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**Application of Internet of things - General requirements for
smart oil field**

泛在物联应用 智慧油田总体技术要求

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Foreword

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1. Structure and Drafting Rules of Standardization Documents" Drafting. Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents. This document is under the jurisdiction of the National Communication Standardization Technical Committee (SAC/TC485). This document is drafted by: Datang Telecom Technology Industry Group, China Academy of Information and Communications Technology, Huawei Technologies Co., Ltd., Beijing Post and Telecommunications the University. The main drafters of this document. Xu Hui, Du Jiatong, Chen Yi, Hu Bo. General technical requirements for ubiquitous IoT applications in smart oil fields

1 Scope

GB/Z 41291-2022 is the Chinese national standard on application of internet of things - general requirements for smart oil field, in the field of telecommunications and audio-video engineering. The /Z suffix marks it as a guiding technical document: it does not prescribe requirements that can be certified against, but sets out the technique, the method or the state of the art that the standards bodies recommend following. It was issued on 9 March 2022 by the State Administration for Market Regulation; Standardization Administration of China. As a guiding technical document it carries no separate date of entry into force: it applies from publication. Classification: ICS 33.020, CCS L67. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the smart oilfield application architecture, interface definition, business process, application requirements for perception extension layer, network layer,

and industry service support and safety requirements. This document applies to smart oilfields.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document. YD/T 1806-2008 Technical requirements for IP-based remote video surveillance equipment

3 Terms and Definitions

There are no terms and definitions that need to be defined in this document.

4 Abbreviations

The following abbreviations apply to this document. RTU Remote Terminal Unit (RemoteTerminalUnit) 3G 3rd Generation Mobile Communication System (3Generation) 4G 4th Generation Mobile Communication System (4Generation)

5 Application Definition

5.1 Overview The relationship between the upstream and downstream industrial chains of the petroleum industry is very close, with a very distinct industrial chain structure and industrial chain information transmission effect. In the middle, the upstream business includes the exploration and development of crude oil and natural gas, the middle reaches mainly the storage and transportation of oil and gas, and the downstream covers refining, chemical Process business such as industrial and natural gas processing, as well as product distribution and sales business such as gas station retail. The main production and operation activity packages of the oil industry Including oil and gas exploration, oil and gas field development, drilling engineering, ground construction, petrochemical, storage, transportation and sales, as well as operation and management. Figure 1 is oil production business process.