

**65C/1365/NP**

NEW WORK ITEM PROPOSAL (NP)

PROPOSER: <b>Germany</b>	DATE OF PROPOSAL: <b>2025-08-28</b>
DATE OF CIRCULATION: <b>2025-09-12</b>	CLOSING DATE FOR VOTING: <b>2025-12-05</b>

IEC SC 65C : INDUSTRIAL NETWORKS	
SECRETARIAT: <b>France</b>	SECRETARY: <b>Mr Alexandre NABAIS</b>
NEED FOR IEC COORDINATION:	HORIZONTAL FUNCTION(S):
ASPECTS CONCERNED:	

TITLE OF PROPOSAL:

**Industrial networks – Fieldbus specifications – Part 2-100: Physical layer specification and service definition – Type 100 elements**☒ STANDARD☐ TECHNICAL SPECIFICATION☐ PUBLICLY AVAILABLE SPECIFICATION

PROPOSED PROJECT NUMBER: 61158-2-100

## SCOPE

(AS DEFINED IN ISO/IEC DIRECTIVES, PART 2, 14):

This document is applicable to process automation equipment using a 10BASE-T1L and 100BASE-T1L compliant Physical Layer (PHY). Ethernet-APL intrinsically safe profiles with different predefined entity or limitation parameters (for example voltage, current, power, capacitance, inductance, cable length) simplify the examination of the interconnection of different Ethernet-APL ports. Furthermore, this document is also applicable to factory and building automation equipment using a 10BASE-T1L and 100BASE-T1L compliant, and Power over Data Lines (PoDL) compliant Physical Layer (PHY) for non-intrinsically safe Ethernet installations.

NOTE In this document, the term single pair Ethernet (SPE) is used for PoDL compliant PHY. The following technical features are part of this document:

- topology with trunk/spur installation capability;
- 2-wire technology (full-duplex communication data rate of 10 Mbit/s and 100 Mbit/s);
- long distance (refers to cable lengths of several hundred meters, with spans up to 1 000 m);
- intrinsic safety (installation of Ethernet-capable field devices in hazardous areas);
- power supply to field devices over the same 2-wire cable used for data communication;
- Non-intrinsically safe Ethernet installation in factory, process and building automation.

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INCLUDING THE MARKET RELEVANCE AND WHETHER IT IS PROPOSED TO BE A HORIZONTAL STANDARD.

MARKET RELEVANCE SHOULD BE ADDRESSED BY INDICATING THE NEED FOR THE CORRESPONDING STANDARDS WORK AND ITS GLOBAL RELEVANCE (SEE ISO/IEC DIRECTIVES, PART 1 ANNEX C)

IF PROPOSED AS A HORIZONTAL STANDARD, IDENTIFY AS POSSIBLE, THE CORRESPONDING APPLICABLE GUIDE(S) AND ASSOCIATED ADVISORY COMMITTEE(S) (SEE GUIDE 108).

This approach is a huge step forward on converging the various physical layers Types in the IEC 61158-2 series. This document provides a neutral specification of the new advanced physical layer. The following documents are representative of potentially affected next editions: IEC 61784-1-x, IEC 61784-2-x, IEC 61918, IEC 61784-5-x.

PLEASE SELECT ANY UN SUSTAINABLE DEVELOPMENT GOALS (SDGs) THAT THIS DOCUMENT WILL SUPPORT. FOR MORE INFORMATION ON SDGs, PLEASE VISIT OUR WEBSITE AT [HTTPS://WWW.IEC.CH/SDG/](https://www.iec.ch/sdg/)

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|---|--|
| <input type="checkbox"/> GOAL 1: No Poverty   | <input type="checkbox"/> GOAL 10: Reduced Inequalities                   |
| <input checked="" type="checkbox"/> GOAL 2: Zero Hunger                             | <input type="checkbox"/> GOAL 11: Sustainable Cities and Communities     |
| <input checked="" type="checkbox"/> GOAL 3: Good Health and Well-being              | <input type="checkbox"/> GOAL 12: Responsible Consumption and Production |
| <input type="checkbox"/> GOAL 4: Quality Education                                  | <input checked="" type="checkbox"/> GOAL 13: Climate Action              |
| <input type="checkbox"/> GOAL 5: Gender Equality                                    | <input type="checkbox"/> GOAL 14: Life Below Water                       |
| <input checked="" type="checkbox"/> GOAL 6: Clean Water and Sanitation              | <input type="checkbox"/> GOAL 15: Life on Land                           |
| <input checked="" type="checkbox"/> GOAL 7: Affordable and Clean Energy             | <input type="checkbox"/> GOAL 16: Peace, Justice and Strong Institutions |
| <input checked="" type="checkbox"/> GOAL 8: Decent Work and Economic Growth         | <input type="checkbox"/> GOAL 17: Partnerships for the Goals             |
| <input checked="" type="checkbox"/> GOAL 9: Industry, Innovation and Infrastructure | <input type="checkbox"/> No SDG concerned                                |

TARGET DATE(S)	FOR FIRST CD: 2026-09-30	FOR PUBLICATION: 2028-12-31
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ESTIMATED NUMBER OF MEETINGS: 4	FREQUENCY OF MEETINGS: 2 per year	DATE OF FIRST MEETING: 2026-02-26	PLACE OF FIRST MEETING: Virtual (e.g., Zoom)
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RELEVANT DOCUMENTS TO BE CONSIDERED:

IEC TS 63444

RELATION TO AND IMPACT ON EXISTING WORK:

IEC 61158-2:2023

RELEVANT COUNTRY PARTICIPATION

LIAISONS WITH INTERNATIONAL BODIES:

ISO/IEC JTC 1 / SC 25 / WG 3

NEED FOR ISO COORDINATION:

AFFECTED STAKEHOLDERS

DOCUMENT MATURITY:

☐ A DRAFT IS ATTACHED FOR COMMENT\*

☒ AN OUTLINE IS ATTACHED

\* Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

CONCERNS KNOWN PATENTED ITEMS (SEE ISO/IEC DIRECTIVES, PART 1)

☐ Yes

☒ No

PATENT DESCRIPTION:

RECIPIENTS OF THIS DOCUMENT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY LOCAL REGULATIONS OR TECHNICAL REASONS THAT MAY EXIST AND SHOULD BE CONSIDERED SHOULD THIS PROPOSAL PROCEED, RECOGNIZING THAT FAILURE TO ADDRESS SUCH REQUIREMENTS COULD RESULT IN THE NEED FOR "IN SOME COUNTRIES" CLAUSES.

CONCERNS LOCAL REGULATIONS OR TECHNICAL DIFFERENCES (SEE AC/22/2007)

☐ Yes

☐ No

DESCRIPTION:

WE NOMINATE A PROJECT LEADER IN ACCORDANCE WITH ISO/IEC DIRECTIVES, PART 1

LAST NAME:

FIRST NAME:

E-MAIL:

COUNTRY:

Proell

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Germany

COMMENTS AND RECOMMENDATIONS FROM TC/SC OFFICERS:

WORK ALLOCATION:

☐ NEW PROJECT TEAM

☐ NEW WORKING GROUP

☒ EXISTING WORKING GROUP:

IF APPROVED, THE NEXT STAGE SHOULD BE:

☒ CD

☐ CDV

REMARKS FROM TC/SC OFFICERS:

This project is to transform the existing IEC TS 63444 to an IS as announced in the IEC SC65C plenary in 2024. The work will be synchronized with the IEC 61158 Edition 2028 work in 65C/WG 9. Some elements of the IEC TS 63444 could go into IEC 61918:2028.

This work is done in 65C/JWG10. It is expected that several Communication Profile Families (CPF) of IEC 61784-1, IEC 61784-2, and IEC 61784-5 in the edition 2028 will refer to this technology. Therefore, 65C/WG9 has chosen the project number to be a non-consecutive subpart number 100 (differently to the other subparts of IEC 61158-2 series).

APPROVAL CRITERIA

- Approval of the new work item proposal by a 2/3 majority of the P-members voting;
- At least 4 P-members in the case of a committee with 16 or fewer P-members, or at least 5 P-members in the case of committees with more than 17 P-members, have nominated or confirmed the name of an expert and approved the new work item proposal.

[Link to New Work Item Proposal \(NP\) online document:](#)

<https://osd.iec.ch/#/editor/archive/3e615ab8-a34d-b2a3-e063-1410000a69f1/en/PNW/1>

## **How to access**

This link leads you to the Online Standards Development (OSD) platform for National Mirror Committee's (NMC) comments. The project draft may be found further down this document.

## **Resource materials**

We recommend NCs to review the available materials to better understand the member commenting on the OSD platform. This includes the:

- [OSD NC roles overview](#)
- [How to add and submit comments to the IEC](#)

## **Contact**

Should you require any assistance, please contact the [IEC IT Helpdesk](#).