

AUTOSAR : An Architecture for Spacecraft Onboard Systems?

Plummer, C¹; Leen, G²

¹Rovsing; ²The University of Limerick

AUTOSAR (AUTomotive Open System Architecture) is an open and standardised software architecture that is increasingly being adopted by automobile manufacturers, suppliers, and tool developers. There are very strong similarities between the requirements between modern automobile systems and spacecraft, and this emerging technology could therefore be a very appropriate candidate for adoption by the space industry. Aside from the technical benefits offered by AUTOSAR, there is the further significant advantage that the automotive industry is currently well funded and there is a strong incentive to finalise the AUTOSAR architecture. The space industry can therefore capitalise on this by taking advantage of the large pool of knowledge and rapid rate of development of AUTOSAR. This presentation looks at AUTOSAR both from the technical and financial angles, showing how AUTOSAR can meet the requirements of a standardised architecture for spacecraft onboard systems, and how the space industry can ride the wave of current developments in the much larger and better funded automotive industry. The presentation is made jointly by experts in the space and automotive sectors respectively, and both authors have previously acted as consultants to ESA for standardisation of onboard systems and architectures. Chris Plummer has worked in the space industry for 18 years and has an in-depth knowledge of flight systems and first hand relevant experience of space standardisation. Dr Gabriel Leen is an expert in the field of automotive systems and formerly worked for LERO, the Irish National Software Research Institute as an AUTOSAR expert. Dr Leen has acted as a consultant on standardisation both to the automotive industry and to ESA-ESTEC.