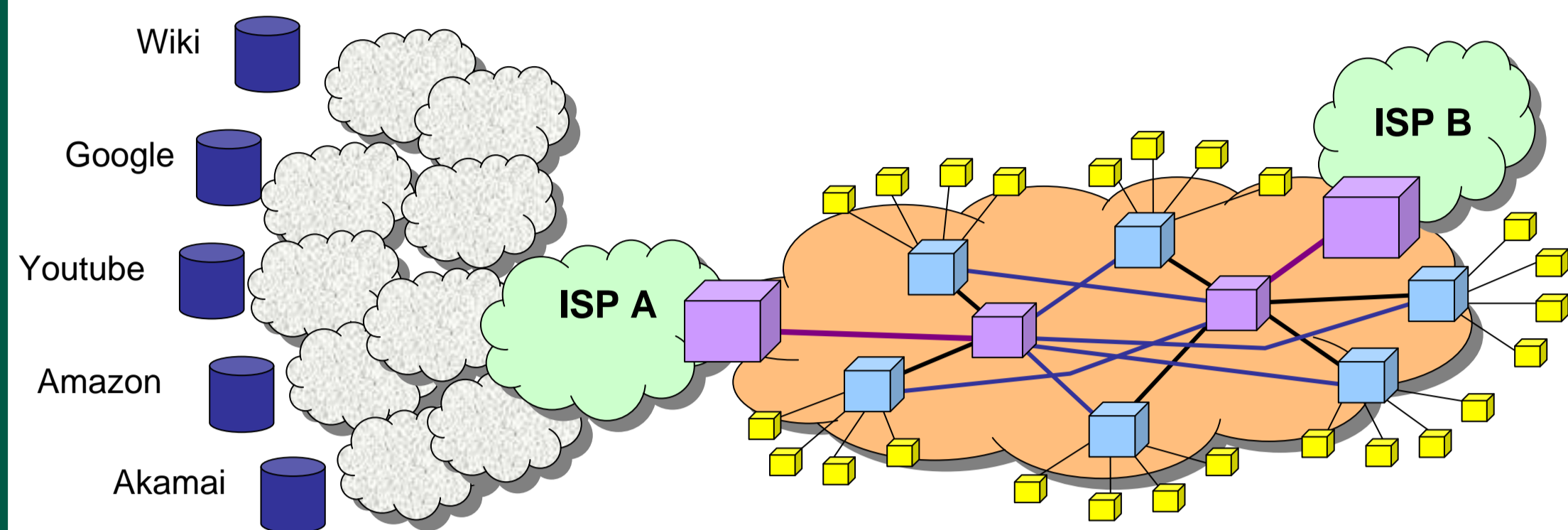
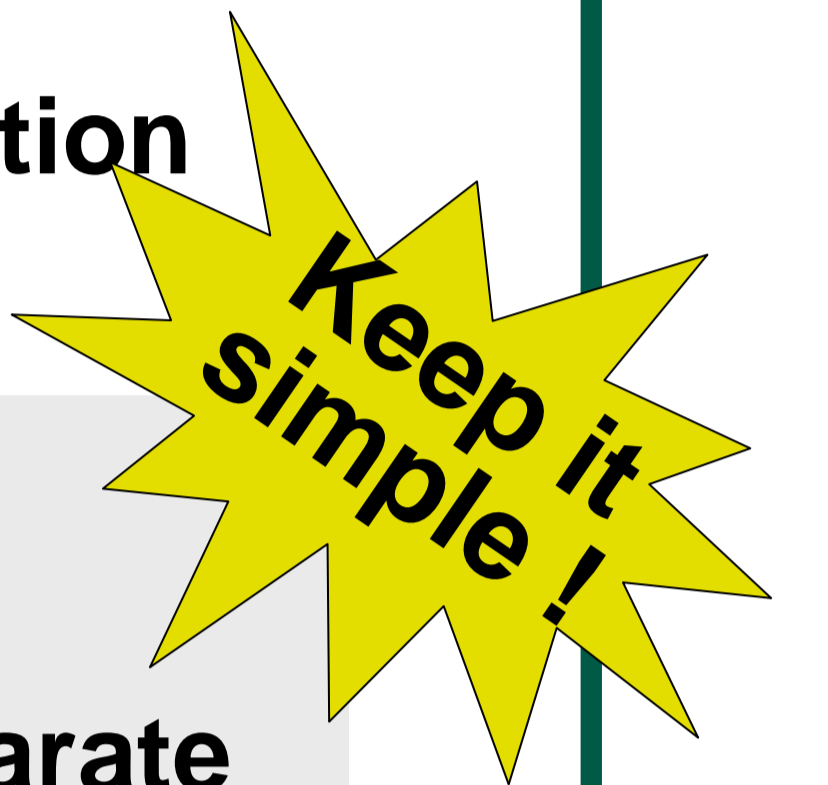




Inter-AS Class of Service



- Delay and Loss-critical services require QoS
- Differentiated Services and Integrated Services are widely deployed within Autonomous Systems (= Quality Islands)
- Inter-domain QoS is still missing
- Lack of mapping standards for Cross-layer harmonization of QoS support



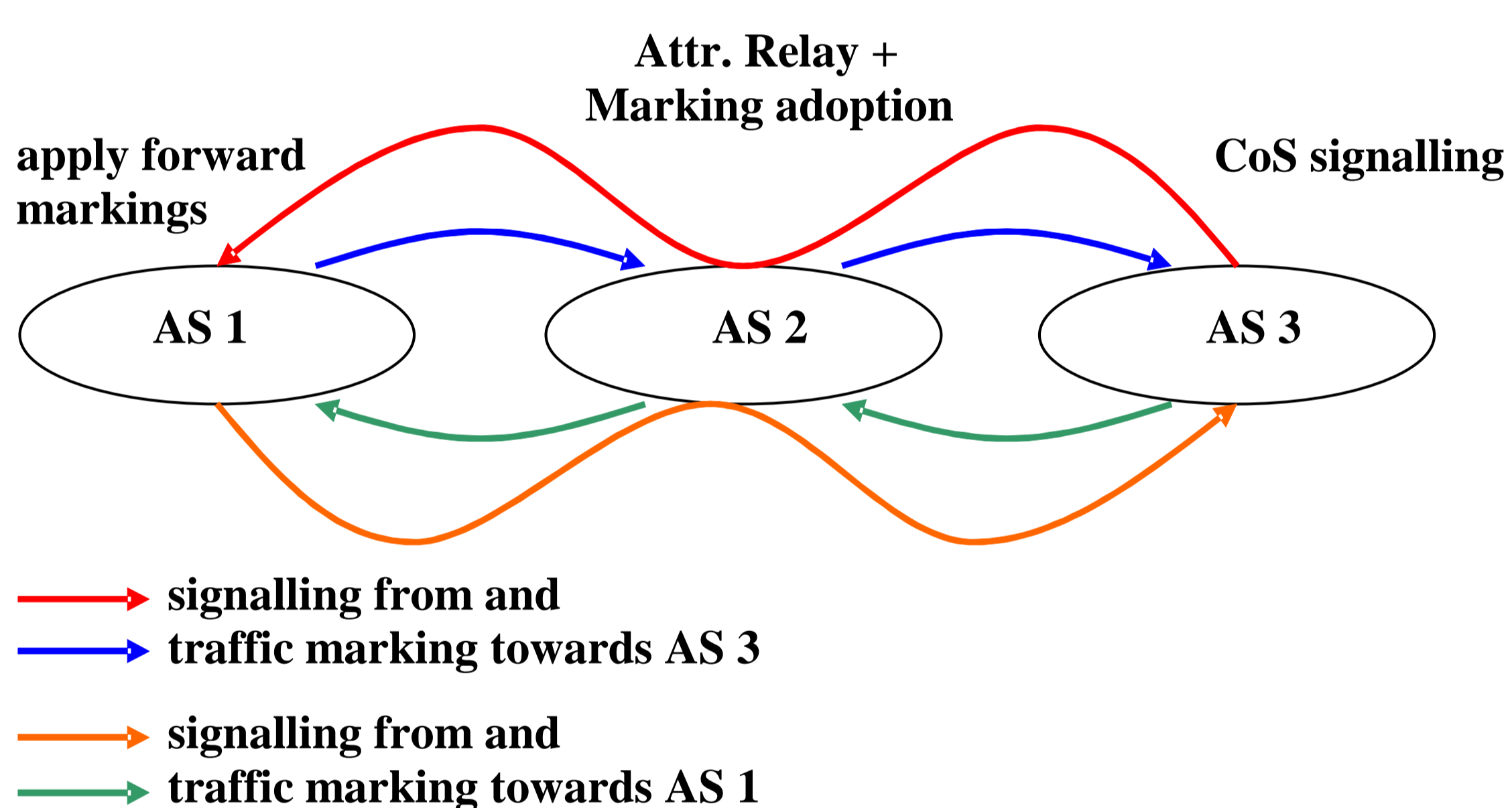
Traffic Separation is key

QoS in this approach refers to primitive traffic separation into several classes, which will experience differently prioritized forwarding behaviour in relaying nodes. Enqueuing in separate queues is thereby aspired.

Simplicity is key

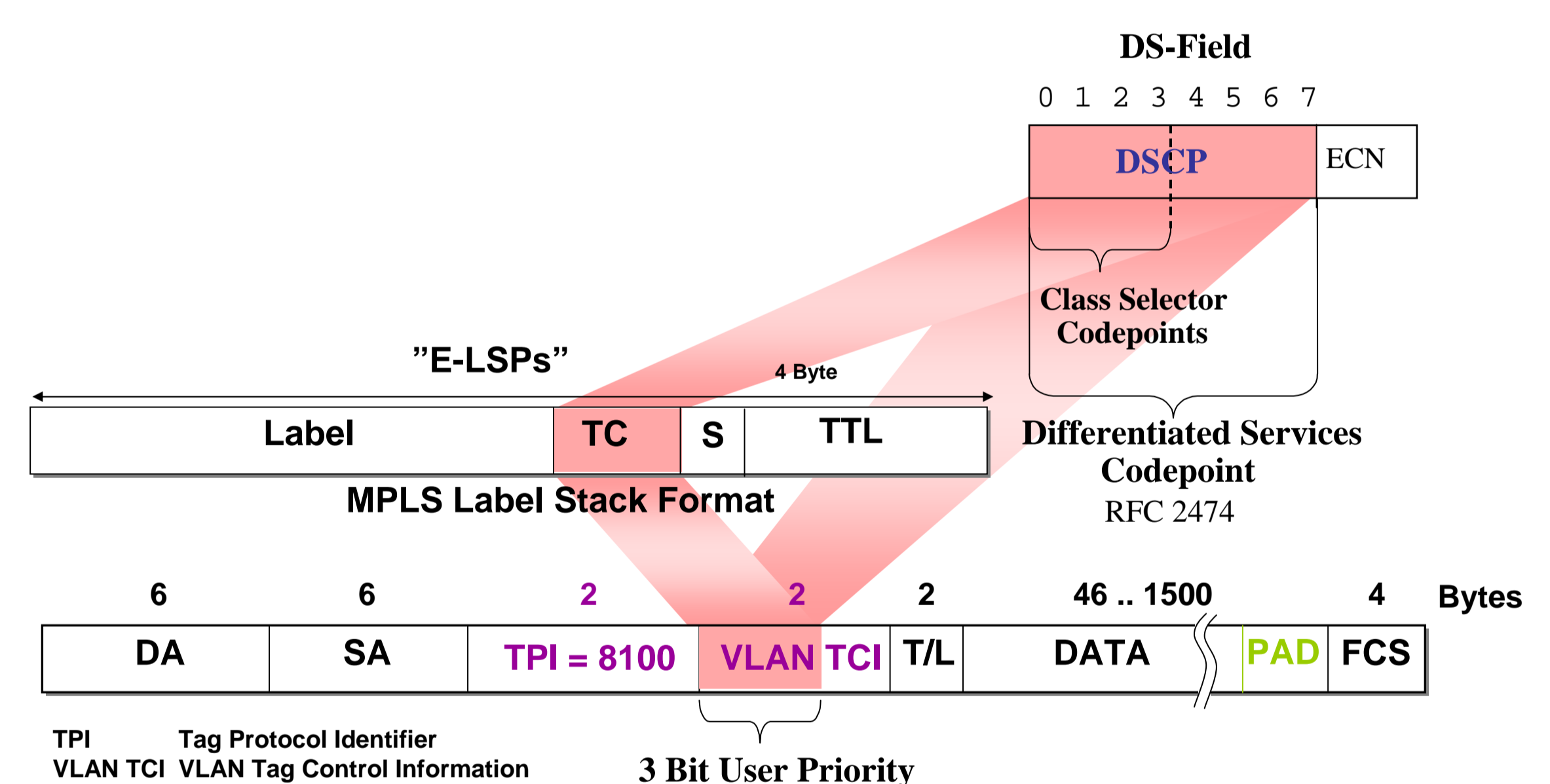
Cross-Domain Marking signalling

Using BGP extended communities



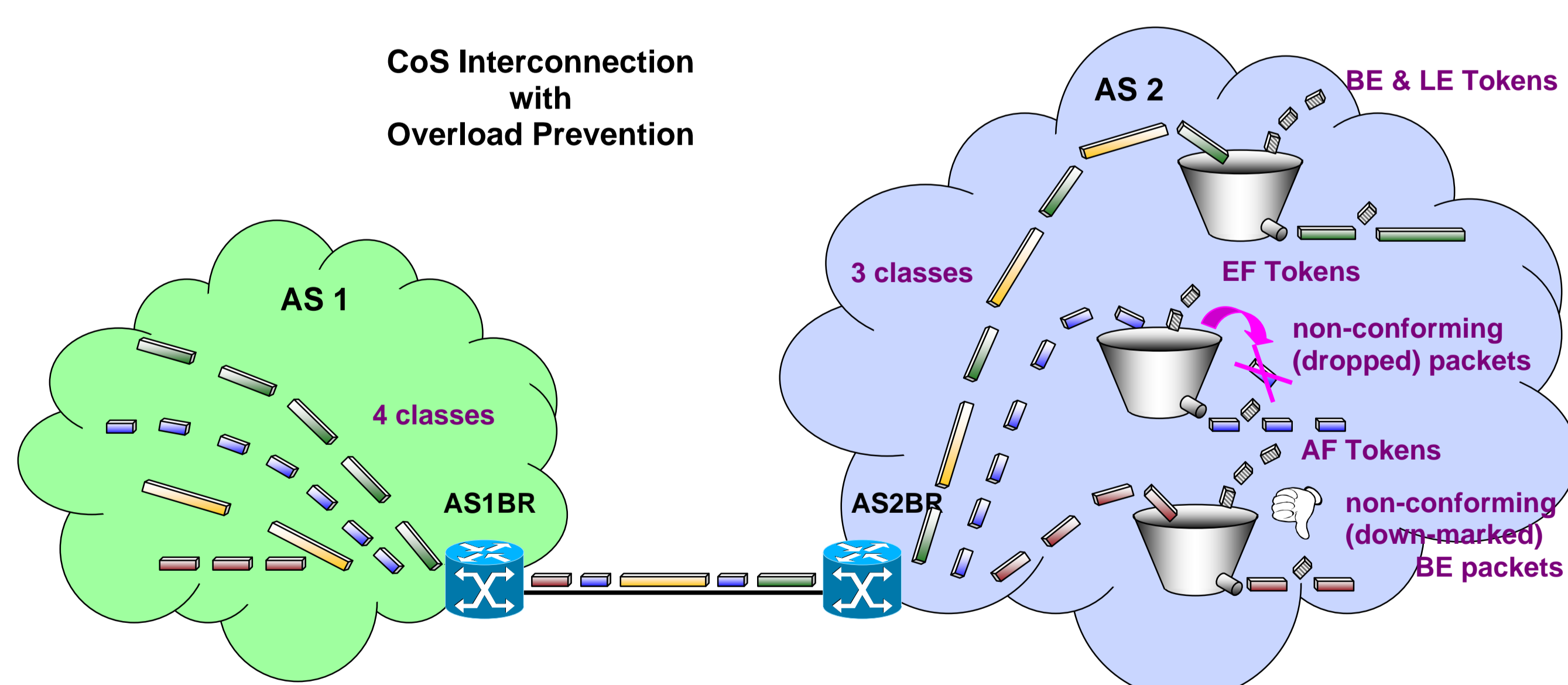
Cross-Layer Mapping

Disclose Intra-AS mappings for Inter-AS use



Class-Overload prevention

Token Bucket ingress limitation



Implementation / Results

- Linux Quagga implementation
- Wireshark implementation (version 1.2.0)
- Online decoding form http://www.bgp-qos.org/draft-knoll/decode_attributes.php
- Successful test with Cisco routers
- OMNET++ simulations especially on mappings between differing class set support
- Resource estimates: < 1MB additional RIB space for 4 classes on 2 layers in global usage scenario
- Currently implementing a Linux-based remote management of legacy router equipment.

