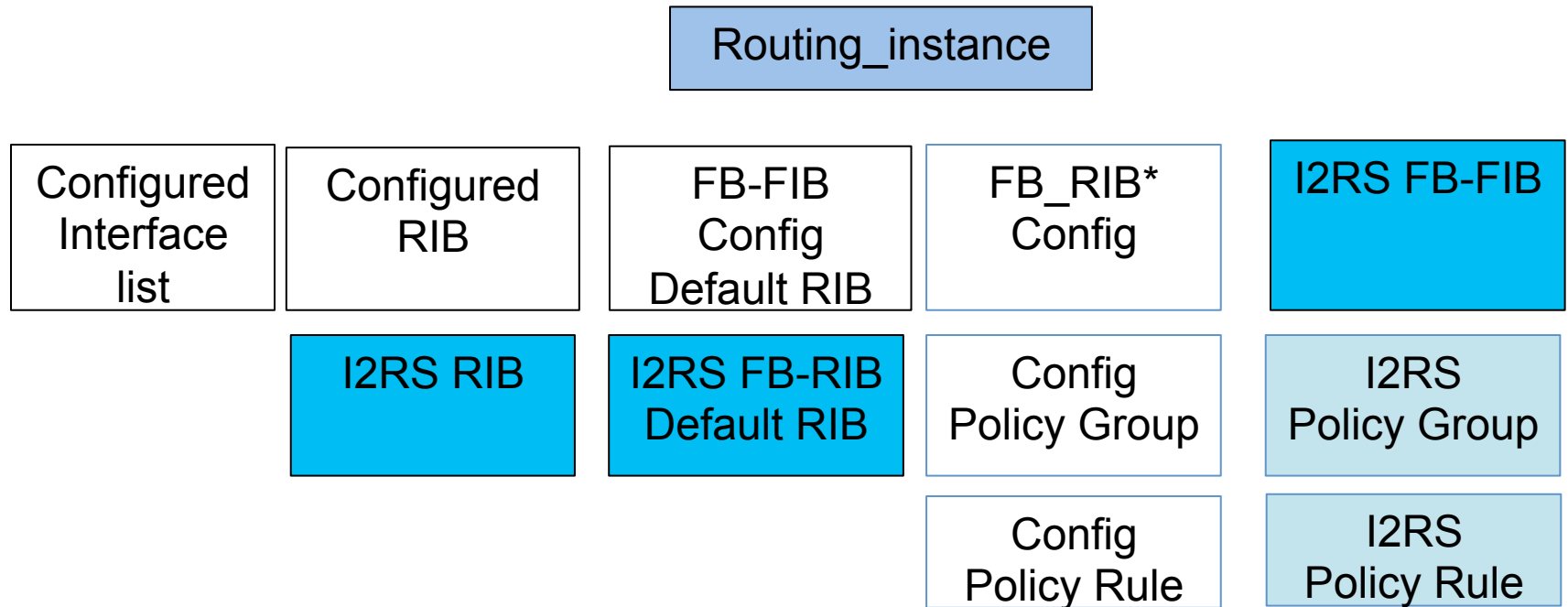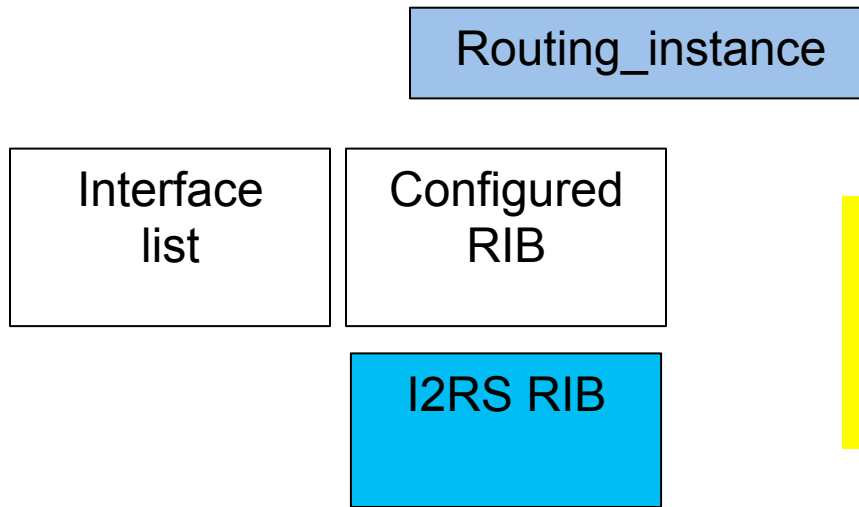# I2RS Work

Susan Hares

I2RS co-chair

I2RS Charter

- I2RS problem and architecture drafts
- I2RS Use Case documents
- I2RS protocol requirements (not covered here)
- I2RS protocol independent work
  - Forwarding RIBs
  - Filter-Based RIB
  - Protocol Independent Topologies

I2RS P.I. Forwarding RIBs

- I2RS RIB

- I2RS FB-RIB (Filter-Based RibS)

		Routing_instance		
Configured Interface list	Configured RIB	FB-FIB Config Default RIB	FB_RIB* Config	I2RS FB-FIB
	I2RS RIB	I2RS FB-RIB Default RIB	Config Policy Group	I2RS Policy Group
			Config Policy Rule	I2RS Policy Rule

RIB Models
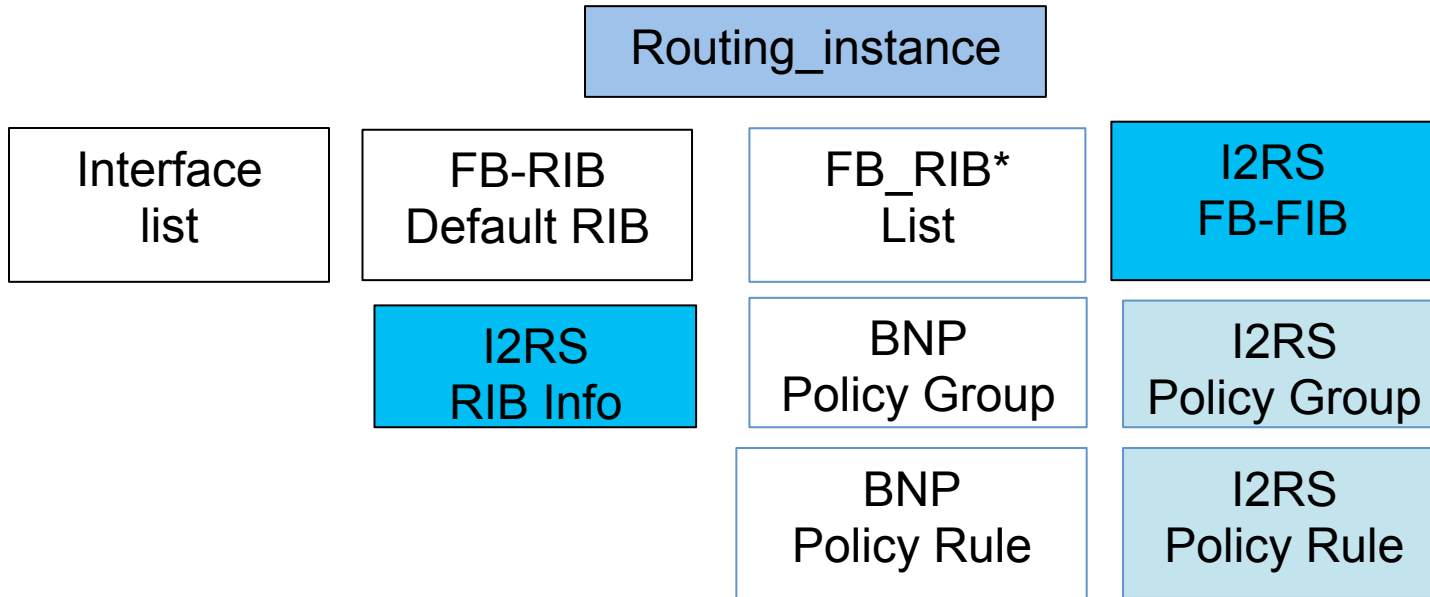
Routing_instance

Interface list

Configured RIB

I2RS RIB

These are ready for review and implementation.

I2RS RIB Models
draft-ietf-i2rs-rib-info-model-06
draft-wang-i2rs-rib-data-model-02 (Adoption Pending)

FB-RIB as a Filter-Based RIB

Routing_instance

Interface list	FB-RIB Default RIB	FB_RIB* List	I2RS FB-FIB
	I2RS RIB Info	BNP Policy Group	I2RS Policy Group
		BNP Policy Rule	I2RS Policy Rule

I2RS PBR Models

draft-kini-i2rs-fb-rib-info-model-00

Draft-kini-i2rs-fb-rib-yang-dm-00 (design team forming)

Policy drafts (will harmonize with)

- draft-ietf-netmod-acl-model-01
- draft-shaikh-rtgwg-policy-model-00
- draft-yan-rtgwg-routing-policy-yang-00
- draft-hares-i2rs-bnp-info-model-01

This topic is being launched at IETF93

Protocol Independent Data Models

(presented first at I2RS and TEAS interims in December, 2014)

Protocol Independent Topologies (PIT)

Abstract topology

| L1 topology | L2-topology | L3 topology | PBR Topology | TE Topology | Service topology |

I2RS topologies
- draft-chen-i2rs-topology-im-00.txt (summary of PIT topologies)
- draft-clemm-i2rs-yang-network-topo-02 (generic model)
- Draft-dong-i2rs-inventory-00.txt   (generic model addition)
- draft-zhang-i2rs-l1-topo-yang-model-00
- draft-dong-i2rs-l2-network-topology-00
- draft-clemm-i2rs-yang-l3-topo-00
- draft-dong-i2rs-l2-network-topology-00
- Draft-wang-i2rs-service-topo-dm-00
- Draft-wang-i2rs-service-topo-sfc-dm-00
- Draft-dunbar-i2rs-discover-traffic-rules-00

Netmod
- draft-liu-netmod-yang-abstract-topo-00
- draft-liu-yang-abstract-te-topo-00
- draft-bogdanovic-netmod-yang-model-classification-00
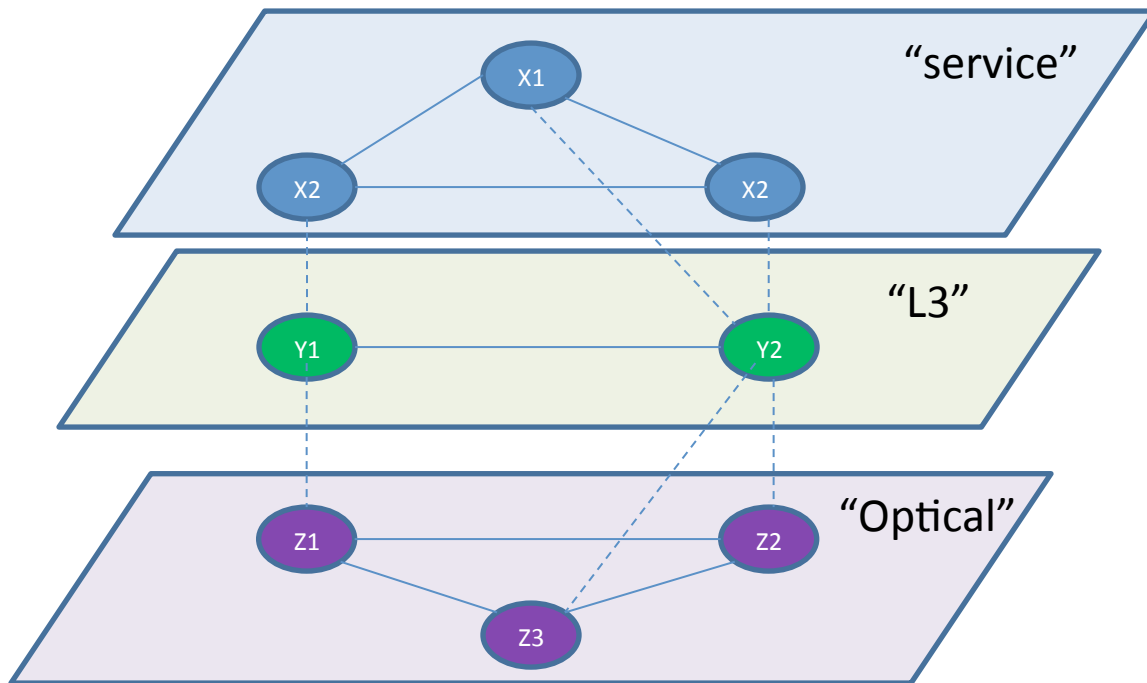
I2RS 3/5/2015
Willi have updates to all the I2RS PIT Drafts
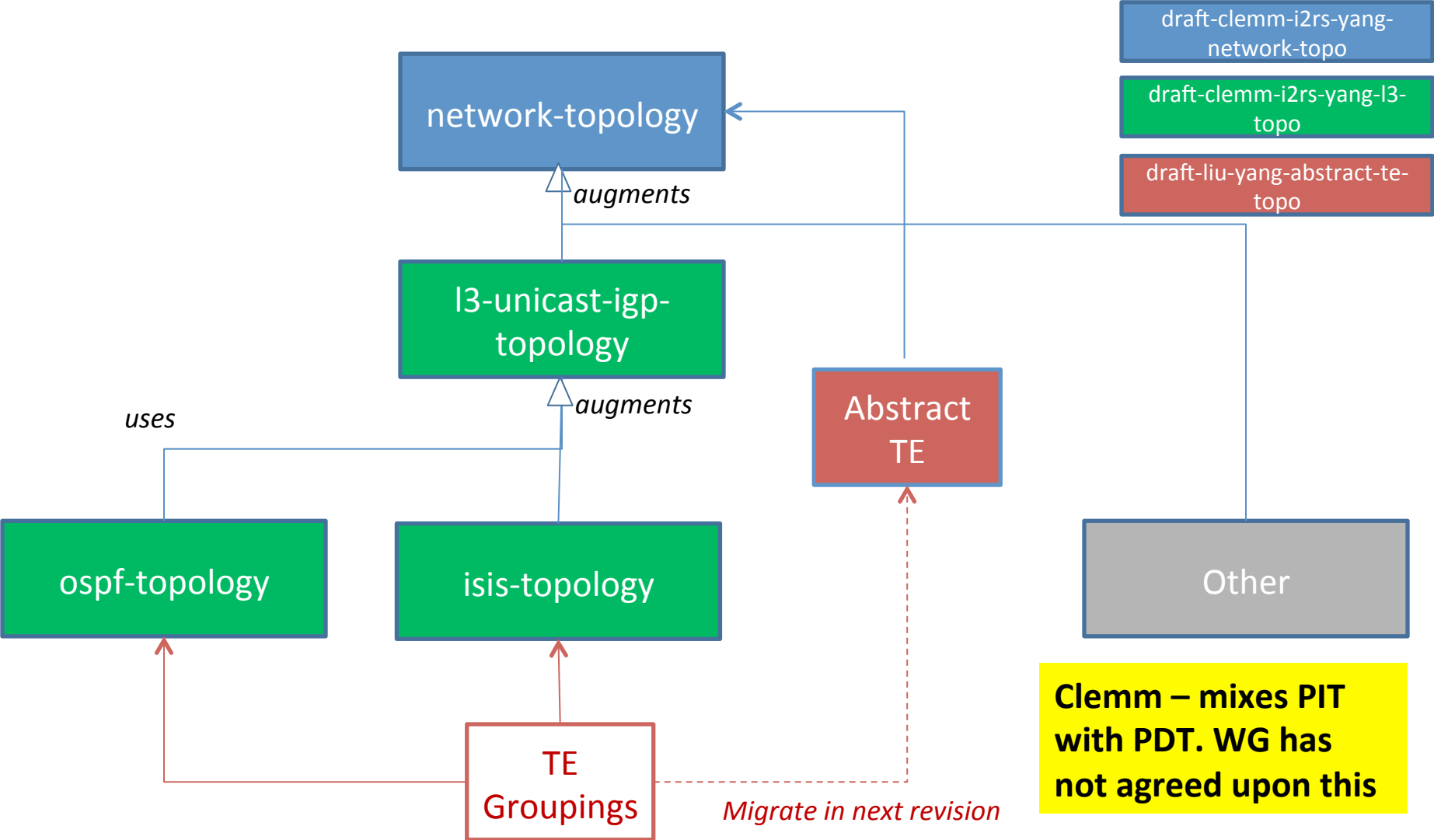
2nd pass (April to July)
- TE drafts will be done in 2nd pass to allow TEAS to work
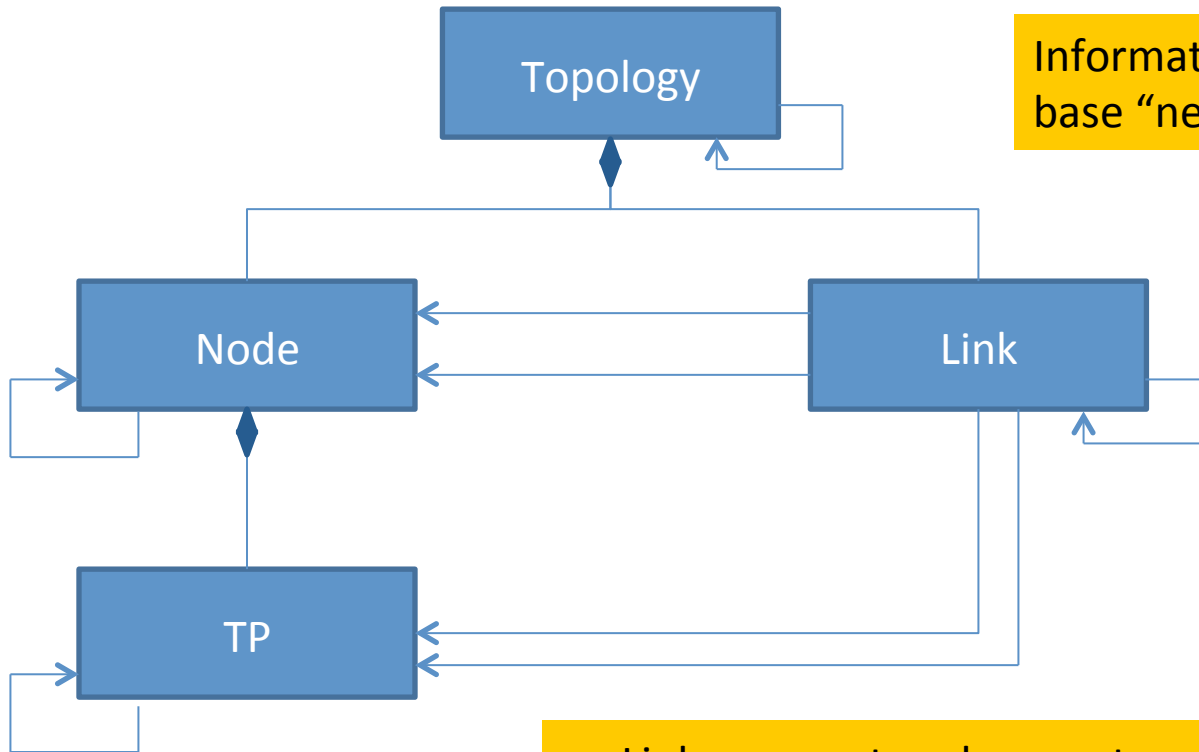- **Service topology drafts** will include VPN service topologies

Clemm
Horizontal and vertical layering

Clemm Data model "architecture"

Data model structure (Clemm)

Topology

Node

Link

TP

Information model underlying
base "network topology" YANG module

- Links connect nodes, are terminated by termination points
- Topologies can refer to underlay topologies
- Links can refer to underlay links
- Nodes can refer to underlay nodes
- Unidirectional, point-to-point links
  represent non-ptp through hierarchies of nodes, links

Protocol Dependent Topologies (PDT)

Protocol

| L1 topology | L2 Protocols | L3 Protocols | App Protocols |

L2 Protocols:
- TRILL topologies
- 802.1 topologies
- 802.11 topologies
- 802.15 topologies

L3 Protocols:
- ISIS topologies
- BGP topologies
- OSPF topologies
- SPRING topologies
- MPLS LDP MPLS TE

App Protocols:
- ALTO
- ?others

I2rs interim feedback: There are more protocols dependent topologies Than listed.

IMHO BESS topologies are service topologies using BGP topologies – so they are protocol dependent

Protocol Dependent IM/DM

- I2RS proposals for Info Models:
  - draft-wu-i2rs-isis-info-model-00   [i2rs/isis WG]
  - draft-wu-i2rs-ospf-info-model-00 [i2rs/ospf WG]
  - draft-hares-i2rs-bgp-im-02   [i2rs/bgp WG]

- Data models in I2RS
  - draft-wang-i2rs-isis-dm-00   [i2rs/isis WG]
  - draft-wang-i2rs-ospf-dm-00   [i2rs/ospf WG]
  - draft-wang-i2rs-bgp-dm-00   [i2rs/IDR WG]

- Data models in Routing WGs
  - draft-ietf-isis-yang-isis-cfg-01   [ISIS WG]
  - draft-yeung-netmod-ospf-02   [OSPF proposed adoption]
  - draft-zhdankin-netmod-bgp-cfg-01   [presented in IDR]
  - draft-shaikh-idr-bgp-model-00   [Provider's OpenConfig]

- AFI/SAFI RIBS + multi-topology implies that protocol specific topologies are in routing protocols

Q&A