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RTO TECHNICAL REPORT **TR-SCI-144**

Integration of Systems with Varying Levels of Autonomy

(Intégration de systèmes à niveau d'autonomie variable)

This Report was prepared by Task Group SCI-144 on "System-Level Integration of Control plus Automation" and has been sponsored by the Systems Concepts and Integration Panel.

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UAV (Unmanned Aerial Vehicle)
Vehicle management systems

14. Abstract

The report begins with a historical background and the evolution of systems engineering. The report then addresses issues of controlling land, sea and air vehicles in a system of systems. There is a chapter discussing both negative and positive aspects of systems engineering, followed by a presentation of recommended best practices. There is discussion of complexity and automation, man/machine interface, single vs. multiple vehicles, and mission management, especially robust design of autonomous systems. This leads to addressing certification issues, such as verification and validation of non-deterministic systems, followed by discussion of issues and challenges. The report ends with conclusions and suggestions for required future research.

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