14, 2018

Conference Organization

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Call for Papers

Special Sessions

Special Sessions can take the form of (1) Panels, discussing visionary and controversial issues, (2) Hot-Topic Sessions, focussing on the introduction and discussion of new R&D problems, and (3) Embedded Tutorial Sessions, addressing trends in the technical domains that are of interest to the conference participants. Special attention and consideration will be given to Special Sessions proposals matching the DATE 2018 technical programme, Special Days, and Exhibition Campus focus areas: future and emerging technologies (including new transistors such as GAA, beyond CMOS technologies, new memories and computing architectures, "dim silicon", new IC integration techniques complementing Moore's law, and new applications such as AI and machine learning) and designing autonomous systems (including autonomous vehicles and also Industry 4.0, with special attention to availability, reliability, safety, and security requirements and standards).

Special Session proposals must consist of an extended summary of up to 1,500 words in a PDF file, describing the topic, the authors/speakers, and the format, and must be submitted via the DATE website by **September 17, 2017.**

The submitter of a Special Session proposal will be notified of acceptance or rejection of his/her proposal by **November 10, 2017.** In case of acceptance, contributors of accepted Special Sessions will be asked to submit final texts or statements of panelists, as appropriate, for publication in the proceedings as final, camera-ready manuscripts by **November 30, 2017.** Panel sessions are entitled to one (1) page per panelist in the Proceedings; Hot-Topic Sessions are allocated a maximum of six (6) pages paper per speaker, or one single paper for the entire session which should not exceed ten (10) pages; Embedded Tutorials are allocated one single paper for the entire session which should not exceed ten (10) pages. As a rule of thumb, no more than four speakers per session should be planned for Hot-Topic and Embedded Tutorial Sessions.

For the accepted special sessions, it is the responsibility of the Special Session organizer(s) to ensure that the **November 30, 2017** deadline is met, and all the camera-ready manuscripts from their respective Special Sessions are technically sound, and meet the editorial standards of the DATE Proceedings. The Special Session Co-Chairs may decline the publication of the final manuscripts in the DATE Proceedings if the above responsibility is not fulfilled. For more information, please contact:

Giovanni De Micheli and **Marco Casale-Rossi,** specialsessions@date-conference.com

Monday Tutorials

The tutorials for DATE 2018 are designed to provide audiences with introductions to important topics in the DATE technical areas as well as hands-on tutorials on important tools. Early career professionals (e.g., PhD and MS students or early-stage professionals) will benefit from rounding out their knowledge of important topics and/or tools. Mid-career professionals can use the tutorials to extend their horizons. We welcome proposals for tutorial presentations in the DATE technical areas. Proposals should be submitted by **September 10, 2017,** via the DATE submission website. For more information, please contact:

Marilyn Wolf, monday-tutorials@date-conference.com

PhD Forum

The PhD Forum is a poster session hosted by the European Design and Automation Association (EDAA), ACM-SIGDA, and CEDA for PhD students to present and discuss their research work with people in the design automation and system design community. It represents a good opportunity for students to get feedback on their research and for the industry to see academic work in progress. Proposals can be submitted via the DATE website by **October 15, 2017.** For further information, please contact:

Cecilia Metra, phd-forum@date-conference.com

University Booth

The University Booth fosters the transfer of academic work to industry. The University Booth is part of the DATE exhibition and is free of charge for presenters and their visitors. Research institutes and universities interested in demonstrating their mature prototypes and pre-commercial results can find the submission details at www.date-conference.com/exhibition/u-booth. Submission deadline is **January 14, 2018.** If you have questions please contact:

Jens Lienig and **Andreas Vörg,** university-booth@date-conference.com

European Projects

DATE will have an entire section of the Proceedings dedicated to European Projects. EU Project Coordinators are invited to submit papers (up to six pages) presenting preliminary ideas, work in progress or lessons learned from the project. The papers will be peer-reviewed and selected based on innovation and originality. In particular, we would like to give visibility to papers addressing DATE topics. European Project papers should be submitted before **October 15, 2017** via the DATE website. For more information, please contact:

Paul Pop, european-projects@date-conference.com

Similar to previous editions, DATE offers the opportunity to rent a booth and/or meeting room for presenting project material or demos making DATE an ideal venue to meet your community and fulfil the dissemination and outreach obligations of your project. For booth rental and room reservations, please contact the Conference Organization K.I.T. Group.
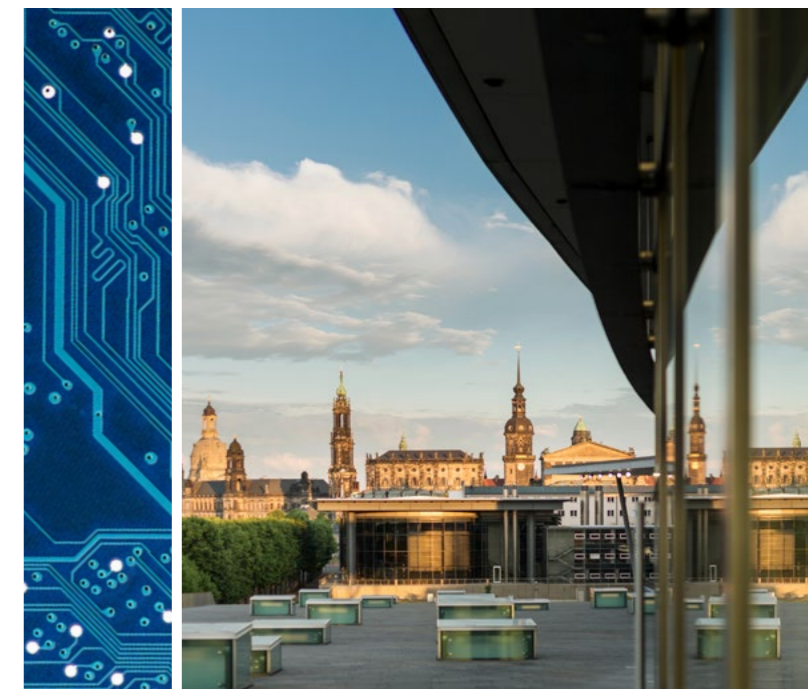
Exhibition Theatre

As an open discussion forum in the midst of Europe's leading electronic system design event, the Exhibition Theatre programme combines expert panel sessions, customers' testimonials and tutorials given by industry leaders. The aim is to offer exhibition visitors up-to-date information and fresh views on the key industrial and business issues in the electronic systems design market, with a special emphasis on career opportunities for graduates and on supporting experienced professionals with information on how to shape the future of our industry. The targeted audience includes attendees of the DATE conference and in particular the broad range of companies located in Saxony, Europe's largest microelectronics site. Submissions are invited from industry consortia, technology groups, standards bodies and any company or organization setting future industry trends by **October 29, 2017.** For more information, please contact:

Juergen Haase, haase@edacentrum.de

Friday Workshops

Proposals for Friday Workshops on emerging research and application topics are invited. Particularly suitable topics are those not directly covered in the technical program and which have the potential to impact on future DATE technical areas in design and test of microelectronic systems. For information and detailed descriptions on how to propose a workshop, please refer to the web site. Proposals should be submitted before **September 10, 2017,** via the DATE website. For more information, please contact:

Francisco J. Cazorla, friday-workshops@date-conference.com

DATE 18

Design, Automation
and Test in Europe

ICC, Dresden, Germany

Conference 19–23 March · Exhibition 20–22 March

Call for Papers

The 21st DATE **conference and exhibition** is the main European event bringing together designers and design automation users, researchers and vendors, as well as specialists in the hardware and software design, test and manufacturing of electronic circuits and systems. DATE puts strong emphasis on both technology and applications, covering ICs/SoCs, reconfigurable hardware and embedded systems, and embedded software.

The five-day event consists of a conference with plenary invited papers, regular papers, panels, hot-topic sessions, tutorials and workshops, two special focus days and a track for executives. The scientific conference is complemented by a commercial exhibition showing the state-of-the-art in design and test tools, methodologies, IP and design services, reconfigurable and other hardware platforms, embedded software, and (industrial) design experiences from different application domains, e.g. automotive, wireless, telecom and multimedia applications. The organisation of user group meetings, fringe meetings, a university booth, a PhD forum, vendor presentations and social events offers a wide variety of extra opportunities to meet and exchange information on relevant issues for the design and test community. Special space will also be allocated for EU-funded projects to show their results.

The Conference

The conference addresses all aspects of research into technologies for electronic and (embedded) systems engineering. It covers the design process, test, and tools for design automation of electronic products ranging from integrated circuits to distributed large-scale systems. This includes both hardware and embedded software design issues. The conference scope also includes the elaboration of design requirements and new architectures for challenging application fields such as telecom, wireless communications, multimedia, healthcare and automotive systems. Persons involved in innovative industrial designs are particularly encouraged to submit papers to foster the feedback from design to research. Panels, hot-topic sessions and embedded tutorials highlight and inform about emerging topics.

Special Days in the programme will focus on two areas bringing new challenges to the system design community:

Future and Emerging Technologies: The demands of future applications far exceed the capabilities of today's computing systems. Yet the progress in traditional computing hardware technologies has begun to stall at the exact moment when these exciting applications are demanding large improvements with respect to functionality, performance, and energy efficiency. This special day will explore transformative concepts that will revolutionize future computing systems. Examples include emerging nanotechnologies such as carbon nanotubes, emerging nanosystem architectures through dense heterogeneous integration, emerging computation models based on quantum information processing, and emerging application domains such as microfluidics. The special day will also address how the DATE community will play a major role in enabling these advances.

Designing Autonomous Systems: Autonomous vehicles and robots are prominent examples for a larger trend towards embedded and cyber-physical systems autonomy serving many purposes: function automation, function adaptation, platform adap-

tation, and handling the dynamics of function integration on large open networks (e.g. Industry 4.0). In autonomous systems, the current separation of design process and operation in the field will be replaced by a life-time process of in-field adaptation. Continuous change and evolution, application interference, environment dynamics and uncertainty have complex effects, which must be controlled to adhere to safety, availability, and security guarantees where needed. This special day will cover the latest trends in autonomous systems and the resulting challenges for design processes and EDA tools.

On the first day of the DATE event, half-day in-depth technical tutorials are given by leading experts in their respective fields. The tutorials are well suited for researchers, tool developers and system designers.

Friday Workshops concentrate on specialised and novel topics.

The Exhibition

The vivid accompanying exhibition states a unique networking opportunity for vendors of tools and services for hardware and embedded software for the design, development and test of Systems-on-Chip, IPs, Embedded Systems, ASICs, FPGAs and PCBs. Furthermore, it states the perfect venue for industries to meet university professors to foster their university programme and especially for PhD Students to meet their future employers.

A full programme in the Exhibition Theatre will again combine presentations by exhibiting companies, best-practice reports by industry leaders on their latest design projects and selected conference special sessions.

The full list of participating exhibitors and sponsors including their company profiles can always be found online:
www.date-conference.com/exhibitors-sponsors

Topic Areas for Submission

Within the scope of the conference, the main areas of interest are organized in the following tracks. Submissions can be made to any of the track topics. *For detailed descriptions of the topics, please refer to the DATE website.*

Track D: Design Methods and Tools track addresses design automation, design tools and hardware architectures for electronic and embedded systems. The emphasis is on methods, algorithms, and tools related to the use of computers in designing complete systems. The track's focus includes significant improvements on existing design methods and tools as well as forward-looking approaches to model and design future system architectures, design flows, and environments.

This track is organised in the following topics:

D1	System Specification and Modeling
D2	System Design, High-Level Synthesis, and Optimization
D3	System Simulation and Validation
D4	Formal Methods and Verification
DT5	Design and Test for Analog and Mixed-Signal Circuits and Systems, and MEMS
DT6	Design and Test of Secure Systems
D7	Network on Chip
D8	Architectural and Microarchitectural Design
D9	Power Modeling and Low-Power Design and Optimization
D10	Temperature and Variability-Aware System Design and Optimization
D11	Reconfigurable Computing
D12	Logical and Physical Analysis and Design
D13	Emerging Technologies for Future Computing
D14	Emerging Technologies for Future Memories

Track A: Application Design track is devoted to the presentation and discussion of design experiences with a high degree of industrial relevance, real-world implementations, and applications of specific design and test methodologies. Contributions should illustrate innovative or record-breaking designs, which will provide viable solutions in tomorrow's silicon, embedded systems, and large-scale systems. In topic A8, there is the opportunity to submit 2-page papers that expose industrial research and practice.

This track is organised in the following topics:

A1	Power-efficient and Sustainable Computing
A2	Communication, Consumer and Multimedia Systems
A3	Automotive Systems and Smart Energy Systems
A4	Healthcare, Wellness, and Assistive Technologies
A5	Secure Systems, Circuits, and Architectures
A6	Reconfigurable and Robust Systems
A7	Applications of Emerging Technologies
A8	Industrial Experiences Brief Papers

Track T: Test, Reliability, and Robustness track covers all test, design-for-test, reliability, and design-for-robustness issues, at system-, chip-, circuit-, and device-level for both analog and digital electronics. Topics of interest also include diagnosis, failure mode analysis, debug and post-silicon validation challenges, and test or fault injection methods addressing system security.

This track is organised in the following topics:

T1	Modeling and Mitigation of Defects, Faults, Variability, and Reliability
T2	Test Generation, Simulation and Diagnosis
T3	Design-for-Test, Test Infrastructures, Test Standards
T4	System-Level Reliability Design, Analysis and On-line Test
DT5	Design and Test for Analog and Mixed-Signal Circuits and Systems, and MEMS
DT6	Design and Test of Secure Systems

Track E: Embedded and Cyber-physical Systems track is devoted to the modeling, analysis, design and deployment of embedded software or embedded/cyber-physical systems. Areas of interest include methods, tools, methodologies and development environments. Emphasis will also be on model-based design and verification, embedded software platforms, software compilation and integration, real-time systems, cyber-physical systems, networked systems, and dependable systems.

This track is organised in the following topics:

E1	Real-time, Networked, and Dependable Systems
E2	Compilers and Software Synthesis
E3	Model-based Design and Verification
E4	Embedded Software Architectures
E5	Software architectures for Cyber-Physical Systems

Committees

A full list of the executive and programme committee members is available on the DATE website: **www.date-conference.com**

Sponsors

The event is sponsored by the European Design and Automation Association, the Electronic System Design Alliance, the IEEE Council on EDA, ECSI, ACM – SIGDA, and RAS.

In cooperation with IEEE Computer Society test technology technical Council (tttC), IEEE Solid-State Circuits Society (SSCS), International Federation for Information Processing (iFiP).

Submission Instructions

All manuscripts for any technical topic of the D, A, T, and E tracks must be submitted for review electronically, following the instructions on the conference website: **www.date-conference.com**

The accepted file format is PDF. Any other format and manuscripts received in hard-copy form will not be processed.

Papers can be submitted for either formal oral presentation or for interactive presentation. Oral presentations require novel and complete research work supported by experimental results. Interactive presentations are expected to articulate emerging and future design, verification, or test problems including work-in-progress and identify open problems that merit innovative future research. These presentations are delivered on a poster or on a laptop in a face-to-face discussion area.

→ **Submissions should not exceed 6 pages in length for oral-presentation papers and 4 pages in length for interactive-presentation papers. Submission in topic A8 (Industrial Experiences Brief Papers) cannot exceed 2 pages in length.**

→ **WARNING: you are not allowed to modify the list of authors after the submission deadline. It is extremely important that you put the full list (in the correct order) when submitting the paper online. If your paper is accepted, you will not be able to modify this information later on.**

All papers should be formatted as close as possible to the final format: A4 or letter sheets, double column, single-spaced, Times or equivalent font of minimum 10pt. Paper templates are available on the DATE website for your convenience. To permit blind review, submissions must not include the author names. Any submission that is not in line with the above rules will be discarded.

All papers will be evaluated with regard to their suitability for the conference, originality, and technical soundness. The Programme Committee reserves the right to reorient oral-presentation papers to interactive-presentation and vice versa, to obtain the most suitable presentation format.

→ **Submissions simultaneously under review or accepted by another conference, symposium, or journal will be rejected. The DATE conference will work cooperatively with others to check for double submissions.**

Further Instruction for Special Sessions

In addition to the above-stated important instructions, e.g. w.r.t. author list and double submissions, please adhere to the following:

→ **Session Chair/Co-Chair:** every session must have a chair and a co-chair; the chair and the co-chair are responsible for the preparation of the session – e.g. making sure that all presentations are timely uploaded – and for the monitoring of the session; they cannot be selected among the moderator/panelists, or speakers/presenters.

Registration Rule for all accepted papers

It is mandatory that at least one author of each accepted paper attends the conference to present the work. Please note that each paper shall be accompanied by at least one full conference registration at the speaker rate (i.e., two speaker registrations are needed for two accepted papers, e.g. from the main author or a co-author of the paper). In case of no attendance / presentation in person on-site, the paper will be deleted from the proceedings afterwards (despite full payment at the speaker rate).