

# DS-RT 2021 (Valencia Spain) facts (Virtual Edition)

## General Chair

Carlos Tavares Calafate  
Universitat Politècnica de  
València, Spain

## Program Chair

Floriano de Rango  
University of Calabria, Italy

## Vice Program Chair

Greg Zacharewicz  
IMT Mines Ales, France



## DS-RT 2021 Total Papers Submitted

- 67 Papers
- Main Track
  - 50 Papers Submitted
    - Accepted as Full papers 16
    - Accepted as short papers 6
- Special Session
  - 17 Papers Submitted
    - Accepted as Full papers 5
    - Accepted as short papers 3



# DS-RT 2021 Keynotes

## Prof. Vincent Chevrier

Department of Computer Science  
University of Lorraine,  
France



**Title:** *(Co)simulation of cyber-physical systems with MECSYCO*

**Date:** SEP 27, 10:45 (CET)

### Abstract:

Most modeling and simulation (M&S) questions about cyber-physical systems (CPS) require expert skills belonging to different scientific fields. The challenges are then to rigorously integrate each domain's tools (formalism and simulation software) within the rigorous framework of M&S process. Co-simulation is a way to achieve it. During this talk, we position the need for cosimulation and review existing solutions. Then we present the solution we adopted which consists in a DEVS wrapping strategy for heterogenous models/simulators integration. Mecsyco middleware implements all these contributions (mecsyco.com) and was successfully applied for cosimulation of cyberphysical energy systems. Beside a general overview of the MECSYCO possibilities, a special focus will be made on the meaning of distributed and decentralized (Co-)Simulation in the MECSYCO context.

## Prof. Edward A. Lee

Distinguished Professor, EECS,  
University of California at Berkeley,  
USA



**Title:** *Consistency and Availability Tradeoffs in Cyber-Physical Systems*

**Date:** SEP 28, 15:00 (CET)

### Abstract:

In distributed systems, Brewer's CAP theorem tells us that when networks become partitioned, there is a tradeoff between consistency and availability. Consistency is agreement on the values of shared variables across a system, and availability is the ability to respond to reads and writes accessing those shared variables. Although this concept is well established in the database community, in this talk, I will show that the same fundamental tradeoff arises in cyber-physical systems. I will describe two distributed coordination mechanisms, implemented as an extension of the Lingua Franca coordination language, that support arbitrary tradeoffs between consistency and availability as network latency varies. In our centralized coordination mechanism, inconsistency remains bounded by a chosen numerical value at the cost that unavailability becomes unbounded under network partitioning. With our decentralized coordination, unavailability remains bounded by a chosen numerical quantity at the cost that inconsistency becomes unbounded under network partitioning.

## Prof. Edwin Z. Crues

Simulation and Graphics Branch  
NASA Johnson Space Center  
Houston, Texas, USA



**Title:** *Returning to the Moon: Plans for Distributed Simulation in the Artemis Program*

**Date:** SEP 29, 15:00 (CET)

### Abstract:

It's been almost 50 years since the Apollo program and humans were last present on the Moon. Now, NASA is making plans to lead an international consortium of commercial and governmental partners back with the Artemis program. Just as with Apollo, almost every aspect of the design, development, planning, and execution of the Artemis program will be simulated but in even greater detail. Fortunately, there have been many advances in modeling, simulation, computations, and computer networking in the past 50 years.



# DS-RT 2021 featured the following Special Sessions

- Modeling and Simulation of Agent-based Systems
- Modeling, Analysis, and Simulation of Drones and UAVs in emergent applications
- Distributed Systems in Industry 4.0, Digital Twin, and Internet of Things





# IEEE/ACM DS-RT 2021

## Best Paper

is awarded to

Junjiang Li, Till Köster, and Philippe Giabbanelli

for their paper entitled

Design and evaluation of update schemes to optimize asynchronous Cellular Automata with random or cyclic orders

Valencia, September 29, 2021

Signature: Prof. Carlos T. Calafate  
DS-RT 2021 General Chair







# DS-RT 2022

*IMT Mines Ales, Alès, France, (host city)  
September 26-28, 2022*



# DS-RT 2022

Alès, France

September 26-28, 2022



<http://ds-rt.com/2022/index.html>

## Important dates

**Paper Submission : May 15, 2022**

Acceptance notification : June 30th 2022

Camera-ready : July 31th, 2022

Author registration : TBA

## AUTHORS

- Call for papers
- Submission guidelines
- Call for posters

## Welcome to DS-RT 2022 !

The 2022 edition of the IEEE/ACM 26th International Symposium on Distributed Simulation and Real Time Applications (DS-RT) will be held in Alès, France.

DS-RT 2022 serves as a forum for simulationists from academia, industry and research labs, for presenting recent research results in Distributed Simulation and Real Time Applications. DS-RT 2022 targets the growing overlap between large distributed simulations and real time applications, such as mirror world simulations and collaborative virtual environments.

The conference features prominent invited speakers as well as papers by top researchers in the field. DS-RT 2022 will include contributed technical papers, invited papers, and panel discussions. The proceedings will be published by IEEE-CS press.

This event is a wonderful opportunity to join the community of experts on related topics, share experiences, and have fruitful discussions.

*Prof. Gregory Zacharewicz*, General Chair

*Prof. Umut Durak*, DS-RT Program Co-Chair *Prof. Gabriele D'Angelo*, DS-RT Program Co-Chair

26th editions of DS-RT



# DS-RT 2022 Organizing Committee

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- Gregory Zacharewicz, IMT Mines Ales, France

## Program Co-Chairs

- Umut Durak, German Aerospace Center (DLR), Institute of Flight Systems, Germany
- Gabriele D'Angelo, University of Bologna, Italy

## Special Sessions Chair

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## Local Organization Co-Chair

- Nicolas Daclin, IMT Mines Ales, France
- Francois Troussset, IMT Mines Ales, France



# DS-RT 2022 Sponsorship

- ACM SIGSIM 20%
- IEEE 80%
  
- Estimated Revenue: 24000 €
  
- What is the estimated number of submitted papers?
  - 60
- What is your targeted acceptance rate for submitted papers?
  - 45 %
- How many reviewers will review each paper?
  - 3

