

ICS 35.240.99; 53.100
CCS P 97



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 35484.1-2017

**Earth-moving machinery and mobile road construction
machinery -- Worksite data exchange -- Part 1: System
architecture**

(English Translation)

Issued on: December 29, 2017

Implemented on: July 1, 2018

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China, Standardization
Administration of the People's Republic of China**

Table of Contents

Preface
Introduction
1 Scope
2 Normative references
3 Terms and definitions
3.1 General Terms Related to Information Processing
3.2 Site specific terms for data exchange
3.3 Terms related to data element specifications and standards
3.4 Generalized schema Site data exchange terms
4 Target service
5 Use GB/T 35484 this part of the site data exchange method
5.1 Principle
5.2 Data exchange process
5.3 Application
6 Generalized site data exchange mode
6.1 Generalized site data exchange model concept
6.2 Generalized site data exchange mode function
6.3 Generalized site data exchange mode description
Appendix A (normative) GB/T 35484 application schema and data dictionary extensions
Appendix B (informative) using GB/T 35484 create site data dictionary
Appendix C (informative) General schema Site data exchange related Figure
Appendix D (informative) GB/T 35484 application examples --- Machine Construction
Appendix E (Informative) Process Modeling (Typical Example)
Appendix F (Informative) Process Modeling (Typical Example)
References

Foreword

GB/T 35484 "earthmoving machinery and mobile road construction machinery site data exchange" is divided into two parts.

--- Part 1. System architecture;

--- Part 2. Data dictionary.

This section GB/T 35484 Part 1.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses the translation method identical with ISO 15143-1:2010 "Earth-moving machinery and mobile road construction machinery site data exchange Part 1. System architecture. " the documents of our country that are consistent with the corresponding international documents that are normative references in this section are as follows.

Earth - moving machinery basic type identification, terms and definitions (ISO 6165:2006, IDT);

--- GB/T 9387.1-1998 Information Technology - Open Systems Interconnection Basic Reference Model Part 1. Basic model (idt ISO/IEC 7498-1:1994);

--- GB/T 18391 (all parts) Information Technology Metadata Registration System (MDR) [ISO/IEC 11179 Minute)];

--- GB/T 23577-2009 road construction and maintenance of basic types of machinery and equipment identification and description (ISO 22242:2005, IDT).

This section made the following editorial changes.

--- Increasing the normative references "ISO 15143-2 earthmoving machinery and mobile road construction machinery site data exchange Part 2. Data dictionary (Earth-moving machinery and mobileroadconstruction machinery-Worksitedataexchange-Part 2: Datadictionary) to modify editorial errors of international standards.

This part is proposed by China Machinery Industry Federation.

This part of the earthwork machinery standardization Technical Committee (SAC/TC334) centralized.

This section is responsible for the drafting unit. XCMG Construction Machinery Co., Ltd. Xuzhou Construction Machinery Institute of Jiangsu, Guangzhou Electric Locomotive Co., Ltd.

Secretary, Shandong Yuanyuan Petrochemical Co., Ltd., Shandong Lingong Construction Machinery Co., Ltd., Xiamen Xiamen Engineering Machinery Co., Ltd., Tianjin Engineering Machinery Machinery Research Institute and so on.

This section participates in the drafting unit. Guangxi Liugong Machinery Co., Ltd.

Introduction

The rapid development of information technology and measurement technology has been used to develop web site information systems to support the execution of construction machinery jobs in the form of control. Such systems have begun to introduce construction projects, including earthworks and road construction.

Website information systems used must be able to easily and reliably exchange data between machines, measuring equipment and website information systems. When a construction project started with web site information system support and introduced a system of the appropriate specifications for the machines and measuring equipment used by the project.

The duration of the project is transferred to another project after use. Therefore, it is possible to exchange electronic data of construction machinery and measuring equipment for the system is a necessary condition for the use of the site's information system.

In addition, many stakeholders include not only webmasters and machine operators, but also company sign-ups, machine owners, and items Project owners must have the project to use and create measurement data, complete work data, machine control data for different information systems System, and can exchange electronic data.

Web site information systems, construction machinery and measuring equipment in use, the name and definition of data, data formats are often different, hinder the use of these electronic data for data exchange - a serious impediment to the development and use of website information systems.

GB/T 35484 is to solve the above problems, to ensure data interoperability.

Note: Includes the definition of real-time machine status data. These data are not used for real-time control of the machine (but not prohibited).

Its benefits include greater freedom for product developers and users. Construction machinery manufacturers, measuring equipment and information systems will be Benefit from these benefits, the design of products in line with GB/T 35484 standards to reduce development risk, reduce product development cycle by reducing into this, you can efficiently develop and maintain the system. Without this standard, connecting such information systems manufactured by different manufacturers and corresponding development facilities Preparation is very difficult and extremely dangerous. Another reason for the high cost is that different standard systems require constant hiring of a large number of technicians Hair and maintenance products, including the introduction of new versions.

The application of GB/T 35484 can be expanded by expanding the ownership of all manufacturers, through them to develop and sell with other companies System connected products. According to the provisions of GB/T 35484, by allowing each manufacturer to sell products to more users, product development the cost of goods will be greatly reduced, while improving the efficiency of maintenance work.

The application of this standard will help the contractor to reduce costs and improve product quality by expanding product range and choosing between single and multiple suppliers the amount. In the past, system development was characterized by a general lack of competitiveness because each user could only introduce products that met their existing

system specifications and could not Do not continue to rely on its developers to maintain. GB/T 35484 application will enhance competition among manufacturers, reduce costs and improve the development of the Department Unified level.

Expanding the use of website information systems will allow the use of new and more advanced information technology-equipped products. For construction machinery and testing Volume equipment manufacturers, will develop new business opportunities to expand markets. One example is pile-less construction, electronic construction machinery with ancillary systems the data replaces the stakes to indicate the operator's target position. The other is the development of construction machinery blade control automation.

Owners of construction projects, including central government, regional government and private sector users will enjoy lower construction costs and higher quality.

These benefits lead to greater competition, increased geometric tolerances, and improved precision control of data transmission and finished products.

Earth-moving machinery and mobile road construction machinery Site data exchange - Part 1. System architecture

1 Scope

This part of GB/T 35484 specifies the use of earth-moving machinery as defined in ISO 6165 and road machinery as defined in ISO 22242 A system of data exchange similar to earthwork. This section also applies to workers for the purpose of mechanical service (see Chapter 4) related services Data exchange, and gives the definition of terms related to site data exchange.

Covers only OSI reference model application layer complying with ISO/IEC 7498-1 and does not cover presentation, session, transport, network, data link or Physical layer model. Agreements related to these layers (selection of applicable specifications, standards, etc.) will therefore require data exchange.

This section GB/T 35484 applies to the following site data exchange.

a) Information exchange between contractor and venue information system (implementation phase).

1) Information sent by the contractor to the venue information system, such as basic project data, design data and operating conditions;

2) Information sent by the venue information system to the contractor, such as site data that can be received and machine job records.

b) Information exchange between venue information system and machine.

1) information sent by the venue information system to the machine, such as mission data