WSON Optical Interface Class

draft-martinelli-wson-interface-class-02

Giovanni Martinelli	Cisco
Gabriele Galimberti	Cisco
Lyndon Ong	Ciena
Daniele Ceccarelli	Ericsson
Cyril Margaria	Nokia-Siemens

Overview

- **What**: Propose a different way to solve the WSON signal compatibility.

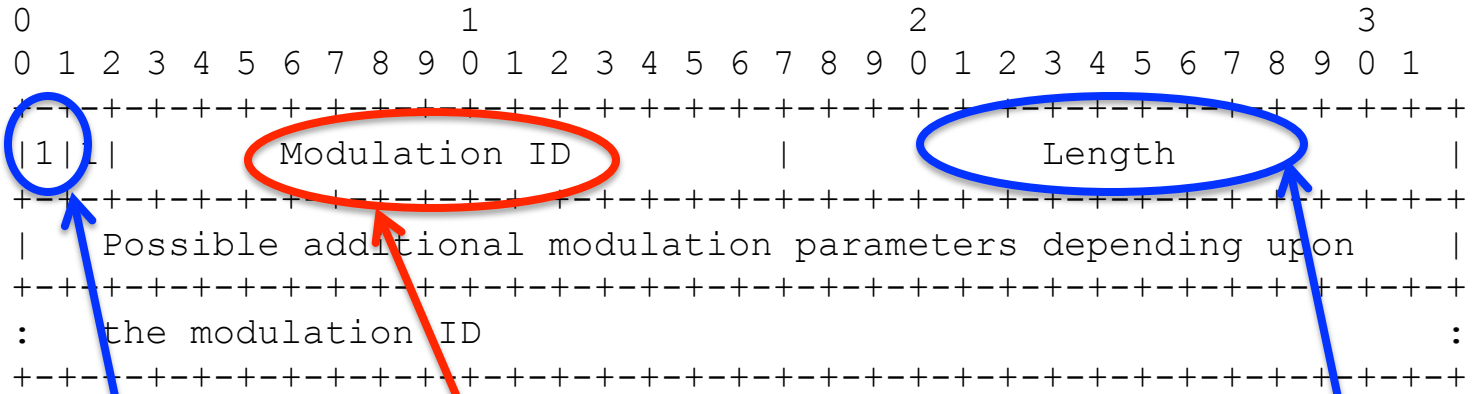
- **Why**: (to some extent) keep protocol extensions independent from ITU standard evolution.

- **Draft Status**: 00 in Quebec, now 02 with additional authors and some editing updates

Current WSON status

- Signal compatibility parameters (RFC6163):
  - FEC (forward error correction)
  - Modulation Format
  - Bit Rate
- Definitions/Encodings:
  - draft-ietf-ccamp-rwa-info, draft-ietf-ccamp-rwa-wson-encode
- Protocol Extensions
  - OSPF: draft-ietf-ccamp-wson-signal-compatibility-ospf
  - RSVP: draft-ietf-ccamp-wson-signaling
  - **PCEP: (draft-ietf-pce-wson-routing-wavelength) draft-lee-pce-wson-rwa-ext**

Example: Mod Format & FEC



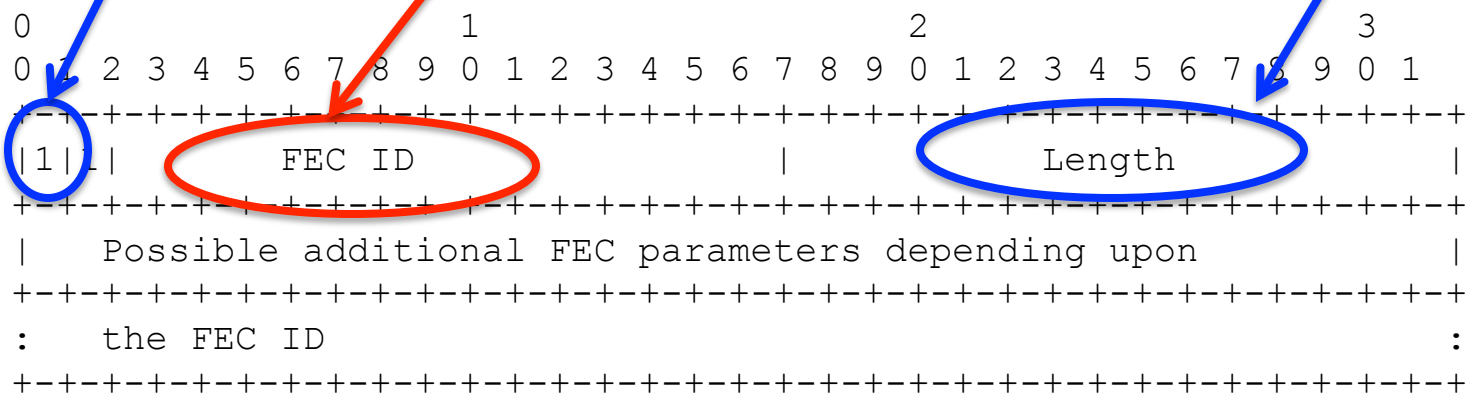
Possible?

ID according to G.959.1 (only NRZ)

Standard/ Proprietary

Length: depending also on proprietary info.

ID according to G.709 and G.975.1



Problem

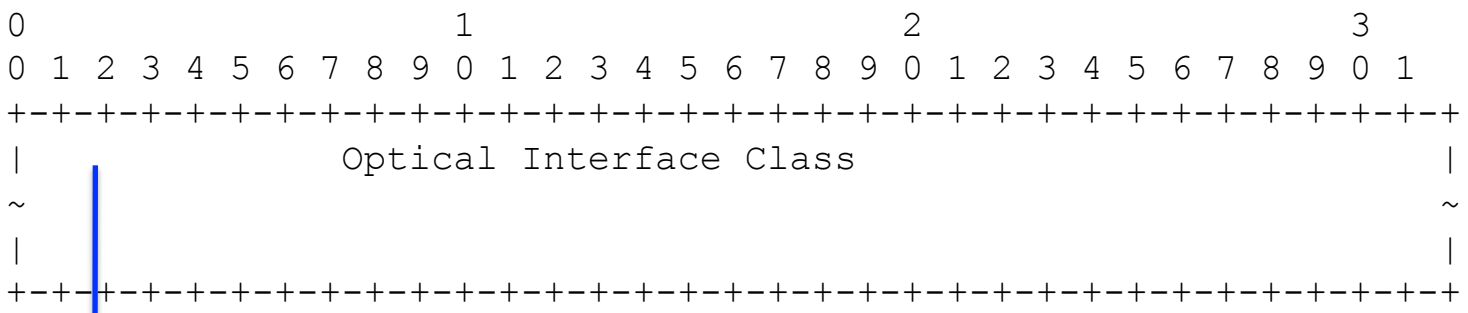
- Optical technology evolve (hopefully):
  - there are already new modulation formats available for 40/100G (e.g. DPSK/QPSK):
  - standard will evolve soon but we don't know how.

- What if we need some more parameters?
  - E.g. The Optical Impairment awareness case: how many parameters?

The Optical Interface Class

- It is a number (draft 02: 3 words by 32 bits)
- Protocol operations become trivial: if two interfaces have the same number, they are compatible.
- Semantic of the class defined elsewhere:
  - class like a “pointer”.
  - So when optical std evolve likely no protocol changes are required.

Optical Interface Class: encoding



Reference to:

Class value = 1
{
  FEC = …
  Mod Format = …
  Bit Rate = …
  …
}

Class value = 2
{
  FEC = …
  Mod Format = …
  Bit Rate = …
  …
}

Class Values / Content shall be defined elsewhere.

Thanks

- Comments?