

Software Risk – Why Must We Keep Learning From Experience

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Abstract

Is there software risk in the dynamic positioning regime? Cited by Kongsberg Offshore A.S. in HSE Evaluation Report No. 00-4002: “The statistics show that the software failure is about four times as frequent as the hardware failure and slightly more frequent than the pure thruster failure.” Based on IMCA data, the percentage of “Loss of Position Class 1” DP problems that were caused by software for a recent 5-year period was 33%.

Can we mitigate the risk? FMEA, FMECA and good software engineering practices will go a long way toward reducing today's DP software risks. This is not rocket science but the lack of good engineering practices. The Airbus 300 series and the latest Boeing 7x7 aircraft are completely fly by wire. The airbags in your automobile have autonomous processors with embedded software. Embedded medical devices contain processors run by software. We would never tolerate the number of software failures in these devices that occur on DP systems. Why don't they fail at a 33% rate?

This presentation will propose a set of software and hardware life cycle processes along with a mitigation model for identifying and eliminating software risk within DP systems. Several recent incidents will be analyzed to show how these processes would have mitigated the potential for failure. Attendees will be able to take away processes they can implement in their own organizations to reduce software failures.

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