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

Conference Endorsed by the
IEA
International Ergonomics Association

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
13 May 2019	Camera-ready
11-13 Sept 2019	HSI2019 in Biarritz

A scientific and industrial event

General Chair

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

Program Committee

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Dirk Schaefer, EUROCONTROL, France
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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 Vanderdonckt, Uni. Catho. Louvain, Belgium
Bernard Yannou, CentraleSupélec, France
Avigdor Zonnenshain, Technion, Israel

Organization

Michel Grillet, ESTIA, France
Benoît Gigarel, ESTIA, France (webmaster)
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).

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 aeronautical 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 allocat ing 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.