

Technology Assurance for Space Systems in an Age of Rapid Diversification

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Being a member of today's aerospace community can be exciting, confusing, and scary – sometimes simultaneously. As assurance engineers, commodity specialists, and designers, we face an array of challenges concerning the proper selection and acceptance of electrical, electronic, electromechanical, and electro-optical components. The ability to design, build, and successfully operate blended systems with varying degrees of commercial-off-the-shelf (COTS) and military-aerospace grade components is no longer innovation, it is a requirement.

The cost, performance, and schedule expectations of today's missions often demand the use of COTS components or technologies, including automotive electronics and advanced packaging solutions. This has placed unique burdens on an already-stretched workforce, existing technical guidelines and standards, as well as key test facilities. These market stresses have also stimulated demand within the community of component suppliers, who now offer a growing range of different mid-space or alternative grade options between pure COTS and traditional military-aerospace grade components. We will discuss strategies for coping with this changing landscape as well as some of the efforts afoot to build lasting solutions. In either case, continued evolution is essential.



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Dr. Pellish received the B.S. degree in physics from Vanderbilt University in 2004, and the M.S. and Ph.D. degrees in electrical engineering from Vanderbilt University in 2006 and 2008. He has authored or co-authored over 60 refereed publications in addition to numerous conference and workshop presentations. Jonny is a member of the American Institute of Aeronautics and Astronautics and the Institute for Electrical and Electronics Engineers.