Software development in the aerospace domain is driven by demanding fault tolerance, increasing complexity, new application potentials, rising certification effort, and increasing cost pressure. New software development methodologies are required for future applications such as e.g., autonomous air transport, aircrew (workload) reduction, commercial Unmanned Aerial Systems (UAS), and further enhancement of existing functionality. At the same time, there are challenges in communication and navigation in airspace, certification for multi-core processors, artificial intelligence (AI) as well as security of software, hardware, and connectivity. The objective of the workshop is the exchange on new technologies, systems, software, methods and tools with an application in avionics. Desired are presentations within this domain from both academia and industry. Topics of interest, but not limited to these, are:

### Development Technologies
- Requirements Engineering
- Modelling languages and tools
- Model-based systems and software engineering (MBSE)—Transfer of modelling techniques to industrial application and their scalability
- Verification via testing and formal methods and their scalability
- Cyber-security and safety
- Algorithm-based sizing, layout, design, and automation of development and certification artifacts

### Product Technologies
- Applications of AI (including verification, certification, and explainability)
- Autonomous systems (e.g. UAS, Remotely Piloted Aircraft System (RPAS))
- Sensors, sensor fusion, and sensor management
- Integrated Modular Avionics (IMA) and other avionics platform
- Human-Machine-Interface (HMI)
- Safety-critical middleware and operating systems

### Development Methods
- Agile development vs. certification
- Interaction with other domains (e.g. electrical engineering, physics, psychology)
- Deployment of artificial intelligence for enhancing development processes
- Automated and/or digital engineering workflows

### Vision Paper
(Short) vision papers on upcoming challenges, technologies or regulations

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**Dates:**
- Paper Submission: Dec 3, 2021
- Notifications: Jan 7, 2022

**Accepted papers will be published in dl.gi.de**

**Short paper:** max. 10 pages  
**Full paper:** max. 20 pages

**Virtual Conference**
- Language: English

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Co-located with: [SE 2022](https://se-2022.de)

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