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**Maritime navigation and radiocommunication equipment and systems – Digital
interfaces –
Part 450: Multiple talkers and multiple listeners – Ethernet interconnection**

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**Maritime navigation and radiocommunication equipment and systems – Digital interfaces –
Part 450: Multiple talkers and multiple listeners – Ethernet interconnection**

CONTENTS

| | |
|--|----|
| FOREWORD..... | 5 |
| 1 Scope..... | 7 |
| 2 Normative references | 7 |
| 3 Terms and definitions | 8 |
| 4 General network and equipment requirements | 11 |
| 4.1 Network topology example..... | 11 |
| 4.2 Basic requirements | 12 |
| 4.2.1 Requirements for equipment to be connected to the network..... | 12 |
| 4.2.2 Additional requirements for network infrastructure equipment..... | 12 |
| 4.3 Network function (NF) requirements..... | 13 |
| 4.3.1 General requirements..... | 13 |
| 4.3.2 Maximum data rate requirements..... | 13 |
| 4.3.3 Error logging function..... | 13 |
| 4.4 System function (SF) requirements..... | 15 |
| 4.4.1 General requirements..... | 15 |
| 4.4.2 Assignment of unique system function ID (SFI) | 15 |
| 4.4.3 Implementing configurable transmission groups | 15 |
| 4.5 Serial to network gateway function (SNGF) requirements | 16 |
| 4.5.1 General requirements..... | 16 |
| 4.5.2 Serial line output buffer management | 16 |
| 4.5.3 Datagram output requirements | 17 |
| 4.6 Other network function (ONF) requirements | 17 |
| 5 Low level network requirements | 17 |
| 5.1 Electrical and mechanical requirements | 17 |
| 5.2 Network protocol requirements | 19 |
| 5.3 IP Address assignment for equipment..... | 19 |
| 5.4 Multicast address range | 19 |
| 6 Transport layer specification | 19 |
| 6.1 General..... | 19 |
| 6.2 UDP messages | 20 |
| 6.2.1 UDP multicast protocol..... | 20 |
| 6.2.2 Use of multicast addresses and port numbers | 20 |
| 6.2.3 UDP checksum | 21 |
| 6.2.4 Datagram size..... | 22 |
| 7 Application layer specification | 22 |
| 7.1 Datagram header | 22 |
| 7.1.1 Valid header | 22 |
| 7.1.2 Error logging..... | 22 |
| 7.2 General IEC 61162-1 sentence transmissions..... | 22 |
| 7.2.1 Application of this protocol | 22 |
| 7.2.2 Types of messages for which this protocol can be used | 22 |
| 7.2.3 TAG block parameters for sentences transmitted in the datagram | 22 |
| 7.2.4 Requirements for processing incoming datagrams | 24 |
| 7.2.5 Error logging..... | 24 |
| 7.3 Binary image transfer using UDP multicast | 24 |
| 7.3.1 Application of this protocol | 24 |

| | | |
|-----------------------|---|----|
| 7.3.2 | Binary image structure | 25 |
| 7.3.3 | Header | 25 |
| 7.3.4 | Binary image descriptor structure | 27 |
| 7.3.5 | Binary image data fragment..... | 28 |
| 7.3.6 | Sender process for binary image transfer | 28 |
| 7.3.7 | Receiver process for binary image transfer | 30 |
| 7.3.8 | Other requirements | 31 |
| 7.3.9 | Error logging..... | 32 |
| 8 | Methods of test and required results | 32 |
| 8.1 | Test set-up and equipment | 32 |
| 8.2 | Basic requirements | 33 |
| 8.2.1 | Equipment to be connected to the network..... | 33 |
| 8.2.2 | Network infrastructure equipment | 33 |
| 8.3 | Network function (NF) | 33 |
| 8.3.1 | Maximum data rate | 33 |
| 8.3.2 | Error logging function..... | 33 |
| 8.4 | System function (SF)..... | 34 |
| 8.4.1 | General | 34 |
| 8.4.2 | Assignment of unique system function ID (SFI) | 34 |
| 8.4.3 | Implementing configurable transmission groups | 34 |
| 8.5 | Serial to network gateway function (SNGF) | 34 |
| 8.5.1 | General | 34 |
| 8.5.2 | Serial line output buffer management | 34 |
| 8.5.3 | Datagram output | 35 |
| 8.6 | Other network function (ONF)..... | 35 |
| 8.7 | Low level network | 35 |
| 8.7.1 | Electrical and mechanical requirements..... | 35 |
| 8.7.2 | Network protocol..... | 35 |
| 8.7.3 | IP address assignment for equipment..... | 35 |
| 8.7.4 | Multicast address range | 36 |
| 8.8 | Transport layer..... | 36 |
| 8.9 | Application layer | 36 |
| 8.9.1 | Application..... | 36 |
| 8.9.2 | Datagram header | 36 |
| 8.9.3 | Types of messages | 36 |
| 8.9.4 | TAG block parameters..... | 37 |
| 8.10 | Error logging | 37 |
| 8.11 | Binary image transfer using UDP multicast | 38 |
| 8.11.1 | Sender process test | 38 |
| 8.11.2 | Receiver process test..... | 39 |
| 8.11.3 | Image descriptor test | 39 |
| 8.11.4 | Image transfer error logging | 39 |
| Annex A (normative) | Classification of IEC 61162-1 talker identifier mnemonics and sentences | 40 |
| Annex B (informative) | TAG block example..... | 46 |
| Annex D (informative) | Network and system design guidance..... | 53 |
| Annex C (normative) | Reliable transmission of command-response pair messages..... | 48 |
| Bibliography | | 61 |

| | |
|---|----|
| Figure 1 – Network topology example..... | 12 |
| Figure 2 – Ethernet frame example for a SBM from a rate of turn sensor..... | 20 |
| Figure C.1 – Command response communications..... | 48 |
| Figure C.2 – State diagram | 50 |
| Figure D.1 – General system design architecture..... | 53 |
| Figure D.2 – Example of ship-shore communication architecture..... | 54 |
| Figure D.3 – Security infrastructure | 55 |
| Figure D.4 – Decoupled system..... | 57 |
| Figure D.5 – Loosely coupled system | 57 |
| Figure D.6 – Strongly coupled system | 58 |
| Table 1 – Syslog message format | 14 |
| Table 2 – Syslog error message codes..... | 15 |
| Table 3 – Interfaces, connectors and cables..... | 18 |
| Table 4 – Destination multicast addresses and port numbers | 21 |
| Table 5 – Destination multicast addresses and port numbers for binary data transfer | 21 |
| Table 6 – Destination multicast addresses and port numbers for other services..... | 21 |
| Table 7 – Description of terms | 25 |
| Table 8 – Binary image structure..... | 25 |
| Table 9 – Header format | 26 |
| Table 10 – Binary image descriptor format..... | 27 |
| Table 11 – Examples of MIME content type for DataType codes | 28 |
| Table 12 – Binary image data fragment format..... | 28 |
| Table A.1 – Classification of IEC 61162-1 talker identifier mnemonics..... | 40 |
| Table A.2 – Classification of IEC 61162-1 sentences | 42 |
| Table B.1 – Defined parameter-codes | 47 |
| Table D.1 – Overview of possible security functions | 56 |
| Table D.2 – Network failure propagation possibilities | 59 |

INTERNATIONAL ELECTROTECHNICAL COMMISSION

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – DIGITAL INTERFACES –

Part 450: Multiple talkers and multiple listeners – Ethernet interconnection

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- amended.

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MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – DIGITAL INTERFACES –

Part 450: Multiple talkers and multiple listeners – Ethernet interconnection

1 Scope

This part of IEC 61162 specifies interface requirements and methods of test for high speed communication between shipboard navigation and radiocommunication equipment as well as between such systems and other ship systems that need to communicate with navigation and radio-communication equipment. This part of IEC 61162 is based on the application of an appropriate suite of existing international standards to provide a framework for implementing data transfer between devices on a shipboard Ethernet network.

This standard provides a higher speed and higher capacity alternative to the IEC 61162-1 and IEC 61162-2 standards while retaining these standards' basic data format. This standard provides a higher data capacity than IEC 61162-3.

This standard specifies an Ethernet based bus type network where any listener may receive messages from any sender with the following properties.

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- This standard is limited to protocols for equipment (Network nodes) connected to a single Ethernet network consisting only of OSI level one or two devices and cables (Network infrastructure).
- This standard provides requirements only for equipment interfaces. By specifying protocols for transmission of IEC 61162-1 sentences and general binary image data these requirements will guarantee interoperability between equipment implementing this standard as well as a certain level of safe behaviour of the equipment itself.
- This standard permits equipment using other protocols than those specified in this standard to share a network infrastructure provided that it is supplied with interfaces which satisfy the requirements described for ONF (see 4.6).
- This standard does not contain any system requirements other than the ones that can be inferred from the sum of individual equipment requirements. Thus, to ascertain system properties that cannot be derived from equipment requirements alone, additional analysis or standards will be required. In particular, this applies to requirements to maintain system functionality in the face of a single point failure in equipment or networks. Informative Annex D contains guidance on how to address such issues.

2 Normative references

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IEC 61996-1, *Maritime navigation and radiocommunication equipment and systems – Shipborne voyage data recorder (VDR) – Part 1: Performance requirements, methods of testing and required test results*

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ISOC RFC 1918, *Address Allocation for Private Internets, Best Current Practice BCP0005*

ISOC RFC 2474, *Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers*

ISOC RFC 5000, *Internet Official Protocol Standards, Standard 0001*

ISOC RFC 5227, *IPv4 Address Conflict Detection*

ISOC RFC 5424, *The Syslog Protocol*

NMEA 0183:2008, *Standard for interfacing marine electronic devices, Version 4.00*

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FINAL VERSION

**Maritime navigation and radiocommunication equipment and systems – Digital interfaces –
Part 450: Multiple talkers and multiple listeners – Ethernet interconnection**

CONTENTS

| | |
|--|----|
| FOREWORD..... | 5 |
| 1 Scope..... | 7 |
| 2 Normative references | 7 |
| 3 Terms and definitions | 8 |
| 4 General network and equipment requirements | 11 |
| 4.1 Network topology example..... | 11 |
| 4.2 Basic requirements | 12 |
| 4.2.1 Requirements for equipment to be connected to the network..... | 12 |
| 4.2.2 Additional requirements for network infrastructure equipment..... | 12 |
| 4.3 Network function (NF) requirements..... | 13 |
| 4.3.1 General requirements..... | 13 |
| 4.3.2 Maximum data rate requirements..... | 13 |
| 4.3.3 Error logging function..... | 13 |
| 4.4 System function (SF) requirements..... | 15 |
| 4.4.1 General requirements..... | 15 |
| 4.4.2 Assignment of unique system function ID (SFI) | 15 |
| 4.4.3 Implementing configurable transmission groups | 15 |
| 4.5 Serial to network gateway function (SNGF) requirements | 16 |
| 4.5.1 General requirements..... | 16 |
| 4.5.2 Serial line output buffer management | 16 |
| 4.5.3 Datagram output requirements | 17 |
| 4.6 Other network function (ONF) requirements | 17 |
| 5 Low level network requirements | 17 |
| 5.1 Electrical and mechanical requirements | 17 |
| 5.2 Network protocol requirements | 19 |
| 5.3 IP Address assignment for equipment..... | 19 |
| 5.4 Multicast address range | 19 |
| 6 Transport layer specification | 19 |
| 6.1 General..... | 19 |
| 6.2 UDP messages | 20 |
| 6.2.1 UDP multicast protocol..... | 20 |
| 6.2.2 Use of multicast addresses and port numbers | 20 |
| 6.2.3 UDP checksum | 21 |
| 6.2.4 Datagram size..... | 22 |
| 7 Application layer specification | 22 |
| 7.1 Datagram header | 22 |
| 7.1.1 Valid header | 22 |
| 7.1.2 Error logging..... | 22 |
| 7.2 General IEC 61162-1 sentence transmissions..... | 22 |
| 7.2.1 Application of this protocol | 22 |
| 7.2.2 Types of messages for which this protocol can be used | 22 |
| 7.2.3 TAG block parameters for sentences transmitted in the datagram | 22 |
| 7.2.4 Requirements for processing incoming datagrams | 24 |
| 7.2.5 Error logging..... | 24 |
| 7.3 Binary image transfer using UDP multicast | 24 |
| 7.3.1 Application of this protocol | 24 |

| | | |
|-----------------------|---|----|
| 7.3.2 | Binary image structure | 25 |
| 7.3.3 | Header | 25 |
| 7.3.4 | Binary image descriptor structure | 27 |
| 7.3.5 | Binary image data fragment..... | 28 |
| 7.3.6 | Sender process for binary image transfer | 28 |
| 7.3.7 | Receiver process for binary image transfer | 29 |
| 7.3.8 | Other requirements | 30 |
| 7.3.9 | Error logging..... | 32 |
| 8 | Methods of test and required results | 32 |
| 8.1 | Test set-up and equipment | 32 |
| 8.2 | Basic requirements | 32 |
| 8.2.1 | Equipment to be connected to the network..... | 32 |
| 8.2.2 | Network infrastructure equipment | 33 |
| 8.3 | Network function (NF) | 33 |
| 8.3.1 | Maximum data rate | 33 |
| 8.3.2 | Error logging function..... | 33 |
| 8.4 | System function (SF)..... | 33 |
| 8.4.1 | General | 33 |
| 8.4.2 | Assignment of unique system function ID (SFI) | 33 |
| 8.4.3 | Implementing configurable transmission groups | 34 |
| 8.5 | Serial to network gateway function (SNGF) | 34 |
| 8.5.1 | General | 34 |
| 8.5.2 | Serial line output buffer management | 34 |
| 8.5.3 | Datagram output | 34 |
| 8.6 | Other network function (ONF)..... | 34 |
| 8.7 | Low level network | 35 |
| 8.7.1 | Electrical and mechanical requirements..... | 35 |
| 8.7.2 | Network protocol..... | 35 |
| 8.7.3 | IP address assignment for equipment..... | 35 |
| 8.7.4 | Multicast address range | 35 |
| 8.8 | Transport layer..... | 35 |
| 8.9 | Application layer | 36 |
| 8.9.1 | Application..... | 36 |
| 8.9.2 | Datagram header | 36 |
| 8.9.3 | Types of messages | 36 |
| 8.9.4 | TAG block parameters..... | 36 |
| 8.10 | Error logging | 37 |
| 8.11 | Binary image transfer using UDP multicast | 37 |
| 8.11.1 | Sender process test | 37 |
| 8.11.2 | Receiver process test..... | 38 |
| 8.11.3 | Image descriptor test | 39 |
| 8.11.4 | Image transfer error logging | 39 |
| Annex A (normative) | Classification of IEC 61162-1 talker identifier mnemonics and sentences | 40 |
| Annex B (informative) | TAG block example..... | 46 |
| Annex D (informative) | Network and system design guidance..... | 53 |
| Annex C (normative) | Reliable transmission of command-response pair messages..... | 48 |
| Bibliography | | 61 |

| | |
|---|----|
| Figure 1 – Network topology example..... | 12 |
| Figure 2 – Ethernet frame example for a SBM from a rate of turn sensor..... | 20 |
| Figure C.1 – Command response communications..... | 48 |
| Figure C.2 – State diagram | 50 |
| Figure D.1 – General system design architecture..... | 53 |
| Figure D.2 – Example of ship-shore communication architecture..... | 54 |
| Figure D.3 – Security infrastructure | 55 |
| Figure D.4 – Decoupled system..... | 57 |
| Figure D.5 – Loosely coupled system | 57 |
| Figure D.6 – Strongly coupled system | 58 |
| Table 1 – Syslog message format | 14 |
| Table 2 – Syslog error message codes..... | 15 |
| Table 3 – Interfaces, connectors and cables..... | 18 |
| Table 4 – Destination multicast addresses and port numbers | 21 |
| Table 5 – Destination multicast addresses and port numbers for binary data transfer | 21 |
| Table 6 – Destination multicast addresses and port numbers for other services..... | 21 |
| Table 7 – Description of terms | 25 |
| Table 8 – Binary image structure..... | 25 |
| Table 9 – Header format | 26 |
| Table 10 – Binary image descriptor format..... | 27 |
| Table 11 – Examples of MIME content type for DataType codes | 28 |
| Table 12 – Binary image data fragment format..... | 28 |
| Table A.1 – Classification of IEC 61162-1 talker identifier mnemonics..... | 40 |
| Table A.2 – Classification of IEC 61162-1 sentences | 42 |
| Table B.1 – Defined parameter-codes | 47 |
| Table D.1 – Overview of possible security functions | 56 |
| Table D.2 – Network failure propagation possibilities | 59 |

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