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Digital twin - Maturity model and guidance for a maturity assessment

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FOREWORD

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Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1, and the ISO/IEC Directives, JTC 1 Supplement available at www.iec.ch/members_experts/refdocs and www.iso.org/directives.

INTRODUCTION

Digital twins typically comprise several enabling technologies that are existing, under development or upcoming in the near future. Similar to other evolving digital technologies, digital twins progress through various levels of complexity. Digital twins evolve from simple to complex structures, from standalone systems to federated networks, and from requiring human intervention to achieving autonomy. Each successive level of a digital twin introduces increasingly sophisticated functionalities.

Digital twins deployed in various application domains are likely requested to cooperate with other digital twins for coping with complex problems raised across the application domains. However, different levels of features such as convergence, capabilities and integrated view prevent digital twin applications from cooperating with other digital twin applications.

In this situation, the digital twin maturity model is helpful to understand the features that should be supported by a digital twin from a low level to a higher level. The digital twin maturity model is an assessment tool of a digital twin for determining the current maturity level and common understanding of the evolution towards another level. Its purpose is to support an organization assessment of and advancement of its level of maturity in the technological capability of its digital twins. It does not provide guidance on enhancing the maturity and capability of users, or the outcomes digital twin can help deliver.

1 Scope

This document provides a generic digital twin maturity model, definition of assessment indicators, and guidance for a maturity assessment.

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 30173, *Digital twin - Concepts and terminology*