



TECHNICAL REPORT



Dynamic modules – Part 6-10: Design guide – Intermediate controller for multiple dynamic module systems

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CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Terms, definitions and abbreviated terms	6
3.1 Terms and definitions.....	6
3.2 Abbreviated terms.....	6
4 Background of the software defined networking and its control plane for optical nodes	7
5 Research activities on high-performance node systems where intermediate controller plays key role.....	7
5.1 Photonic network with OpenFlow® controller	7
5.2 Dynamic optical path network with a network controller.....	7
5.3 Control interface of the Photonic Layer-2	8
6 Intermediate controller for multiple dynamic module systems.....	8
6.1 Description of the controller	8
6.1.1 Controller of multiple dynamic modules for a network node.....	8
6.1.2 Structure of the intermediate controller	9
6.2 Functions	10
6.3 Shared information between the control interface and the network control plane	11
7 Example of multi-degree ROADM systems.....	12
8 Conclusion	14
Bibliography.....	15
Figure 1 – Conceptual block of the control interface for multiple dynamic modules and network devices	8
Figure 2 – Basic block of the control interface for multiple dynamic modules.....	9
Figure 3 – Difference between connection information and configuration information	10
Figure 4 – Function coverage of the intermediate controller	11
Figure 5 – Example of a multiple dynamic module system.....	12
Figure 6 – Example of 4-degree ROADM node architecture	13
Figure 7 – 3-degree ROADM node with colourless, non-directional add/drop ports.....	13
Figure 8 – Compact PLC-based transponder aggregator for colourless and directionless ROADM.....	14
Table 1 – Shared information in the intermediate controller.....	12

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IEC TR 62343-6-10, which is a technical report, has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee TC 86: Fibre optics.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
86C/1381/DTR	86C/1422/RVC

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

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

A list of all parts in the IEC 62343 series, published under the general title *Dynamic modules*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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INTRODUCTION

Software defined networking (SDN) technology is widely recognized as a promising solution for flexible and efficient provisioning of networks by virtualizing their infrastructures, which results in cost-effective realization of high capacity, low energy consumption and even low latency. SDN technology will remain highly influential over global industries, societies, and the environment for many years to come.

Optical fibre communication technology has offered sufficient transport capacity with a fixed physical topology. However, recent technological progress in optical networking enables physical reconfiguration of optical paths by controlling multiple dynamic modules such as wavelength division multiplexing (WDM) devices and switching devices. Here, the key is to have an intermediate controller that controls and maintains the multiple dynamic modules in an integrated fashion, according to the upper layer controller of the SDN.

In order to realize such a reconfigurable and/or dynamically switchable optical network infrastructures at a hardware level in a cost-effective, reliable, scalable and low-carbon manner, it is important to initiate, in a timely manner and to a wide extent, conceptual and technical discussions, particularly on the intermediate controller for future standardization.

It is very important for industries to identify requirements for network architecture and devices/components in a timely manner, and to improve the technology development and investment efficiencies.

The objective of this part of IEC 62343 is to contribute to the standardization of basic requirements of the dynamic optical path networks using the intermediate controller.

DYNAMIC MODULES –

Part 6-10: Design guide – Intermediate controller for multiple dynamic module systems

1 Scope

This part of IEC 62343, which is a Technical Report, discusses the rationale, conceptual definition, and minimum list of functions for an intermediate controller that delivers a dynamic control signal to multiple dynamic modules. These modules are included in an optical-switch-based network node, according to the upper layer controller of software-defined optical networking.

2 Normative references

There are no normative references in this document.