
Industrijska komunikacijska omrežja - Omrežja za avtomatizacijo z visoko razpoložljivostjo - 3. del: Protokol vzporedne redundance (PRP) in brezprehodna zanka z visoko razpoložljivostjo (HSR) (IEC 62439-3:2021/COR1:2023)

Industrial communication networks - High availability automation networks - Part 3: Parallel Redundancy Protocol (PRP) and High-availability Seamless Redundancy (HSR) (IEC 62439-3:2021/COR1:2023)

Industrielle Kommunikationsnetze - Hochverfügbare Automatisierungsnetze - Teil 3: Parallelredundanz-Protokoll (PRP) und nahtloser Hochverfügbarkeits-Ring (HSR) (IEC 62439-3:2021/COR1:2023)

Réseaux de communication industriels - Réseaux de haute disponibilité pour l'automatisation - Partie 3: Protocole de redondance en parallèle (PRP) et redondance transparente de haute disponibilité (HSR) (IEC 62439-3:2021/COR1:2023)

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Ta slovenski standard je istoveten z: EN IEC 62439-3:2022/AC:2023-04

ICS:

25.040.01	Sistemi za avtomatizacijo v industriji na splošno	Industrial automation systems in general
35.110	Omreževanje	Networking

SIST EN IEC 62439-3:2022/AC:2023 **en,fr,de**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

**EN IEC 62439-
3:2022/AC:2023-04**

April 2023

ICS 25.040.40; 35.100.05

English Version

**Industrial communication networks - High availability automation
networks - Part 3: Parallel Redundancy Protocol (PRP) and
High-availability Seamless Redundancy (HSR)
(IEC 62439-3:2021/COR1:2023)**

Réseaux de communication industriels - Réseaux de haute
disponibilité pour l'automatisation - Partie 3: Protocole de
redondance en parallèle (PRP) et redondance transparente
de haute disponibilité (HSR)
(IEC 62439-3:2021/COR1:2023)

Industrielle Kommunikationsnetze - Hochverfügbare
Automatisierungsnetze - Teil 3: Parallelredundanz-Protokoll
(PRP) und nahtloser Hochverfügbarkeits-Ring (HSR)
(IEC 62439-3:2021/COR1:2023)

This corrigendum becomes effective on 28 April 2023 for incorporation in the English language version of the EN.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Endorsement notice

The text of the corrigendum IEC 62439-3:2021/COR1:2023 was approved by CENELEC as EN IEC 62439-3:2022/AC:2023-04 without any modification.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION
COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

IEC 62439-3
Edition 4.0 2021-12

**INDUSTRIAL COMMUNICATION NETWORKS –
HIGH AVAILABILITY AUTOMATION NETWORKS –
Part 3: Parallel Redundancy Protocol (PRP) and
High-availability Seamless Redundancy (HSR)**

IEC 62439-3
Edition 4.0 2021-12

**RÉSEAUX DE COMMUNICATION INDUSTRIELS –
RÉSEAUX DE HAUTE DISPONIBILITÉ POUR
L'AUTOMATISATION –
Partie 3: Protocole de redondance en parallèle
(PRP) et redondance transparente de haute
disponibilité (HSR)**

CORRIGENDUM 1

Corrections to the French version appear after the English text. Please note that some corrections are different for the English and French texts.

Les corrections à la version française sont données après le texte anglais. Veuillez noter que certaines corrections sont différentes pour les textes anglais et français.

Corrections to the English version:

INTRODUCTION to Corrigendum 1

This Corrigendum 1 corrects errors and possible misinterpretations in IEC 62439-3:2021, which were discovered during the first field implementations based on this International Standard. All corrections are only intended to improve the consistency of implementations of the specifications and do not introduce new features to the technology.

NOTE This Corrigendum 1 includes corrections for the MIBs in Clause 7 and Annex E. These MIBs are provided as code components in companion documents, see <https://www.iec.ch/sc65c/supportingdocuments>. The corrections for Clause 7 and Annex E are provided for convenience, while the versions in the companion documents IEC_62439-3_2021B1.mib and IEC_62439-100_2021B1.mib contain the corrected code and prevail in case of discrepancies.

4 Parallel Redundancy Protocol (PRP)

4.2.7.2 NodesTable

Replace, in the last paragraph (two occurrences), “Supervision Frames” with “supervision frames”.

4.2.7.5.5 Receiving and NodesTable

Replace, in the first row of the table, “If this frame is not a PRP_Supervision frame or an HSR Supervision frame” with “If this frame is neither a PRP_Supervision frame nor an HSR_Supervision frame”.

Replace, in the third row of the table, “Else if this frame is a PRP_Supervision frame” with “Else (i.e. if this frame is a PRP_Supervision frame or an HSR_Supervision frame)”.

Replace, in the fifth row of the table, “Supervision Frame” with “supervision frame”.

Replace, in NOTE 1, “a well-formed RCT” with “a well-formed RCT on one port only”.

Replace, in NOTE 2, “Supervision Frames” with “supervision frames” and “Supervision Frame” with “supervision frame”.

5 High-availability Seamless Redundancy (HSR)

5.2.2.3 HSR-PRP RedBox for ring connection to a PRP network

Add, at the beginning of subclause 5.2.2.3, the following new headline 5.2.2.3.1:

“5.2.2.3.1 Configuration and operation”

Add, at the end of subclause 5.2.2.3, the following new subclause 5.2.2.3.2:

5.2.2.3.2 Handling of supervision frames

5.2.2.3.2.1 Forwarding supervision frames between HSR and PRP networks

Special processing has to be applied to supervision frames received by the RedBox because PRP_Supervision frames (see 4.3) and HSR_Supervision frames (see 5.7.2) have a slightly different format, so DANPs could be unable to recognize HSR_Supervision frames, while DANHs could be unable to recognize PRP_Supervision frames.

To resolve such potential incompatibility, an HSR-PRP RedBox shall perform a proxy translation of supervision frames in both directions (HSR→PRP and PRP→HSR).

The translation shall include the following:

- 1) Translate TLV1.TYPE
 - a) If its value is 20 or 21 (PRP_Supervision frame), replace it with 23 before forwarding the frame to the HSR network
 - b) If its value is 23 (HSR_Supervision frame), replace it with 20 (duplicate discard) before forwarding the frame to the PRP network
- 2) If TLV2 is not present,
 - a) Insert TLV2
 - b) Replace the supervision frame’s sequence number with the RedBox’s local sequence number
- 3) If TLV2 is present, leave it and the supervision frame’s sequence number unmodified
- 4) Replace the frame’s source MAC address with the MAC address of the RedBox and replace the RedundancyTag sequence number with the RedBox’s local sequence number