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GB/T 47112-2026

**Classification for the intelligent operation of mobile mining
machinery**

移动式矿山机械设备智能化分级

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee on Standardization of Mining Machinery (SAC/TC88). This document was drafted by: Jiangsu XCMG National Heavy Machinery Laboratory Technology Co., Ltd., and Luoyang Mining Machinery Engineering Design & Research Institute Co., Ltd. Company, Shandong Tianhe Technology Co., Ltd., Shibang Industrial Technology Group Co., Ltd., Jiangxi Xintong Machinery Manufacturing Co., Ltd., Shanxi Tai Heavy Intelligent Mining Equipment Technology Co., Ltd., Pingxiang University, Zhejiang Wujing Machinery Manufacturing Co., Ltd., Jiangsu Lingyang Machinery Co., Ltd., Hunan Chuang Yuangao New Machinery Co., Ltd., Zhengzhou Coal Mining Machinery Group Co., Ltd., Zhengzhou Hengda Intelligent Control Technology Co., Ltd., Shandong Sheng Yuan Industrial Equipment Co., Ltd., Guochuang Intelligent Mining Equipment Research Institute (Luoyang) Co., Ltd., Hubei Tianteng Heavy Machinery Co., Ltd. Nanchang Mining Machinery Group Co., Ltd., Zhangjiakou Xuanhua Huatai Mining and Metallurgical Machinery Co., Ltd., and Guangdong Yinggeer Geological Equipment Technology Co., Ltd. Company, EasyControl Intelligent Driving Technology Co., Ltd., Shaanxi Taihe Intelligent Drilling Co., Ltd., Liyang Zhongcai Heavy Machinery Co., Ltd., CITIC Heavy Industries Machinery Co., Ltd. Limited Liability Company. The main drafters of this document are. Shan Zenghai, Wang Meina, Hu Xilei, Tian Shengli, Ma Binbin, Li Xiaoxiang, Yue Haifeng, He Yu, and Liu Guoxiang. Ma Shunxi, Yan Wugang, Zhang Jiye, Li Chunpeng, Duan Dongtao, Yuan Long, Li Zhonglin, Lei Jian, Ren Qing, Liu Xuyong, Lin Qiao, Wang Yihong, Tan Zhizhong Zhang Shengqi, Guo Maimai, Dai Jianlong. Intelligent classification of mobile

mining machinery and equipment

1 Scope

GB/T 47112-2026 is the Chinese national standard covering the levels of autonomy for a mining truck, loader or drill - from operator assistance through remote operation to full autonomy, with what the machine must perceive and decide at each level and what remains with a person. It is the mining counterpart of the automated driving levels, and it belongs with the intelligent coal mine architecture standard GB/T 47461-2026. First edition. It was issued on 28 January 2026 and has been in force since 1 August 2026, as a first edition. The document is under the responsibility of the China Machinery Industry Federation. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the grading principles, level classifications, and technical requirements for the intelligentization of mobile mining machinery and equipment. This document applies to the classification of intelligent operation of mobile mining machinery and equipment, including construction machinery, agricultural machinery, fire-fighting machinery, and other mobile machinery. This is a reference for the intelligent classification of mechanized operations. Note

- 1.The intelligent operations described in this document do not include mobile mining machinery traveling on roads. "Roads" refers to highways, urban roads, and roads under the jurisdiction of the unit. Areas that allow public motor vehicle traffic, including squares, public parking lots, and other places for public passage. Note
- 2.This document does not cover the intelligentization of non-operational functions (such as infotainment systems for operators, general on-site monitoring, etc.).

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 40429 Classification of Driving Automation for Motor Vehicles

3 Terms and Definitions

The terms and definitions defined in GB/T 40429 and the following terms and definitions apply to this document.

3.1 Trackless mining machinery and equipment with self-propelled devices.

Note. For the specific scope of mobile mining machinery and equipment, please refer to Appendix A.

3.2 Intelligent operation Mobile mining machinery and equipment continuously perform some or all of the dynamic operation tasks in an automatic manner.

3.3 A device consisting of the hardware and software required to achieve intelligent operation.

3.4 An automated work system performs some or all of the dynamic work tasks under specific design and operating conditions to achieve intelligent work processes. ability.

Note. An automated operation system can implement one or more intelligent operation functions, each function corresponding to a specific level of intelligent operation and design operating conditions. Related. In order to accurately describe the intelligent operation functions (except for level 5), it is necessary to specify both the level of intelligent operation and the design operating conditions.

3.5 dynamic operating task All operations performed by mobile mining machinery and equipment to complete its designated functions.

Note. Operation includes, but is not limited to, perception of the chassis and equipment's own position and status, perception of the working environment, cognition and decision-making, and dynamic operation control.