

SATC AIAA AVIATION 2027 Call for Papers

The Society and Aerospace Technology Committee (SATC) invites papers for AIAA AVIATION 2027 that examine the effects of aviation and aerospace technologies on people, communities, institutions, culture, and society. SATC welcomes research on the societal benefits, risks, concerns, and unintended consequences of developing, adopting, and operating aviation technologies. Papers may examine current systems, emerging technologies, future concepts, or historical cases that offer meaningful lessons for aviation today.

Topics may include ethics and responsibility in aerospace; public trust and acceptance; governance and policy; equitable access to aviation; community and environmental impacts; human-machine relationships; cultural influences on technology; group dynamics in isolated or operationally constrained environments; and the broader societal consequences of aviation innovation, policy, regulation, and economics.

Interdisciplinary contributions are strongly encouraged, including work that draws on engineering, human factors, public policy, psychology, sociology, economics, law, public health, urban planning, education, communication, history, and the arts.

SATC especially encourages papers that go beyond describing a technology or process to examine who benefits, who bears its risks or burdens, how decisions are made, and what conditions are necessary for responsible, publicly supported implementation.

1. Societal Implications of AI, Autonomy, and Human-Machine Decision-Making (with DE)

- a. Artificial intelligence, autonomy, and human-machine decision-making, including accountability, explainability, operator roles, skill retention, public confidence, ethical decision-making, and appropriate levels of human authority and oversight, in collaboration with the Design Engineering and related technical groups.

2. Public Trust and Responsible Adoption of Autonomous Air Mobility (with UAS/SUST)

- a. Societal implications of Advanced Air Mobility adoption and long-term sustainment, including public trust, perceived safety, community integration, affordability, infrastructure, land use, noise exposure, accessibility, and the distribution of benefits and burdens. Papers may also address sustainable approaches to adoption through ethical and responsible governance. In collaboration with Autonomous Air Mobility, Uncrewed and Autonomous Air Systems, and Sustainability Committees

- 3. Trustworthiness & reliance in adopted intelligence/automation tools & processes (joint DE/IS/SAT)**
- 4. Policy, Governance, Economics, and Workforce Readiness for Emerging Aerospace Technologies**
 - a. As emerging technologies transform the future of aviation, significant policy, regulatory, and certification hurdles may slow innovation and delay market entry.
 - b. Economic and societal impacts of emerging aerospace markets and business models.
 - c. Education, training, recruitment, retention, and workforce development needs associated with future air transportation systems.
- 5. Societal and Policy Implications of UAS, UTM and Conventional Airspace Integration (ATS/ATM/UAS)**
 - a. Community, societal, and policy implications of UAS and UTM integration, including privacy, public safety, local governance, low-altitude airspace use, and public acceptance, in collaboration with Air Transportation Systems, Aerospace Traffic Management, and Uncrewed and Autonomous Air Systems Committees.
- 6. Accessibility, Inclusivity, and Affordability for Future Air Transportation Systems**
 - a. Inclusive and accessible aviation futures, including the design of aircraft, airports, services, and emerging mobility systems for passengers and communities with diverse physical, geographic, and social needs.
- 7. Aviation Sustainability, Climate Adaptation, Community Impact, and System Resilience (with SUST)**
 - a. Aviation sustainability and resilience as a societal challenge, including sustainable aviation fuels, non-CO₂ climate effects, contrail mitigation, environmental justice, affordability, public understanding, and the social distribution of transition costs and benefits.
 - b. Aviation noise, health, and community response, including conventional aircraft, advanced air mobility, drones, and supersonic operations; public perception; annoyance; environmental health; community engagement; and mitigation approaches.
 - c. Resilience, security, and public dependence on aviation systems, including GNSS interference, cybersecurity, infrastructure disruption, geopolitical risk, digital-service dependency, and the societal consequences of aviation-system failures.

8. Building Confidence Through Science Communication, Media, and Public Engagement

- a. Science communication, risk communication, and public engagement concerning emerging aerospace capabilities, including the accurate presentation of benefits, limitations, risks, and scientific uncertainty.
- b. Cultural communication and public imagination in aviation, including the influence of popular culture, media, history, education, and the arts on aerospace development, public expectations, risk perception, and support for aviation initiatives.

9. Unexpected, Indirect, or High-Impact Societal Benefits and Consequences of Aviation Innovation

- a. Unexpected, indirect, or high-impact societal benefits and consequences of aviation innovation, including effects on emergency response, healthcare, education, economic development, regional connectivity, workforce transformation, and quality of life.

10. Creative and Interdisciplinary Approaches at the Intersection of Aerospace and Society (with DE)

- a. Creative and interdisciplinary approaches to aviation's societal challenges, including new research methods, participatory and community-based research, speculative design, scenario analysis, and novel collaborations across technical and nontechnical disciplines, in collaboration with Design Engineering Committee.

11. Creative design, emerging trends, new processes, novel aerospace applications (joint DE/HMT/SAT)

12. Other topics of interest

- a. This is intended to capture other concepts that may be of interest to SATC and not described above.