

# OIF

## CMIS – Is plug-and-play possible?

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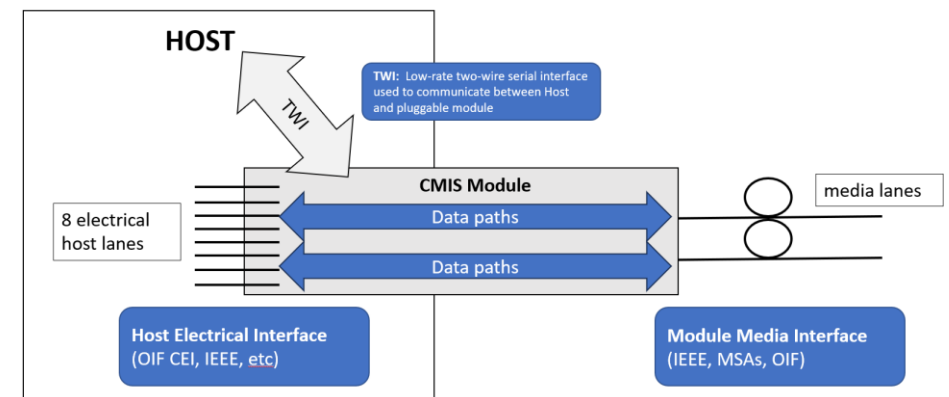
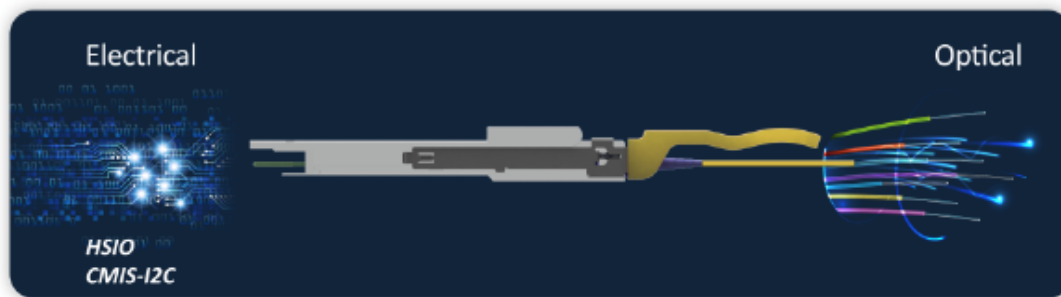
Doug Cattaursa, Cisco

# CMIS = Common Management Interface Specification

- CMIS defines a generic management communication interface together with a generic management interaction protocol between hosts and managed modules.
- The target audience of this specification includes suppliers of modules and transceivers, system manufacturers, and system integrators.

## CMIS Values:

- **Common:** Standardized rule book for all MSA vendors -> all modules seamlessly plug and play into your host
- **Flexible:** CMIS is defined to support variety of modules with different speeds, form factors, link ratings, use cases, etc.
- **Extendable:** CMIS is futureproofed for tomorrow's pluggable innovations.





# The CMIS Tools for Plug-and-Play

- Advertising

- Module describes itself to host
- Applicable to all parts of module management (provisioning, monitoring, upgrades, etc)

- Monitoring

- Versatile Diagnostic Monitoring (VDM)
- Fixed Registers for common monitoring (Rx optical power, temperature, etc)

- Provisioning

- Common module state machine
- Common data path state machine
- Application (AppSel) based provisioning

- Upgrades

- Common upgrade infra-structure

Path to 3<sup>rd</sup> party plug and play



# Is plug-and-play possible? Yes, with time...

CMIS provides the fundamental tools to enable plug-and-play

**Definition of Plug and Play:** Host platforms can manage a new module without additional driver support  
Manage includes: initialization, identification, PM/alarm reporting, and module upgrade.

CMIS defines a generic management interaction protocol,

- Module advertisement (application advertisement)
- State machine control
- Versatile Diagnostic Monitoring
- Upgrading modules

CMIS enables and incentivizes,

- Host to develop common software drivers that can enable multiple modules
- Modules generate memory maps and standard protocol behavior that enable compatibility across multiple hosts

The industry is working through a learning curve...



# White Paper: Path to Plug and Play

The OIF Whitepaper *CMIS: Path to Plug and Play* describes how Host software can use the CMIS defined advertised capabilities to configure a module into different applications modes.

The Whitepaper include suggestions,

- Enhancements to Host platforms that enable AppSel Tables and AppSel configuration through CLI CMDs
- Enhancements to Module vendors to enable new CMIS CDB CMDs that share application details

Example: Host display of Media/Host codes of a coherent module using SFF-8024 codes

AppSel code	Application Name (built from AppSel advertising codes and stored strings)	Media Code (from AppSel advertising)	Media Code Name (from strings stored in SW based on AppSel advertising)	Host Code (from AppSel advertising)	Host Code Name (from strings stored in SW based on AppSel advertising)	Host Supported Application
1	400ZR:400GAUI-8	3Eh	400ZR-AMPLIFIED	11h	400GAUI-8	Y
2	400ZR:100GAUI-2	3Eh	400ZR-AMPLIFIED	0Dh	100GAUI-2	N
3	ZR400-OFEC-16QAM:400GAUI-8	46h	ZR400-OFEC-16QAM	11h	400GAUI-8	Y
4	ZR400-OFEC-16QAM:100GAUI-2	46h	ZR400-OFEC-16QAM	0Dh	100GAUI-2	N
7	CUSTOM_CO:400GAUI-8	C0h	CUSTOM_CO	11h	400GAUI-8	Y
8	CUSTOM_CO:100GAUI-2	C0h	CUSTOM_CO	0Dh	100GAUI-2	N

# Challenges Facing CMIS

## Documentation

The Core CMIS specification is 344 pages and expanding.

## Future Adoptions

The transition to new interfaces and concepts,  
Convincing Host and Module vendors to adopt faster bus speeds, such as Improved Inter-Integrated Circuitry (I3C) and Gigabyte Ethernet.

Moving from a register-based interface to an object-based/message-based interface.

## Education & Experience

A lot to learn with an evolving specification.

Module variation require different levels of management support.

## Flexibility

CMIS must balance the requirements of multiple industries and accommodate a wide range of applications

Allow backwards compatibility within CMIS specification generations (ie compatibility from CMIS 5.0 through CMIS 5.3)

OIF has a plan!

# OIF Management Group

OIF encourages membership participation through routine meetings and test events.

Visit the OIF  
Booth #B83!

OIF demonstrates examples of CMIS management features through Trade show demonstrations.

OIF hosts educational Webinars focusing on key aspects of CMIS that encourage plug-and-play.

Enabling a Core CMIS standard and new Extension Implementation Agreements. Allowing host and module vendors to focus on specific applications.



# Q&A

# OIF

Thank You