INTERNATIONAL STANDARD

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Earth-moving machinery — Functional safety —

Part 1: Methodology to determine safety-related parts of the control system and performance requirements

Engins de terrassement — Sécurité fonctionnelle —

Partie 1: Méthodologie pour la détermination des parties relatives à la sécurité des systèmes de commande et les exigences de performance

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 2, *Safety, ergonomics and general requirements*.

This first edition of ISO 19014-1, together with ISO 19014-2, ISO 19014-3, ISO 19014-4 and ISO/TS 19014-5, cancels and replaces ISO 15998 and ISO/TS 15998-2, which have been technically revised.

The main changes compared to the previous documents are as follows:

— method for determination of performance levels and machine control system safety analysis,

— additional requirements for mobile machines,

— environmental test requirements for components of safety controls systems, and

— requirements for software validation and verification of machine performance levels.

This corrected version of ISO 19014-1:2018 incorporates the following corrections:

— in 4.2 c) 2), 4.2 d) 1), 6.1 and Annex C, the cross-references to the steps defined in 4.2 have been corrected.

A list of all parts in the ISO 19014-series can be found on the ISO website. At the time of publication of this document, Part 2, *Design and evaluation of safety-related machine control systems*, Part 4, *Design and evaluation of software and transmission for safety related parts of the control system*, and Part 5, *Tables of performance levels*, are under development.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

