INTERNATIONAL STANDARD

ISO/IEC/IEEE 21839

First edition
2019-07

Systems and software engineering — System of systems (SoS) considerations in life cycle stages of a system

Ingénierie du logiciel et des systèmes — Études du système des systèmes (SdS) dans les étapes du cycle de vie d'un système

Reference number
ISO/IEC/IEEE 21839:2019(E)

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Published in Switzerland

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Foreword

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ISO/IEC/IEEE 21839 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*, in cooperation with the Systems and Software Engineering Standards Committee of the IEEE Computer Society, under the Partner Standards Development Organization cooperation agreement between ISO and IEEE.

ISO/IEC/IEEE 21839 is one of three standards dealing with systems of systems. The relationship among the three standards is described in Annex C.

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Systems and software engineering — System of systems (SoS) considerations in life cycle stages of a system

1 Scope

1.1 Purpose

This document provides a set of critical system of systems (SoS) considerations to be addressed at key points in the life cycle of the system of interest (SoI). This document refers to considerations that apply to an SoI that is a constituent system that interacts in an SoS. The considerations and life cycle model align with those which are already defined in ISO/IEC/IEEE 15288 and ISO/IEC/IEEE 24748-1. Selected subsets of these considerations can be applied throughout the life of systems through the involvement of stakeholders. The ultimate goal is to achieve customer satisfaction, so that when delivered, the SoI will operate effectively in the operational or business environment which is typically characterized as one or more systems of systems.

This document concerns those systems that are man-made and are configured with one or more of the following: hardware, software, humans, procedures and facilities.

1.2 Field of application

This document addresses SoS considerations that apply to systems at each stage of their respective life cycles.

There is a wide variety of systems in terms of their purpose, domain of application, complexity, size, novelty, adaptability, quantities, locations, life spans and evolution. This document is concerned with describing the system of systems considerations that apply to a system that is the SoI; that is a constituent system within a system of systems. It applies to one-of-a-kind systems, mass produced systems or customized, adaptable systems.

1.3 Limitations

This document does not detail the approach to addressing system of systems considerations in terms of methods or procedures.

This document does not detail the described documentation in terms of name, format, explicit content and recording media of documentation.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC/IEEE 24765, *Systems and software engineering — Vocabulary*

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