

# INTERNATIONAL STANDARD

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**Information technology –  
Fibre channel –**

**Part 122:  
Arbitrated loop-2 (FC-AL-2)**

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**INFORMATION TECHNOLOGY –  
FIBRE CHANNEL –  
PART 122: Arbitrated loop-2 (FC-AL-2)**

**FOREWORD**

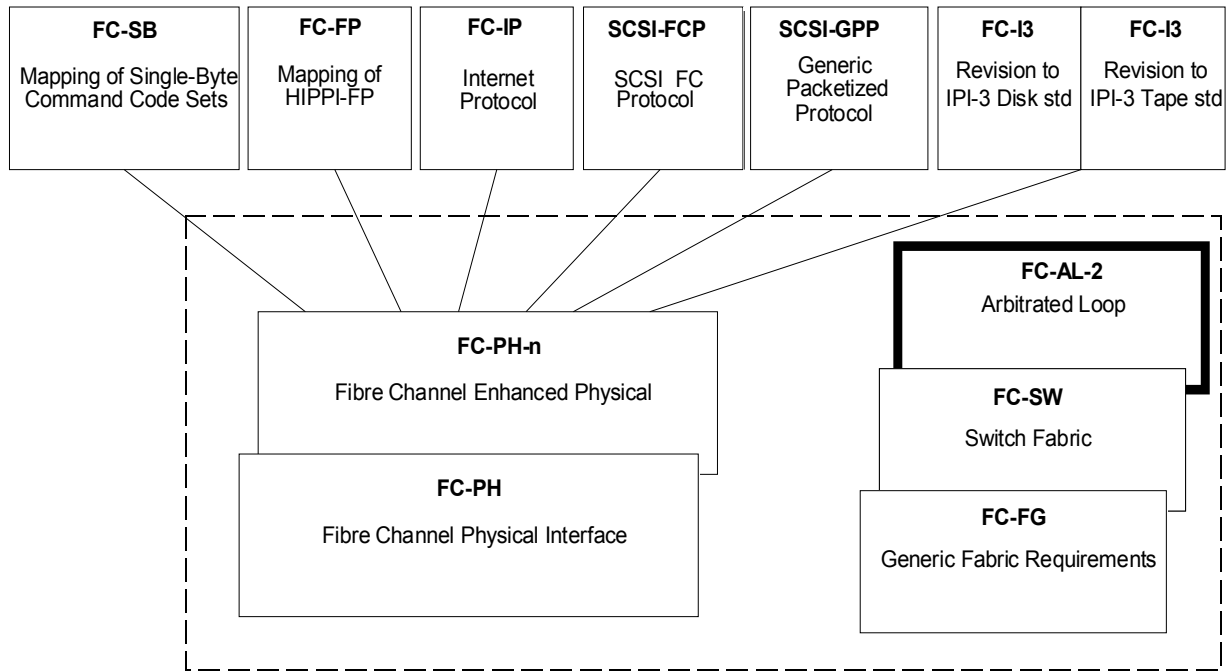
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International Standard ISO/IEC 14165-122 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.



## INTRODUCTION

International Standard ISO/IEC 14165-122 specifies an enhancement to the signaling protocol of the Fibre Channel Physical and Signaling Interface (FC-PH), ISO/IEC 14165-251, to support communication among two or more Ports without using the Fabric topology. The following diagram shows the relationship of this document to other parts of Fibre Channel. FC-PH-*n* refers to *n* versions of FC-PH. The roadmap is intended to show the general relationship of documents to one another, not a hierarchy, protocol stack or system architecture. It does not show the complete set of Fibre Channel documents.



**Figure 1 — Fibre channel roadmap**

FC-AL features enhanced Ports, called L\_Ports, which arbitrate to access an Arbitrated Loop. Once an L\_Port wins arbitration, a second L\_Port may be opened to complete a single point-to-point circuit (i.e., communication path between two L\_Ports). When the two connected L\_Ports release control of the Arbitrated Loop, another point-to-point circuit may be established. An L\_Port may have the ability to discover its environment and works properly, without outside intervention, with an F\_Port, an N\_Port or with other L\_Ports.

There is no change to the framing protocol of FC-PH-*n*, however, modification to the Port hardware is required to transmit, receive and interpret the new Arbitrated Loop Primitive Signals and Sequences.

## INFORMATION TECHNOLOGY – FIBRE CHANNEL –

### PART 122: Arbitrated loop-2 (FC-AL-2)

#### 1 Scope

This part of ISO/IEC 14165 specifies signaling interface enhancements for FC-PH, to allow L\_Ports to operate with an Arbitrated Loop topology. This standard defines L\_Ports that retain the functionality of Ports as specified in FC-PH. The Arbitrated Loop topology attaches multiple communicating points in a loop without requiring switches.

The Arbitrated Loop topology is a distributed topology where each L\_Port includes the minimum necessary function to establish a Loop circuit. A single FL\_Port connected to an Arbitrated Loop allows multiple NL\_Ports to attach to a Fabric.

When an L\_Port is operating on a Loop with at least one other L\_Port, the L\_Port uses the protocol extensions to FC-PH that are specified in this standard.

When an L\_Port is connected with an N\_Port or an F\_Port, the L\_Port communicates using the protocol defined in FC-PH.

Each L\_Port may use a self-discovering procedure to find the correct operating mode without the need for external controls.

#### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 14165-131, *Information technology — Fibre Channel — Part 131: Switch Fabric Requirements (FC-SW)*

ISO/IEC 14165-141, *Information technology — Fibre Channel — Part 141: Fabric Generic Requirements (FC-FG)*

ISO/IEC 14165-251, *Information technology — Fibre Channel — Part 251: Framing and Signaling (FC-FS)*<sup>1</sup>

INCITS 230:1994 [R2004], *Fibre Channel — Physical and Signaling Interface (FC-PH) [T11]*

Amendment 1 (1996)

Amendment 2 (1999)

<sup>1</sup> Under consideration.