Innovations in Systems and Software Engineering

Special Issue on Software Health Management

Editors: M. Hinchey; S.A. Bohner
Guest Editors: Abhishek Dubey, Gabor Karsai, Paul Miner

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Software is increasingly becoming the main implementation tool for system functions and systems integration in complex vehicles. This leads to increases in complexity, such that it becomes exceedingly hard to exhaustively test and verify the software. As a consequence, latent faults could remain in deployed systems that manifest themselves only during operation. In physical systems such situations are addressed by ‘Integrated Systems Health Management’, where the health of (sub-) systems is continuously monitored and if anomalies are detected their source is isolated, and appropriate mitigation action is taken. Software health management applies the same concepts of health management i.e. detection, diagnosis, mitigation and possibly prognosis to software, but in the context of the larger, physical system.

This special issue invites submissions in the area of software health management within aerospace systems. Submissions should address one or more of the following topics:

- Foundations and principles of Software Health Management
- Novel technical results and tools for Software Health Management
- Challenge problems from real systems
- Application case studies

About the Journal: Innovations in Systems and Software Engineering: is A NASA Journal. It addresses issues and innovations in Systems Engineering, Systems Integration, Software Engineering, Software Development and other related areas that are specifically of interest to NASA. The journal includes peer-reviewed world-class technical papers on topics of research, development and practice related to NASA's missions and projects, topics of interest to NASA for future use, and topics describing problem areas for NASA together with potential solutions. Papers that do not address issues related to NASA are of course very welcome, provided that they address topics that NASA might like to consider for the future.