



# HSI2019 Human Systems Integration Conference

Biarritz, France  
September 11 - 13, 2019

## HSI2019 — Call for Contributions

International Conference on Human-Systems Integration

### From the Chair

INCOSE International Conference on Human Systems Integration, HSI2019, will be held in Biarritz, France on September 11-13, 2019. Save the date! HSI emerges from the combination of human-centered design (HCD) and systems engineering (SE) as a highly participative and incremental process.

HSI requires creativity (thought as synthesis and integration) as well as experience awareness and validation (thought as experimental tests, operations quality analysis, discovery of emergent properties, standards, and so on).

Modeling and simulation capabilities tremendously improve possibilities of taking into account human factors during the early stages of design and throughout the entire life cycle of systems. Operational personnel can be involved in virtual operations tests to determine appropriate requirements for effective design and development.

HSI2019 will take place in Biarritz, France, a beautiful proactive place, where engineering education, innovation and tourism are main assets. In this setting, the conference intends to inspire and engage researchers, innovators and practitioners in productive discussions of how technologies, organizations, jobs and responsibilities of operations actors, engineering designers, certifiers, trainers, maintainers and many other technology stakeholders can be reshaped to meet near and long-term goals of safe, efficient and comfortable operations.

HSI2019 will continue the discussion of the shift from human-computer interaction to human-systems integration which was started during HCI-Aero 2016 in Paris, France. We also invite papers on visionary and transformational ideas and “out-of-the-box” thinking that can move industrial operations in new directions. “Integrate and Interact” will be the primary focus of HSI2019. Therefore, we encourage the dialogue between industrial sectors that includes aeronautics, space, medicine, automotive, oil and gas, defense as well as other fields.

HSI2019 will bring together manufacturers, operators, government, research centers and academia to focus on improving industrial teams of teams. The current economic environment puts additional pressure on all of us to make industrial operations more efficient and affordable. We invite you to submit innovative methods, techniques, tools and technology that can lead the way. This includes laboratory research and field investigations, industrial developments and perspectives. While the primary focus is on HSI, we will consider papers on a wide range of topics including design, evaluation, certification and rule-making, training, maintenance, in-service experience and incident/ accident investigation.

HSI2019 is organized in cooperation with ACM, IEA and Air & Space Academy.

**Guy André Boy**, INCOSE  
General Chair of HSI2019



With the support of



[www.incose.org/hsi2019](http://www.incose.org/hsi2019)

### Deadlines

28 Dec 2018	Full research papers
18 Jan 2019	Industry papers, Early stage researcher papers
18 Jan 2019	Panels, Posters, Demos, Workshops
29 Mar 2019	Acceptance notification
31 May 2019	Camera-ready
11-13 Sept 2019	HSI2019 in Biarritz



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# A scientific and industrial event

## General Chair

Guy A. Boy, CentraleSupélec & ESTIA, France  
Chair of INCOSE HSI WG

## Program Committee

David Atkinson, Continental, USA  
Sebastiano Bagnara, University of San Marino  
Thierry Bellet, IFSTTAR, France  
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Markus Durstewitz, Airbus, Germany  
Marc Garbey, Houston Methodist Hospital, USA  
Gudela Grote, ETH, Switzerland  
Holly Handley, IEEE, Old Dominion Uni., USA  
John Hansman, MIT, USA  
Peter Hecker, TU Braunschweig, Germany  
Denis Javaux, Consultant, Belgium  
Christopher Johnson, Univ. of Glasgow, UK  
Ratan Khatwa, Honeywell, USA  
Parimal Kopardekar, NASA, USA  
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Patrick Millot, Univ. Valenciennes, France  
Peter Moertl, Karl-Franzens-Uni., Graz, Austria  
Cynthia Null, NASA Ames, USA  
Philippe Palanque, University of Toulouse, France  
Gunther Paul, James Cook Uni., Australia  
Jean Pinet, Air & Space Academy, France  
Edwige Quillerou-Grivot, INRS, France  
Florence Reuzeau, Airbus, France  
Jean-Marc Robert, Ecole Poly. Montréal, Canada  
Alexander Rudolph, Continental, Germany  
Dirk Schaefer, EUROCONTROL, France  
Axel Schulte, Bundeswehr Uni., Germany  
Jean-Jacques Speyer, Univ. Bruxelles, Belgium  
Neville Stanton, University of Southampton, UK  
Sun Ruishan, Civil Aviation Univ. of China, China  
Wei Tan, Civil Aviation Univ. of China, China  
Pernilla Ulfvengren, KTH, Sweden  
Jean Vanderdonck, Uni. Catho. Louvain, Belgium  
Bernard Yannou, CentraleSupélec, France  
Avigdor Zonnenshain, Technion, Israel

## Organization

Michel Grillet, ESTIA, France  
Benoît Gigarel, ESTIA, France  
Nicole Ann Hutchison, INCOSE, SERC, USA  
KMD Events, USA, USA  
NC Lab, France

## Themes

### HSI principles, methods and tools

Tools & methods for human-systems integration  
Ethnographic studies, Human error, Fatigue  
Situation awareness, decision-making, workload  
Crisis & unexpected events management  
Training issues, personnel selection  
HSI metrics for certification  
Role of HSI in accident investigations  
Experience feedback & reporting systems  
Emerging operational issues in complex systems  
Concepts of operations, scenario-based design  
Mock-ups, part task and full-task simulators  
Human-centered design, Design for usability  
Creativity, design thinking and design theories  
Digital Human modeling

### Organizational issues and solutions

Teams of teams vs. systems of systems  
Next generation OPS/technical documentation  
Automation across systems  
Supervision, mediation, cooperation, competition  
Multi-agent modeling  
Tangible interactive systems  
Change management, lean management  
Organization design and management  
Maintenance resource management / CRM

### Humans, autonomy and complexity

Automation vs. autonomy  
Cyber physical & human systems  
Training for autonomy  
Adaptive system design  
Complexity analysis and property emergence  
Autonomous systems maturity & reliability  
Flexibility in design and operations  
Human-robot interaction  
Information visualization, immersive environments

### HSI, safety and infrastructures

Agents-infrastructure integration  
Safety management system (SMS)  
Influence of national and organizational cultures  
Integration and global coordination  
Responding to infrastructure collapse

### Legal and Regulatory

Standards and specific regulations  
Regulatory compliance  
Criminalization of accidents, Legal issues  
Regulating autonomous vehicles  
HSI means of compliance  
HSI evaluations for design and certification

## Submissions

Submissions must be written in English and present unpublished work. They will be peer-reviewed by at least 3 reviewers. Acceptance will be based primarily on originality and high-quality contributions. They should have a cover page including title, author's names, postal and electronic addresses, keywords and abstract, and be sent in PDF format. For information on presentation format consult HSI2019 website. All accepted submissions will be presented at HSI 2019 and appear in the Conference Proceedings. Selected full papers will be accessible to INCOSE members and in-cooperation associations (to be announced later).  
Easy chair submission will open soon.

## Research Track

**Deadline: December 28, 2018**

*(up to 8 pages including diagrams and references)*  
Research Papers present significant contributions to research, development and practice in the field of human-systems integration. Submissions should present new approaches to HSI, emphasizing the interest and originality of the approach and provide complete and substantial support for its results and conclusions. Only unpublished papers will be accepted.

## Industry Track

**Deadline: January 18, 2019**

*(From 4 to 6 pages including diagrams)*

We solicit papers with practical implications or tied to actual implementation in industry and the operational world. These papers will be presented either in special sessions or combined with related research papers. This track is dedicated to practitioners to share the recent evolution of industrial innovations.

## Early Stage Research Track

**Deadline: January 18, 2019**

*(Up to 4 pages including diagrams and references)*

Early stage research has not yet been completed, or may be in the phase of developing research questions and approach, results, or practical work. This track encourages the active participation of emerging researchers and professionals to support their work and to involve them in the HSI community.

This track also welcomes submissions from students involved in graduate work not yet sufficiently completed for papers in the regular research track. These papers will be presented in a special session allocating more time to discussion and feedback.

Early stage researchers may be assisted by an experienced mentor in their area of research. All submissions should include a brief description of the researcher's experience.

## Panels, Workshops, Posters Demos

**Deadline: January 18, 2019**

*(Up to 2 pages including diagrams and references)*

**Panels** must explore a range of perspectives as well as controversial and burning issues. Panelists should include different backgrounds, i.e., practitioner/researcher, cultural backgrounds, and disciplines.

**Workshops** are discussion forums of work in progress, which are managed by a chair and a committee, and focused on a specific theme. All accepted workshops are held on a half-day or full-day period.

**Posters** present research in progress or recently developed industrial devices and innovative methods.

**Demos** must show ground-breaking innovative products and prototypes.