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Some issues about IMA in safety critical applications.

Abstract: IMA in safety critical applications raises, from a certifier's viewpoint, the question of the side effects that can take place between functions that are packaged together within the same computer. Two examples of undesired events produced by such side effects will be discussed, the Ariane V accident due to an uncaught exception caused by a non critical function, and the Mars Pathfinder bug due to priority inversion in multitasking. As a conclusion, the questions of the guarantees that can be required by a certifier concerning the use of IMA in safety critical applications will be addressed.