عنوان مقاله:

Safety Assessment of avionics systems Using Formal Methods

محل انتشار:

دومین کنفرانس ملی اویونیک ایران (سال: 1393)

تعداد صفحات اصل مقاله: 6

نویسندگان:

Mohsen Fazeilina - *Department of Electrical and Computer Engineering Isfahan University of Technology Isfahan ۸۴۱۵۶-۸۳۱۱۱, Iran*

Vahid Ghafarinia - *Department of Electrical and Computer Engineering Isfahan University of Technology Isfahan ۸۴۱۵۶-۸۳۱۱۱, Iran*

خلاصه مقاله:

Avionics systems play a critical role in the operation of aircrafts. The demand for more safety and higher performance has increased the complexity of these systems. The design of these software-intensive networked systems should be dependable and verifiable according to the airworthiness regulations. Thus, detailed analysis and verification of complex and safety critical avionics systems is required, especially at the initial stages of the design. Formal methods provide a good framework for the specification and verification of complex systems from the initial high level design to the final detailed design. Here we have used the Architecture Analysis & Design Language (AADL, SAE 5506 Standard) to describe the behavioral characteristics of the flight control system (FCS). The FCS was formally specified and verified using AADL. Then, the derived FCS model was used for fault tree analysis, fault hazard analysis and system safety assessment. The results of analysis showed that complexity system can't be easily evaluated and needs a mathematical and logical method for system assessment. Also these analysis describes the behavior of the error state and help to access better model for system.

کلمات کلیدی:

Avionics, flight control system; formal methods; AADL; safety assessement

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/346743