



Welcome Tal Lavian, Senior IEEE Member

AbstractPlus

BROWSE SEARCH IEEE XPLORE GUIDE SUPPORT IEEE MEMBER DIGITAL LIBRARY

View TOC

e-mail printer friendly

Access this document

Full Text: PDF (687 KB)

Download this citation

Choose Citation

Download ASCII Text

Download

Learn More

Rights and Permissions

Learn More

DWDM-RAM: an architecture for data intensive services enabled by next generation dynamic optical networks

Hoang, D.B. Lavian, T. Figueira, S. Mambretti, J. Monga, I. Naiksatam, S. Cohen, H. Cutrell, D. Travostino, F.

Univ. of Technol., Sydney, NSW, Australia;

This paper appears in: [Global Telecommunications Conference Workshops, 2004. GlobeCom Workshops 2004. IEEE](#)

Publication Date: 29 Nov.-3 Dec. 2004

On page(s): 400- 409

ISSN:

ISBN: 0-7803-8798-8

INSPEC Accession Number: 8382316

Digital Object Identifier: 10.1109/GLOCOMW.2004.1417612

Current Version Published: 2005-04-18

Abstract

An architecture is proposed for data-intensive services enabled by next generation dynamic optical networks. The architecture supports new data communication services that allow for coordinating extremely large sets of distributed data. The architecture allows for novel features including algorithms for optimizing and scheduling data transfers, methods for allocating and scheduling network resources, and an intelligent middleware platform that is capable of interfacing application level services to the underlying optical technologies. The significance of the architecture is twofold: 1) it encapsulates "optical network resources" into a service framework to support dynamically provisioned and advance scheduled data-intensive transport services, and 2) it establishes a generalized enabling framework for intelligent services and applications over next generation networks, not necessarily optical end-to-end. DWDM-RAM is an implementation version of the architecture, which is conceptual as well as experimental. This architecture has been implemented in prototype on OMNInet, which is an advanced experimental metro area optical testbed that is based on novel architecture, protocols, control plane services (optical dynamic intelligent network-ODIN), and advanced photonic components. This paper presents the concepts behind the DWDM-RAM architecture and its design. The paper also describes an application scenario using the architecture's data transfer service and network resource services over the agile OMNInet testbed.

Index Terms

Inspec

Controlled Indexing

[data communication](#) [middleware](#) [optical fibre networks](#) [protocols](#) [resource allocation](#)
[telecommunication services](#) [wavelength division multiplexing](#)

Non-controlled Indexing

[DWDM-RAM](#) [advanced photonic component](#) [control plane service](#) [data communication service](#) [data intensive service](#) [intelligent middleware platform](#) [metro area optical testbed](#) [next generation dynamic optical network](#) [optical dynamic intelligent network](#)

Author Keywords

Not Available

Medical Subject Heading (MeSH Terms)

Not Available

PACS Codes

Not Available

DOE Thesaurus Terms

Not Available

References

No references available on IEEE Xplore.

Citing Documents

No citing documents available on IEEEExplore.

View TOC | Back to Top

