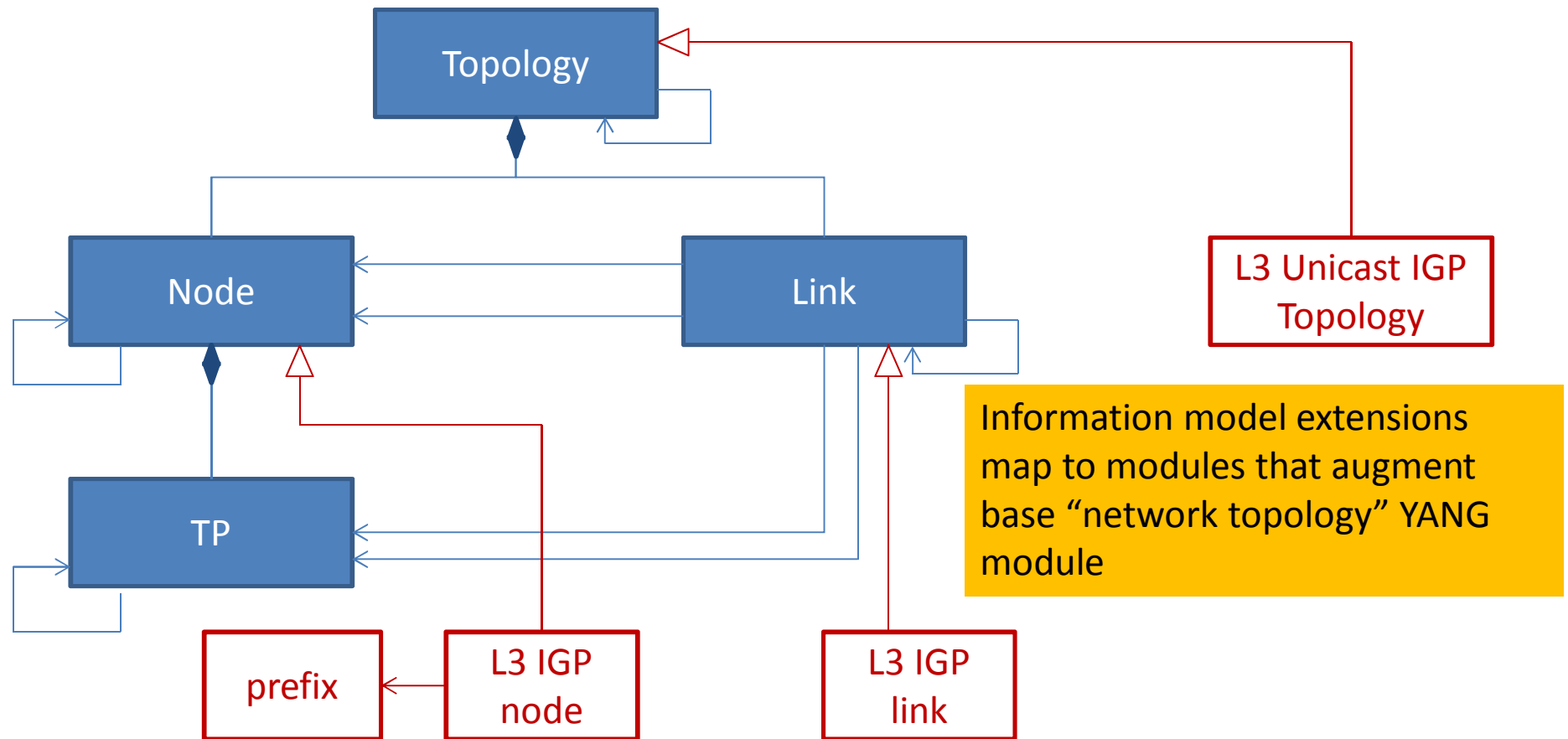# Network Topology Models
draft-clemm-i2rs-yang-l3-topo

Alexander Clemm (Cisco), Jan Medved (Cisco),

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Nitin Bahadur (Bracket Computing),

Vishnu Beeram (Juniper)

Recap: Data model structure (contd.)

Topology

Node

Link

L3 Unicast IGP Topology

TP

prefix

L3 IGP node

L3 IGP link

Information model extensions map to modules that augment base "network topology" YANG module

˝ Derive Layer 3 Unicast IGP topology object classes
˝ Integrity rules ensure links, nodes, topology of matching type

```
module: l3-unicast-igp-topology
  augment /nt:network-topology/nt:topology/nt:topology-types:
    +--rw l3-unicast-igp-topology!
  augment /nt:network-topology/nt:topology:
    +--rw igp-topology-attributes
       +--rw name?   string
       +--rw flag*   flag-type
  augment /nt:network-topology/nt:topology/nt:node:
    +--rw igp-node-attributes
       +--rw name?        inet:domain-name
       +--rw flag*        flag-type
       +--rw router-id*   inet:ip-address
       +--rw prefix* [prefix]
          +--rw prefix    inet:ip-prefix
          +--rw metric?   uint32
          +--rw flag*     flag-type
  augment /nt:network-topology/nt:topology/nt:link:
    +--rw igp-link-attributes
       +--rw name?     string
       +--rw flag*     flag-type
       +--rw metric?   uint32
  augment /nt:network-topology/nt:topology/nt:node/nt:termination-point:
    +--rw igp-termination-point-attributes
       +--rw (termination-point-type)?
          +--:(ip)
          |  +--rw ip-address*      inet:ip-address
          +--:(unnumbered)
             +--rw unnumbered-id?   uint32
```
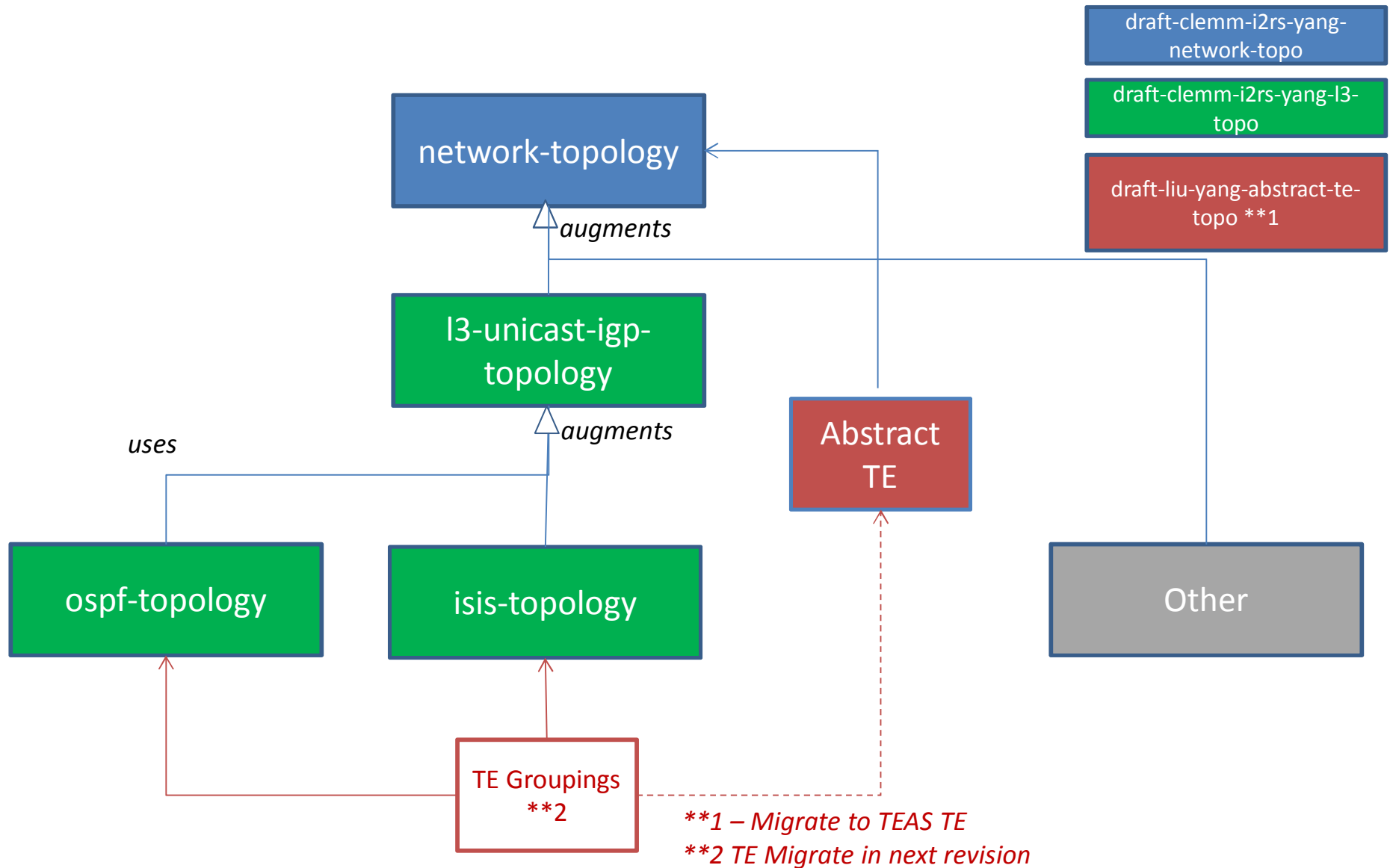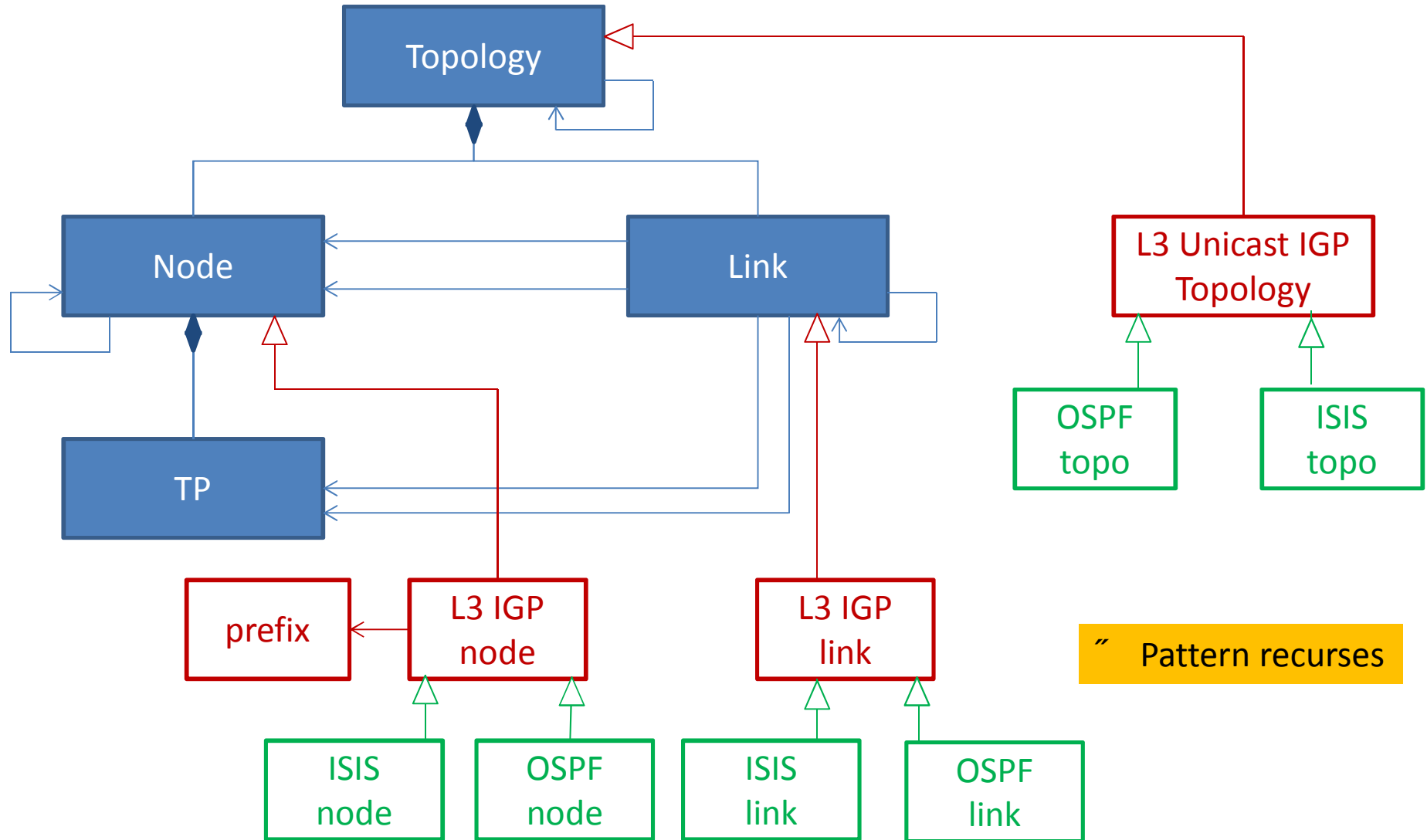
TE Data Architecture

draft-clemm-i2rs-yang-network-topo

draft-clemm-i2rs-yang-l3-topo

draft-liu-yang-abstract-te-topo **1

network-topology

augments

l3-unicast-igp-topology

uses

augments

Abstract TE

ospf-topology

isis-topology

Other

TE Groupings **2

**1 – Migrate to TEAS TE
**2 TE Migrate in next revision

Links to Protocol Dependent
L3 structures

Topology

Node

Link

L3 Unicast IGP
Topology

TP

OSPF
topo

ISIS
topo

prefix

L3 IGP
node

L3 IGP
link

ˮ Pattern recurses

ISIS
node

OSPF
node

ISIS
link

OSPF
link

Discussion

˝ Uses Generic Topology

˝ Read-only vs read-write topology

 . Server-provided flag as opposed to "read-only" vs "configured" state"

˝ Model has considerable traction, multi-vendor support

˝ Implementations exist

˝ **Ask:** Adopt as WG document