

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Industrial communication networks – High availability automation networks –  
Part 2: Media Redundancy Protocol (MRP)**

**Réseaux de communication industriels – Réseaux d'automatisme à haute  
disponibilité –  
Partie 2: Protocole de redondance du support (MRP)**



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Withhold

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**INDUSTRIAL COMMUNICATION NETWORKS –  
HIGH AVAILABILITY AUTOMATION NETWORKS –****Part 2: Media Redundancy Protocol (MRP)**

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International Standard IEC 62439-2 has been prepared by subcommittee 65C: Industrial networks, of IEC technical committee 65: Industrial-process measurement, control and automation.

This second edition cancels and replaces the first edition published in 2010. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- adding a protocol extension to select the media redundancy manager automatically;
- adding a protocol to redundantly connect media redundancy protocol rings.

The text of this standard is based on the following documents:

FDIS	Report on voting
65C/834/FDIS	65C/841/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with ISO/IEC Directives, Part 2.

This International Standard is to be read in conjunction with IEC 62439-1.

A list of all parts of the IEC 62439 series, published under the general title *Industrial communication networks – High availability automation networks*, can be found on the IEC website.

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## INTRODUCTION

The IEC 62439 series specifies relevant principles for high availability networks that meet the requirements for industrial automation networks.

In the fault-free state of the network, the protocols of the IEC 62439 series provide ISO/IEC/IEEE 8802-3 (IEEE 802.3) compatible, reliable data communication, and preserve determinism of real-time data communication. In cases of fault, removal, and insertion of a component, they provide deterministic recovery times.

These protocols retain fully the typical Ethernet communication capabilities as used in the office world, so that the software involved remains applicable.

The market is in need of several network solutions, each with different performance characteristics and functional capabilities, matching diverse application requirements. These solutions support different redundancy topologies and mechanisms which are introduced in IEC 62439-1 and specified in the other Parts of the IEC 62439 series. IEC 62439-1 also distinguishes between the different solutions, giving guidance to the user.

The IEC 62439 series follows the general structure and terms of the IEC 61158 series.

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning ring protocol given in Clause 5. Table 1 gives an overview of the relevant patents.

**Table 1 – Patent information**

No.	Status	Country	Granted Patent Number or Application Number (if pending)	Title
1	granted	US	US 6430151	Local networking with redundancy properties having a redundancy manager
	granted	CA	CA 2323429	
	granted	CN	CN 117195	
	granted	NO	NO 330908	
	granted	EP (AT, BE, CH, DE, DK, ES, FR, GB, IT, NL, SE)	EP 1062787	

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