

TECHNICAL REPORT

ISA-TR101.02-2019

HMI Usability and Performance

Approved 24 June 2019

ISA-TR101.02-2019, HMI Usability and Performance

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Foreword

The ISA101 standards development committee was established by ISA's Standards & Practices to create standards and technical reports for computer-based human-machine interfaces (HMI) for the process industries. In 2015, the committee's first standard was approved by the American National Standards Institute and published as ANSI/ISA-101.01-2015, *Human Machine Interfaces for Process Automation Systems*. Starting in late 2015, the ISA101 committee established working groups to produce technical reports to augment the standard with additional rationale, usage guidelines, and examples in different areas of human-machine Interfaces. Four technical reports are being created by these working groups:

- WG1 – HMI Philosophy, Style Guide & Design Guide
- WG2 – HMI Usability and Performance
- WG3 – HMI for Mobile Platforms
- WG4 – HMI for On-Machine Applications

Each technical report is intended to be a stand-alone document. To minimize repetition, the technical reports have cross references.

This technical report (TR), ISA-TR101.02-2019, is designed to provide guidance, rationale, and examples for those with a need for understanding and application of ISA-101 for usability and performance.

ISA-TR101.02 is organized into two parts. The first four clauses are introductory in nature. The main body (Clauses 5-7) present information and examples on how sections of the HMI lifecycle activities described in the ISA-101 standard apply to the usability and performance of the HMI. To facilitate use of this TR as an extension of the standard, Clauses 5-7 refer to the same lifecycle activities in both the standard and this TR.

Readers should be aware that following the recommended guidance in this TR will not necessarily ensure that HMI problems will be avoided. It will, however, help to identify and address HMI specification, design, implementation, and management opportunities important to the usability and performance of the HMI. It may also help minimize performance or usability issues that could complicate and frustrate an operator's awareness, understanding, and response to abnormal situations.

The guidance as presented in this document is general in nature and should be applied to each system as appropriate by those knowledgeable in the given manufacturing processes and control systems. Selection of activities and practices for a given system is the responsibility of the users and/or support staff of the system.

It is intended that TR will be updated over time, as experience is gained. As such, while the general format of this guidance is expected to remain relatively stable, the specifics of its application and specific solutions are expected to evolve. ISA welcomes and encourages readers to send suggestions and input to improve the content of this document to standards@isa.org.

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