

Principles and Process for Developing Icons for Electronic Displays

RATIONALE

The following document provides principles and a procedure for developing icons that are consistent with SAE J1362 and other ISO-registered or ISO-compliant symbols. Following this process ensures the fidelity of icons displayed on electronic displays are retained in order to improve usability of off-road work machines.

1. SCOPE

SAE J3113 provides principles and a process for developing icons for use in electronic displays related to off-road work machines as stated defined in SAE J1116. Following the process ensures that icons are derived from ISO-registered graphical symbols or ISO-compliant non-registered graphical symbols.

1.1 Purpose

Off-road work machines increasingly use electronic displays for setting up, controlling, and monitoring functionality.

Communication is enhanced by maintaining harmony between icons and symbols for the same functions. By maintaining this harmony, the operator is more likely to be familiar with and conceptualize these icons and symbols. Having a process for developing icons ensures their fidelity with the original/corresponding symbols.

There are currently limited resources that provide guidance for developing icons for use on electronic displays and none that could be found specifically related to off-road work machines. The following document provides principles and a procedure for developing icons that are consistent with SAE J1362 and other ISO-registered or ISO-compliant symbols.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publication

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606- 7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J1362 Graphical Symbols for Operator Controls and Displays on Off-Road Self-Propelled Work Machines

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SAE WEB ADDRESS:

Full document details: SAE J3113_202103

For more information on this standard, visit
https://www.sae.org/standards/content/J3113_202103

Documents

Document Sharing Hub

2.1.2 ISO/IEC Publications

Copies of these documents are available online at <http://webstore.ansi.org/>.

IEC 80416-1	Basic principles for graphical symbols for use on equipment - Part 1 Creation of graphical symbols for registration
ISO 80416-2	Basic principles for graphical symbols for use on equipment - Part 2 Form and use of arrows
IEC 80416-3	Basic principles for graphical symbols for use on equipment - Part 3 Guidelines for the application of graphical symbols
ISO 80416-4	Basic principles for graphical symbols for use on equipment - Part 4 Guidelines for the adaptation of graphical symbols for use on screens and displays (icons)
ISO 11581	Information technology - User interface icons all parts
ISO 17724	Graphical symbols - Vocabulary
ISO 7000	Graphical symbols for use on equipment - Registered symbols IEC 60417
ISO 14861	Graphic technology - Requirements for colour soft proofing systems
ISO 9186-1	Graphical symbols - Test methods - Part 1: Method for testing comprehensibility
ISO 9186-2	Graphical symbols - Test methods - Part 2: Method for testing perceptual quality
ISO 9186-3	Graphical symbols - Test methods - Part 3: Method for testing symbol referent association
ISO 9241-303	Ergonomics of human-system interaction - Part 303: Requirements for electronic visual displays

3. DEFINITIONS

For the purpose of this document, the following definitions apply. Some of these definitions have been adopted from ISO documents, with others specific to this SAE document.

3.1 ELECTRONIC DISPLAY

Device capable of visibly communicating machine information and presenting images, text, or video transmitted electronically.

3.2 GRAPHICAL SYMBOL

A visually perceptible figure used to transmit information independent of language.

3.3 ICON

A digitized (pixelated) representation of a graphical symbol, usually used on a reconfigurable electronic display screen or graphical user interface (GUI).

3.4 ISO-COMPLIANT SYMBOL

Graphical symbol conforming to requirements of IEC 80416-1 and ISO 80416-2.

3.5 ISO-REGISTERED SYMBOL

Graphical symbol that has been approved and assigned a registration number by ISO or IEC. Registered symbols are found in ISO 7000 and IEC 60417. They can be viewed/searched for on the ISO online browsing website: www.iso.org