

Telecommunication and IT systems for drilling units

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Foreword

The NORSOK standards are developed by the Norwegian petroleum industry to ensure adequate safety, value adding and cost effectiveness for petroleum industry developments and operations. Furthermore, NORSOK standards are, as far as possible, intended to replace oil company specifications and serve as references in the authorities' regulations.

The NORSOK standards are normally based on recognised international standards, adding the provisions deemed necessary to fill the broad needs of the Norwegian petroleum industry. Where relevant, NORSOK standards will be used to provide the Norwegian industry input to the international standardisation process. Subject to development and publication of international standards, the relevant NORSOK standard will be withdrawn.

The NORSOK standards are developed according to the consensus principle generally applicable for most standards work and according to established procedures defined in NORSOK A-001.

The NORSOK standards are prepared and published with support by The Norwegian Oil Industry Association (OLF) and Federation of Norwegian Manufacturing Industries (TBL).

NORSOK standards are administered and published by Standards Norway.

Introduction

This revision replaces revision 1. This NORSOK standard is updated in accordance with revision 3 of NORSOK T-100. The standard is expanded and also covers IT systems.

This NORSOK standard is published without marking of changes, compared to Rev. 1, as the modifications are considerable.

1 Scope

The purpose of this NORSOK standard is to outline the necessary data- and telecommunication services needed onboard a drilling unit in order to fulfil the operator's requirements for voice and data communication between the drilling unit and the operator's communication networks, regardless of distance to shore. It also forms the basis for achieving cost reduction by combining drilling contractor's and operator's needs for similar services.

This NORSOK standard does not address any aspects regarding the drilling unit's own operational needs or any requirement with which the drilling unit shall comply in order to meet mandatory requirements. The complementary onshore facilities are not dealt with in this NORSOK standard.

2 Normative and informative references

The following standards include provisions and guidelines which, through reference in this text, constitute provisions and guidelines of this NORSOK standard. Latest issue of the references shall be used unless otherwise agreed. Other recognized standards may be used provided it can be shown that they meet or exceed the requirements and guidelines of the standards referenced below.

2.1 Normative references

IEEE 802.11,	Information technology – Telecommunication & Information Exchange Between Systems – LAN/MAN – Specific Requirements – Part 11: Wireless local area network.
IEEE 802.3,	Information technology – Telecommunication & Information Exchange Between Systems – LAN/MAN – Specific Requirements – Part 3: Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Access Method and Physical Layer Specifications.
ITU-T Rec. G.821,	Errors performance of an international digital connection operating at a bit rate below the primary rate and forming part of an integrated services digital network (ISDN).
NORSOK T-100,	Telecom subsystems.
NS 5820,	Supplier documentation of equipment.

2.2 Informative references

IEEE 802.1v,	Information technology – Telecommunication & Information Exchange Between Systems – LAN/MAN – Specific Requirements – Part 1v: VLAN classification by protocol and port.
ITU-T Rec. G.703,	Physical/electrical characteristics of hierarchical digital interfaces.

3 Terms, definitions and abbreviations

For the purposes of this NORSOK standard, the following terms, definitions and abbreviations apply.

3.1 Terms and definitions

3.1.1

can

verbal form used for statements of possibility and capability, whether material, physical or casual

3.1.2

C-band

satellite frequency band 6 GHz uplink/the band 4 GHz downlink

3.1.3

central equipment

equipment which is the operational hub of individual subsystems

3.1.4**contractor**

operator providing various services (i.e. MWD, cementing, telecommunication provider) to the operator and drilling contractor

3.1.5**drilling contractor**

operator providing the drilling unit and associated services to the operator

3.1.6**drilling unit**

vessel furnished with drilling equipment which main objective is to drill exploration/production wells

3.1.7**equipment**

individual functional unit

3.1.8**Ku-band**

satellite frequency band 14 GHz uplink/the band 12 GHz downlink

3.1.9**may**

verbal form used to indicate a course of action permissible within the limits of this NORSOK standard

3.1.10**operator**

operating oil company

3.1.11**shall**

verbal form used to indicate requirements strictly to be followed in order to conform to this NORSOK standard and from which no deviation is permitted, unless accepted by all involved parties

3.1.12**should**

verbal form used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required

3.1.13**subsystem**

assembly of equipment within complete systems, which fulfils a certain operational task

3.2 Abbreviations

DDI	direct dial in
GPRS	general packet radio service
GSM	global system for mobile communication
IEEE	Institute for Electrical and Electronic Engineers
IP	internet protocol
IT	information technology
ITU-T	International Telecommunication Union - Telecommunication Standardisation Sector
LAN	local area network
MWD	measurement while drilling
N/A	not applicable
PABX	private automatic branch exchange
PL	phase lock (to non-audible code)
Q.SIG	Q-signalling
RX	receive
SOIL	secure oil information link
TX	transmit