

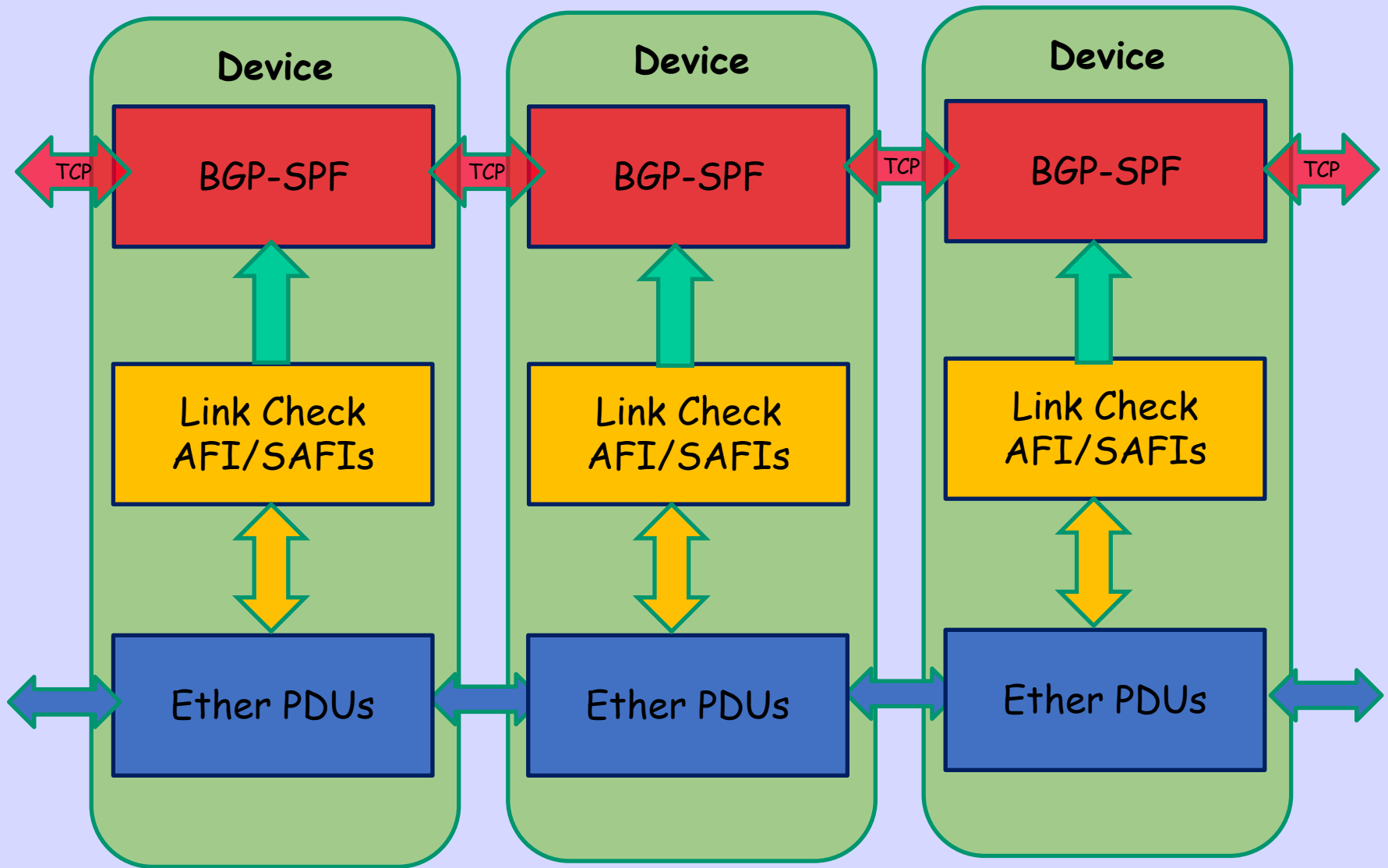
Link State Over Ether

What Changed in -01?

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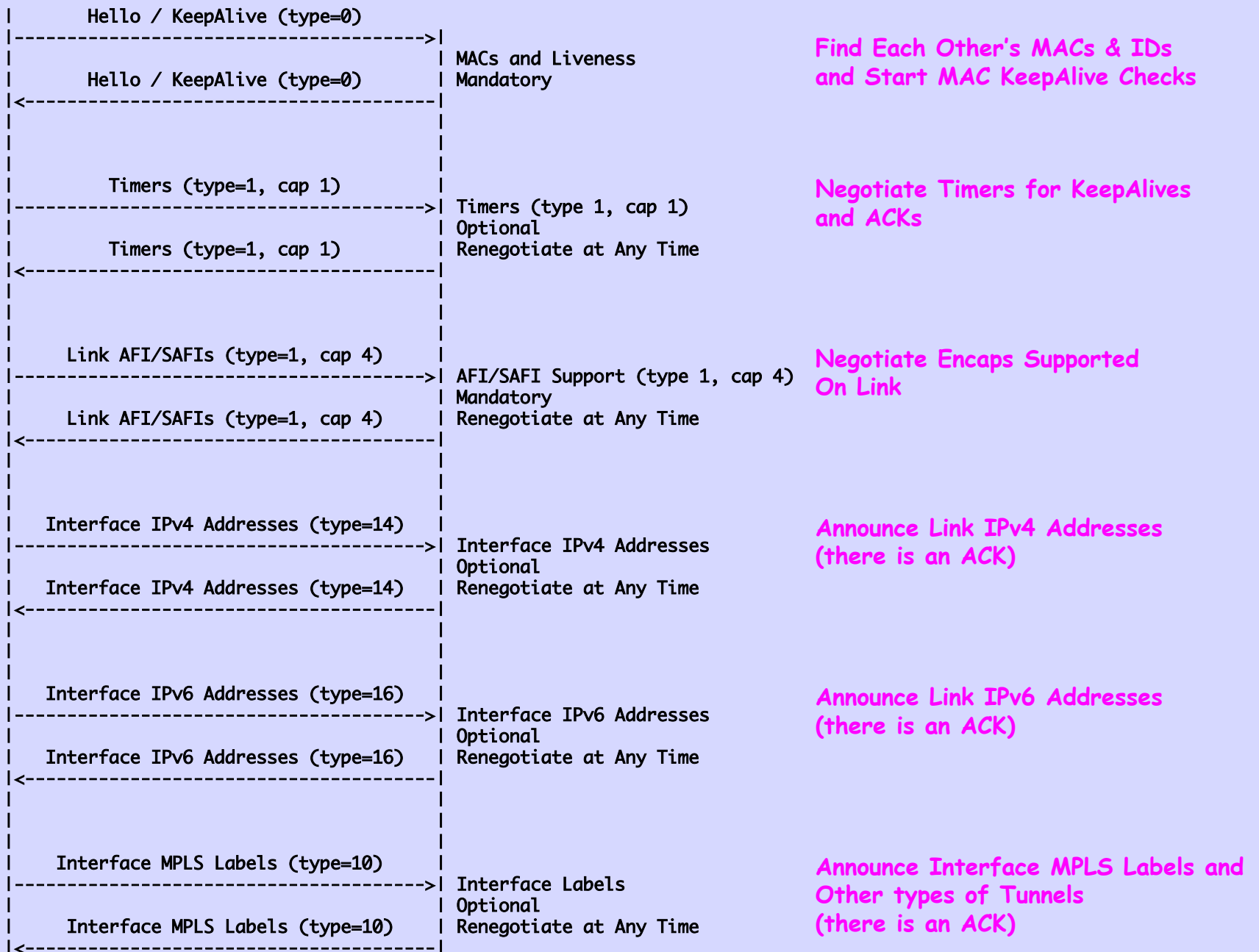
Keyur Patel <keyur@arrcus.com>

A Light Refresher

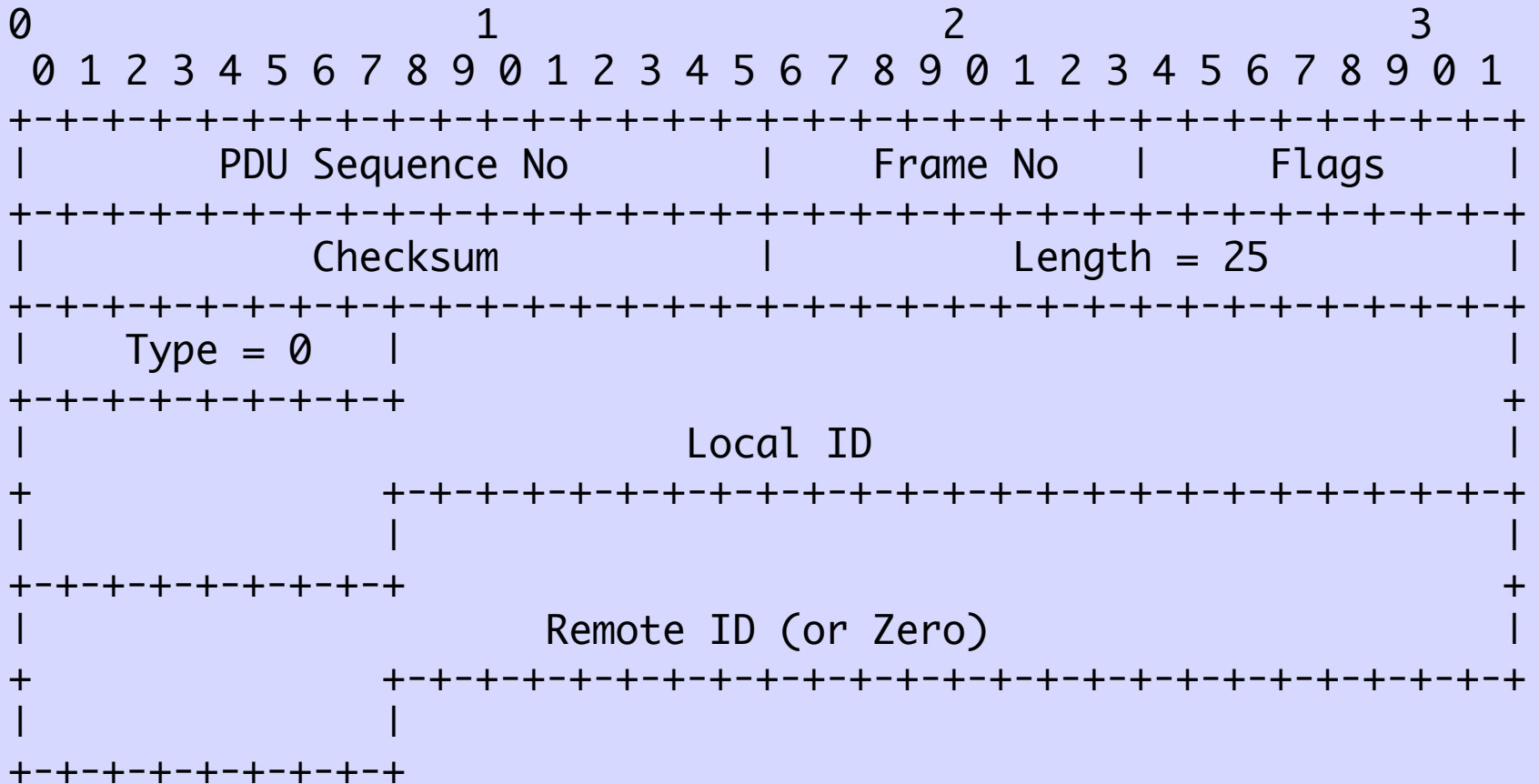


MAC Link State exchanged over raw Ethernet and pushed up stack
 Add the AFI/SAFI data IP-Level Liveness Check
 BGP-SPF uses link data to discover and build the topology database

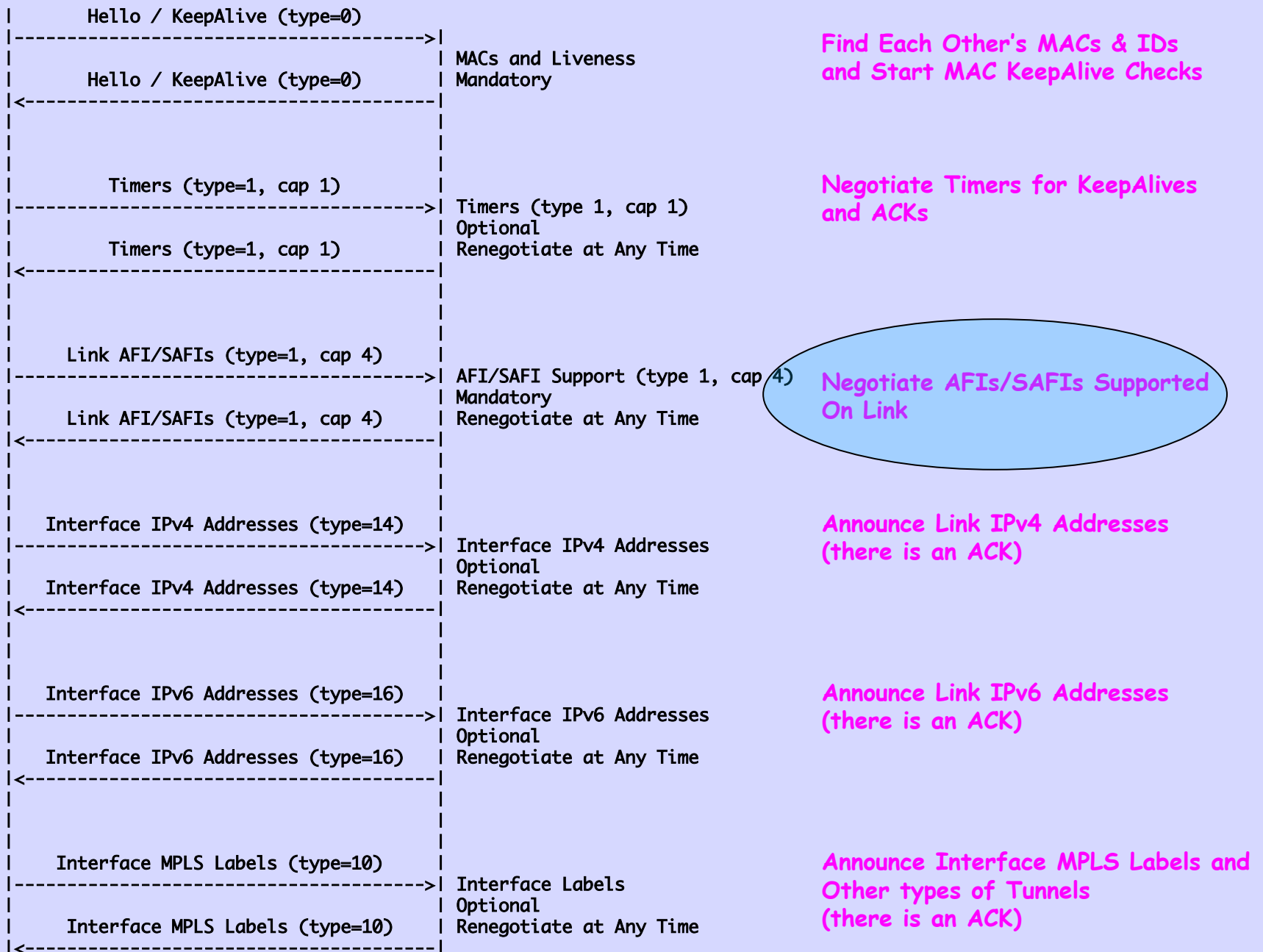
Inter-Link Ether Protocol



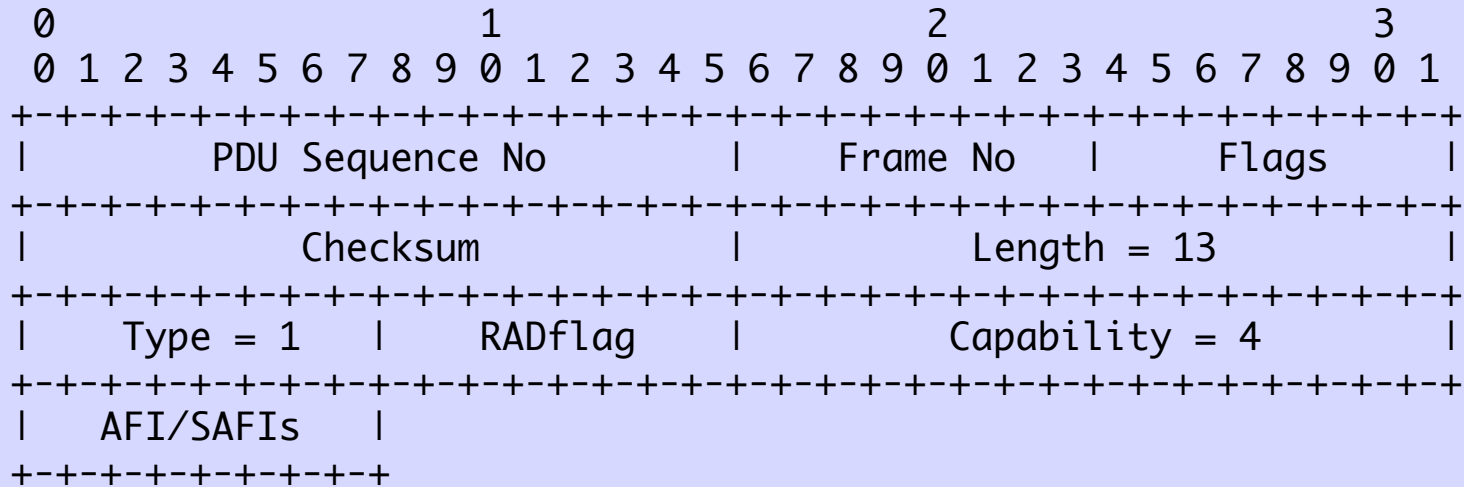
Hello/KeepAlive



Inter-Link Ether Protocol



AFI/SAFI Capabilities

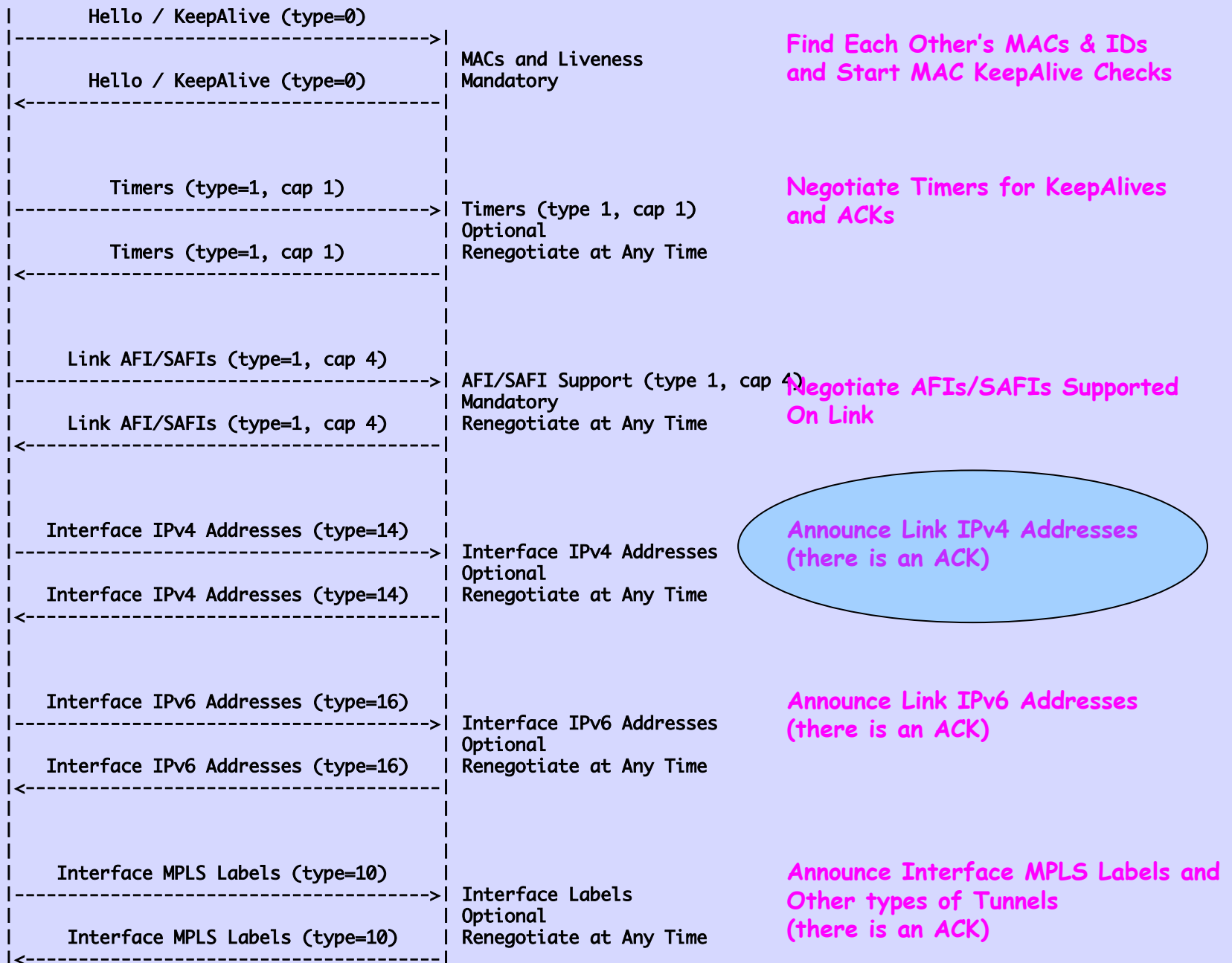


The AFI/SAFIs currently defined are as follows:

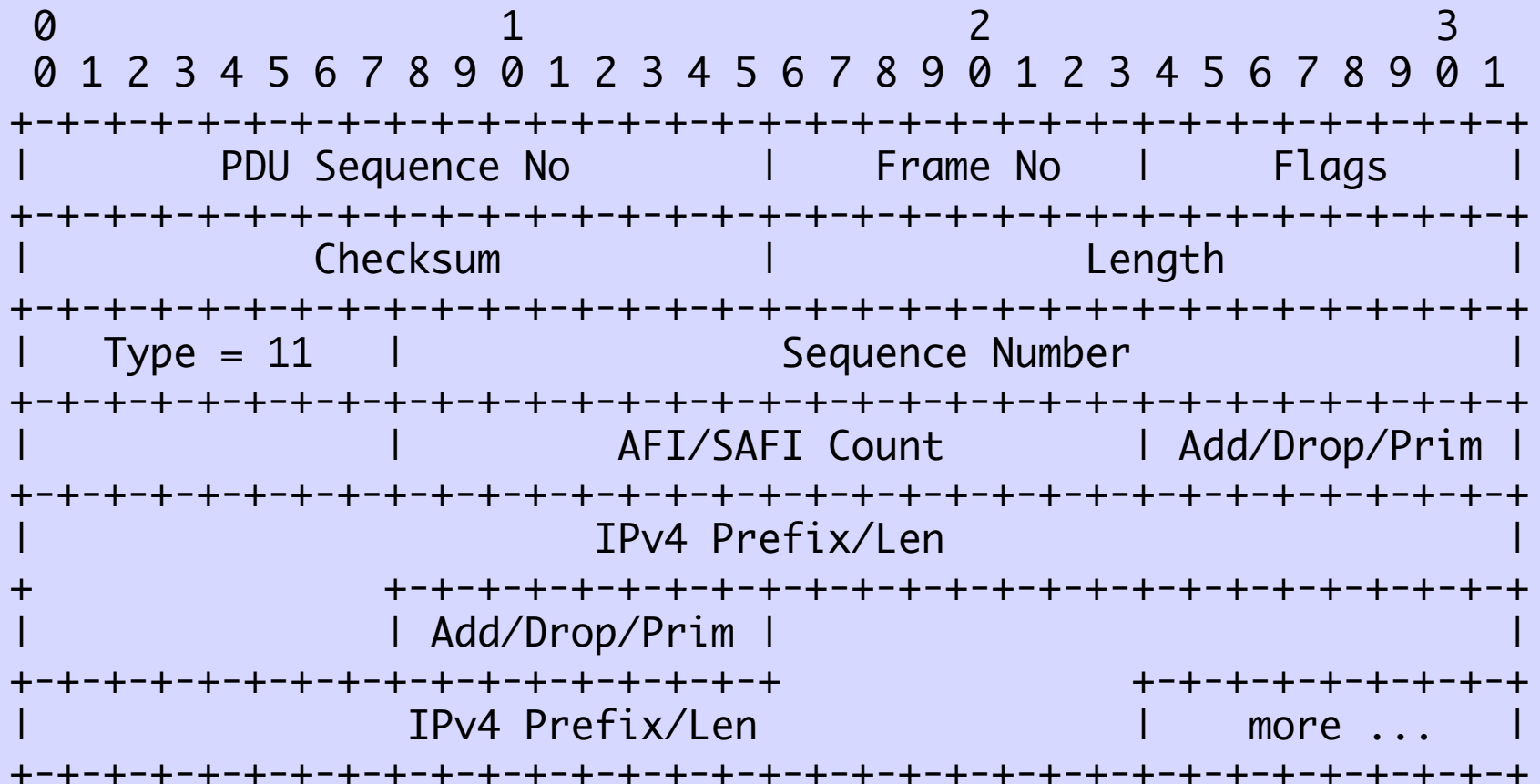
- 10 - IPv4
- 11 - IPv6
- 12 - MPLS IPv4
- 13 - MPLS IPv6
- ... - other tunnels (e.g. GRE)

s-AFI/SAFI-Encapsulations- Separate EtherTypes?

Inter-Link Ether Protocol



IPv4 Link Addresses



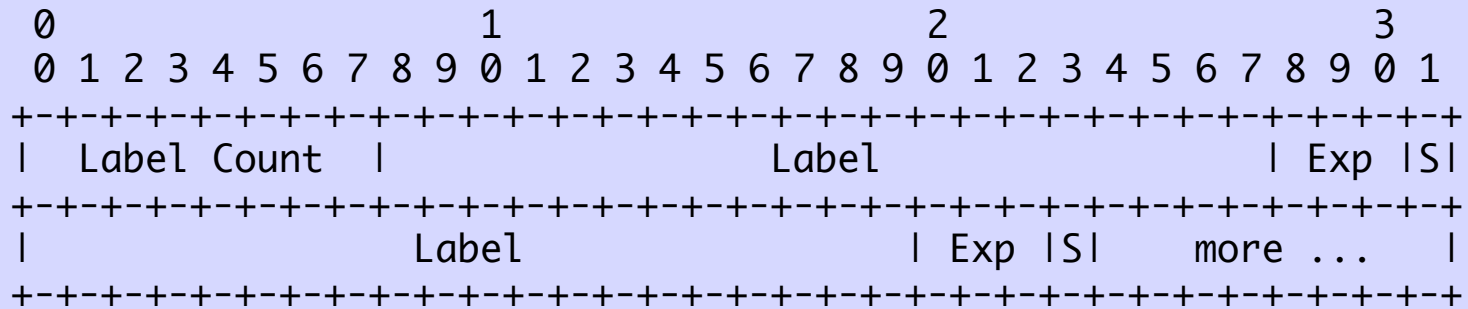
Summary of Changes

- Node Identifier - no longer ASN, but choose ASN, RouterID, anything unique
- MPLS Label became a Label List
- Northbound Protocol - Custom protocol replaced by using BGP-LS and extensions
- Administrivia (IANA cons, refs, ...)

Node Identifier

An ID can be an **ASN** with high order bits zero, a classic **RouterID** with high order bits zero, a catenation of the two, a **48-bit ISO System-ID**, or any other **identifier unique to a single device** in the BGP-SPF routing space.

MPLS Label List



Northbound

Ripped out the whole Northbound protocol and use BGP-LS TLV API

Stolen from BGP-SPF

For IPv4 links, TLVs 259 and 260 are used. And for IPv6 links, TLVs and 262. If there are multiple addresses on a link, multiple TLV pairs are pushed North, having the same ID pairs.

Node Descriptors

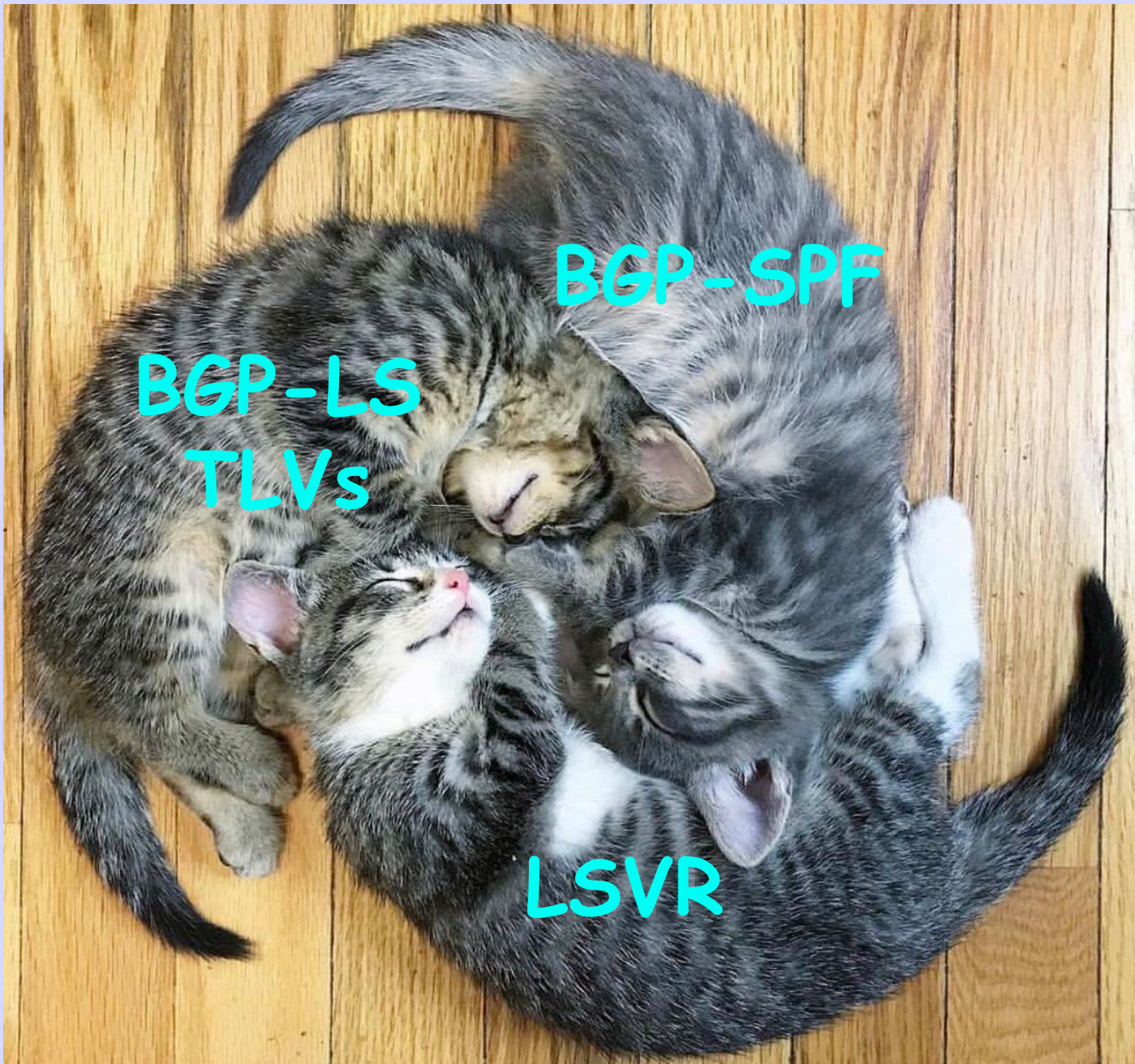
Similarly to BGP-SPF, the BGP protocol is used in the Protocol-ID field specified in table 1 of `bgpls-segment-routing-ope`. The local and remote node descriptors for all NLRI are the ID's described in Section 5.2.2.

Northbound MPLS

Label Sub-TLVs from `idr-bgp-ls-segment-routing-ext` Section 2.1.1, are used to associate one or more MPLS Labels with a link.

~Security

- This version has no security
- Waiting for basic skeleton to settle
- Want to add Authentication and maybe Integrity
- One of the things which are likely to drive the size over 1,500



BGP-SPF

BGP-LS

TLVs

LSVR