

Panel Discussion: Towards Total Open Source in Aeronautics and Space?

Moderator: Peggy Aycinena, Editor, EDA Confidential, USA

Panellists: Eric Bantegnie, CEO Esterel technologies, France
Gerard Ladier, Senior Manager Software Engineering, Airbus, France
Ralph Mueller, president Eclipse Europe, Germany
Franco Gasperoni, Managing Director, ADACORE, France, USA
Alex Wilson, Wind River, UK, USA

Aeronautics and space are extraordinarily technical fields of engineering and science that reside within a niche characterized by unique end-product requirements. The severe operating conditions in flight or in space, in combination with the need for mission-critical reliability, create a difficult and challenging level of expectation for those who develop the hardware and software that goes into systems for aeronautics and space.

Given that is the case, it is fascinating to consider the implications of open source software within such a demanding context. Although academics, or those employed at high-tech companies involved in consumer electronics or automotive, may be very familiar with open source and its larger implications, they may not be as familiar with the specific constraints on open source software within the embedded systems required for the aeronautics and space industry. This panel discussion attempts to showcase these implications, and some of the controversy.

With representatives from Airbus, the European aeronautics giant, Alcatel Alenia Space, a satellite systems and orbital infrastructure company, Esterel, which specializes in model-based design and verification tools for critical embedded systems, AdaCore, which provides a range of Ada language development tools, Wind River, the embedded operating system and software optimization company, and Eclipse, the IBM-initiated open source, platform-independent framework for software development – the panel includes two aerospace product companies, two vendors of embedded systems tools, an embedded operating system provider, and a representative of a widely heralded open source development platform. These panellists are all involved in some way with aerospace applications, and are faced with an imposing challenge in their work and on this panel.

Tools for development, modelling, and testing mission-critical systems are now having to support Linux, among a number of different operating systems.

- How do the tool providers and the tool users address the interface to an open source environment such as Linux, while still addressing the critical needs of the end product and the end user?
- Is the philosophy behind open source compatible with the highly specialized needs of the aeronautics and space industry? Or, are open source platforms inappropriate for the mission-critical end products targeted for the demanding environments of aviation and space?
- If platforms like Linux and Eclipse are supported by a loose, albeit highly organized, consortium of volunteer developers, are they stable enough for failure-is-not-an-option applications?
- Finally, what are the implications within a discussion of the transfer of aerospace technology from academia and research into industry when framed within the context of open source?

The panellists will address these issues, each from their own perspective. They will attempt to decide if open source is or is not destined to go to infinity and beyond.