IEEE802.1Qat: Stream Reservation Protocol
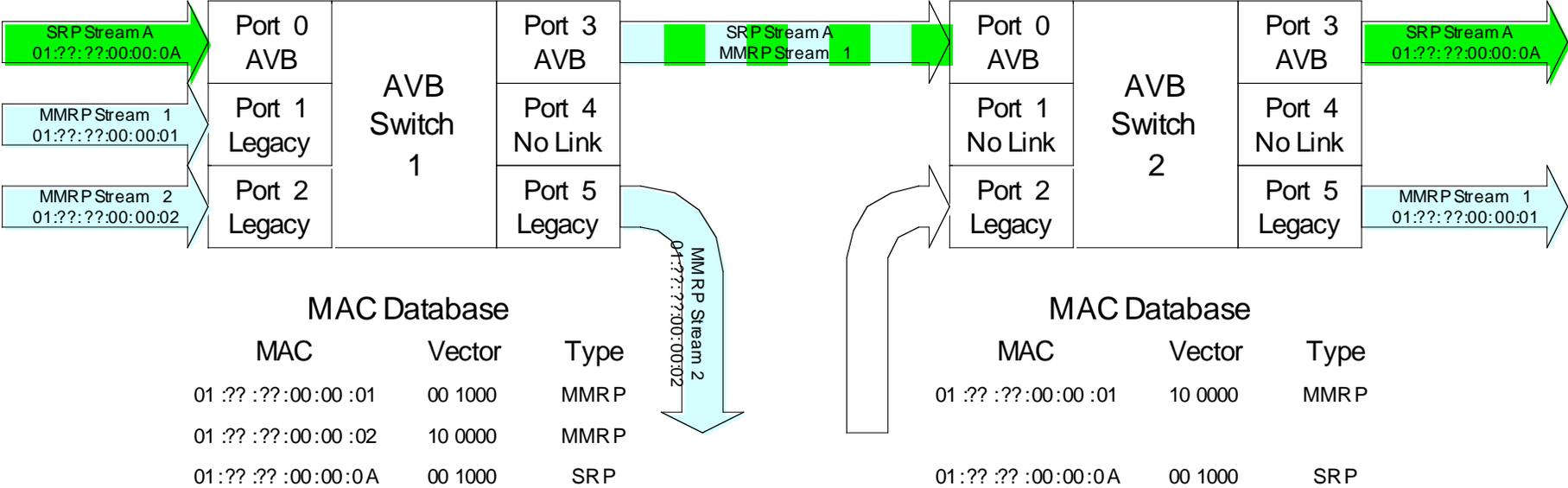
Felix Feng

Samsung

From the PAR:

❑This standard specifies protocols, procedures and managed objects, usable by existing higher layer mechanisms, that allow network resources to be reserved for specific traffic streams traversing a bridged local area network. It identifies traffic streams to a level sufficient for bridges to determine the required resources and provides a mechanism for dynamic maintenance of those resources.

❑This standard provides a signaling protocol to enable the end-to-end management of resource reservation for QoS guaranteed streams. The signaling protocol facilitates the registration, deregistration, and retention of resource reservation information in relevant network elements. The signaling protocol is an essential component for automatic configuration in bridged local area network applications that require latency and bandwidth guarantees.
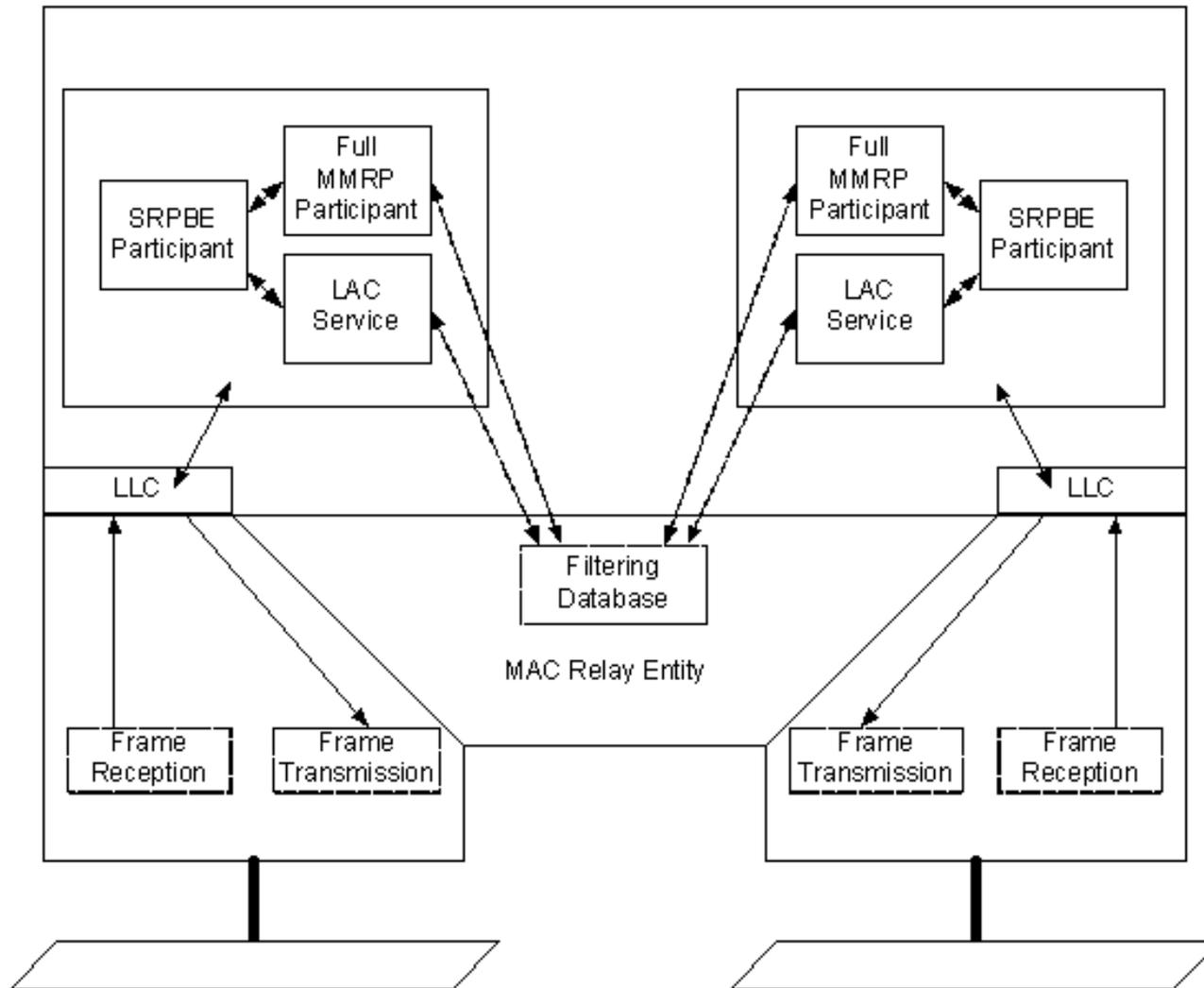
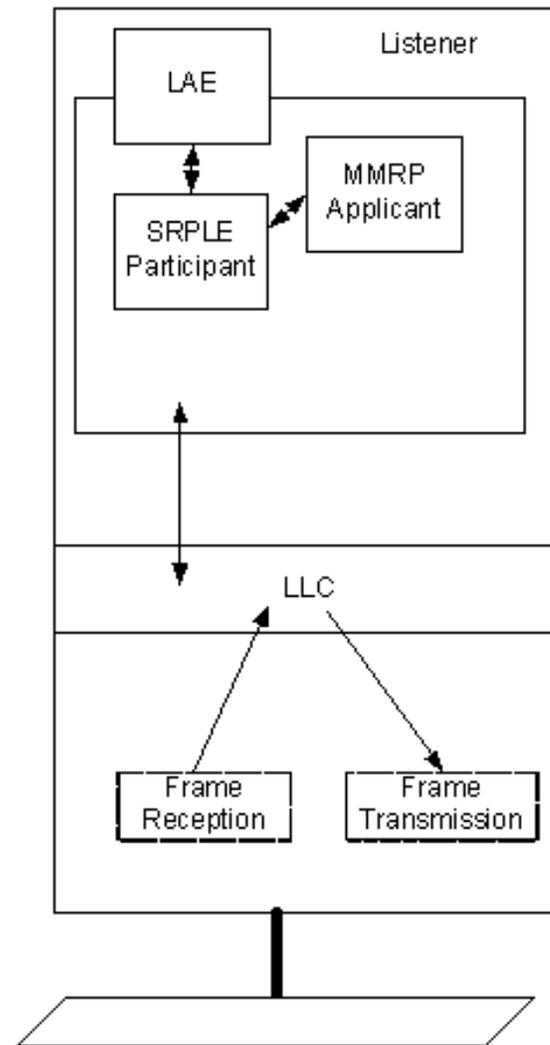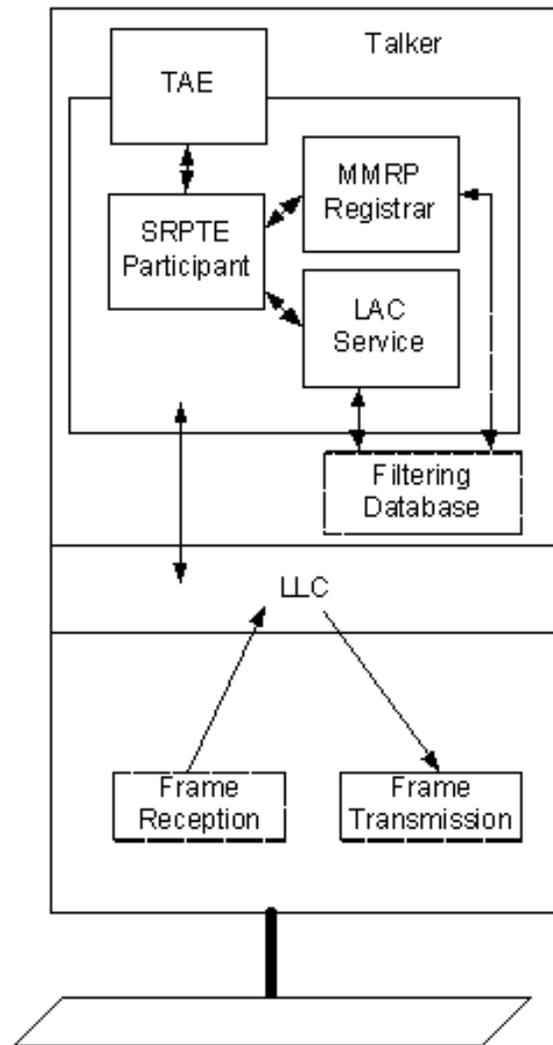# Current status

❑The latest draft D0.8 can be accessed here:
- http://www.ieee802.org/1/files/private/at-drafts/d0/802-1at-d0-8.pdf

Purpose

	Port 0 AVB		Port 3 AVB			Port 0 AVB		Port 3 AVB	

SRP Stream A
01:??:??:00:00:0A

MMRP Stream 1
01:??:??:00:00:01

MMRP Stream 2
01:??:??:00:00:02

Port 0 AVB

Port 1 Legacy

Port 2 Legacy

AVB Switch 1

Port 3 AVB

Port 4 No Link

Port 5 Legacy

SRP Stream A
MMRP Stream 1

Port 0 AVB

Port 1 No Link

Port 2 Legacy

AVB Switch 2

Port 3 AVB

Port 4 No Link

Port 5 Legacy

SRP Stream A
01:??:??:00:00:0A

MMRP Stream 1
01:??:??:00:00:01

MMRP Stream 2
01:??:??:00:00:02

MAC Database

MAC	Vector	Type
01 :?? :??:00:00 :01	00 1000	MMRP
01 :?? :??:00:00 :02	10 0000	MMRP
01:?? :?? :00:00:0 A	00 1000	SRP

MAC Database

| MAC	Vector	Type
01 :?? :??:00:00 :01	10 0000	MMRP
01:?? :?? :00:00:0 A	00 1000	SRP

Architecture: Bridge

Architecture: End stations

How it works

❑SRP consists of a registration protocol and a reservation protocol. The registration protocol is initiated by listeners.

- ▪Done via 802.1ak "Multiple Multicast Registration Protocol"

- ▪Its operation makes the talker and bridges aware the presence of listeners, and creates a subtree of the spanning tree that provides a forwarding path between a talker and any registered listeners.

❑The reservation protocol is triggered by the registration and de-registration events. It operates the reception and transmission of reservation messages over the subtree that the registration protocol created.

How it works: Registration
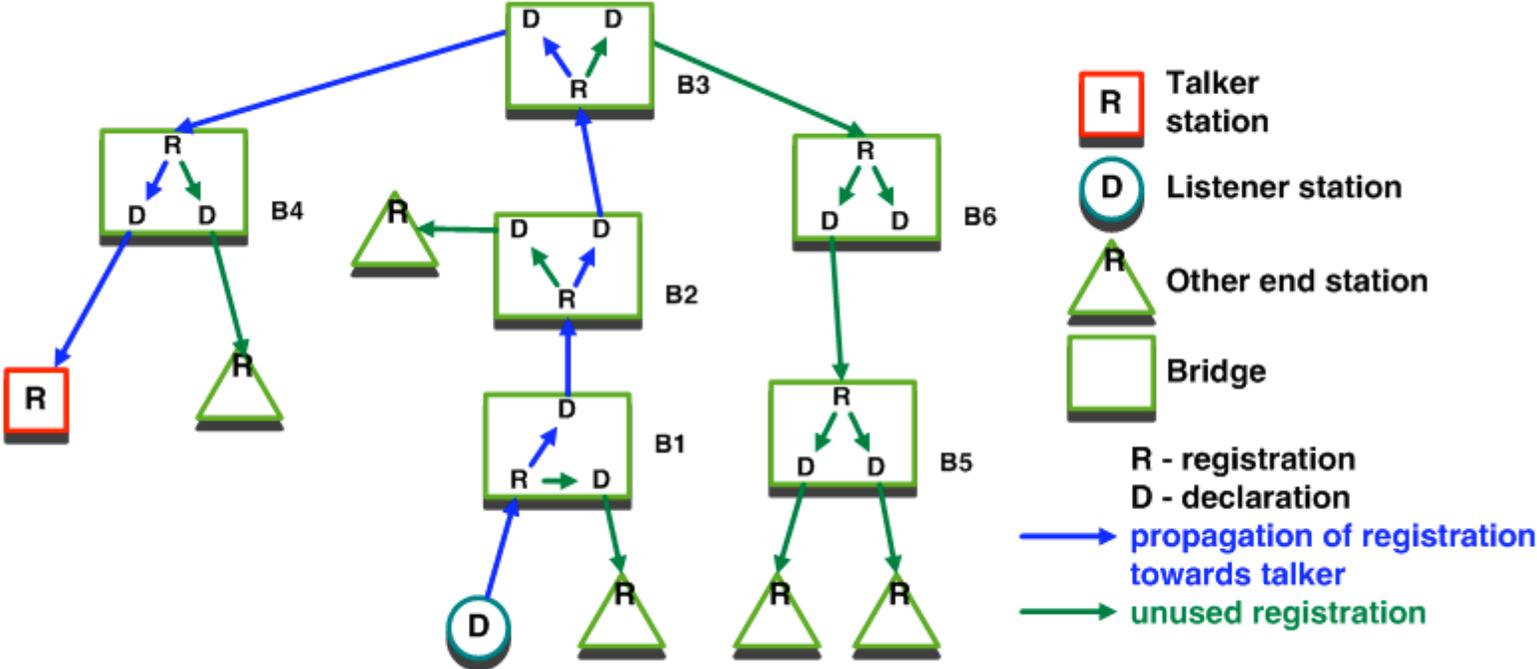
How it works: Reservation
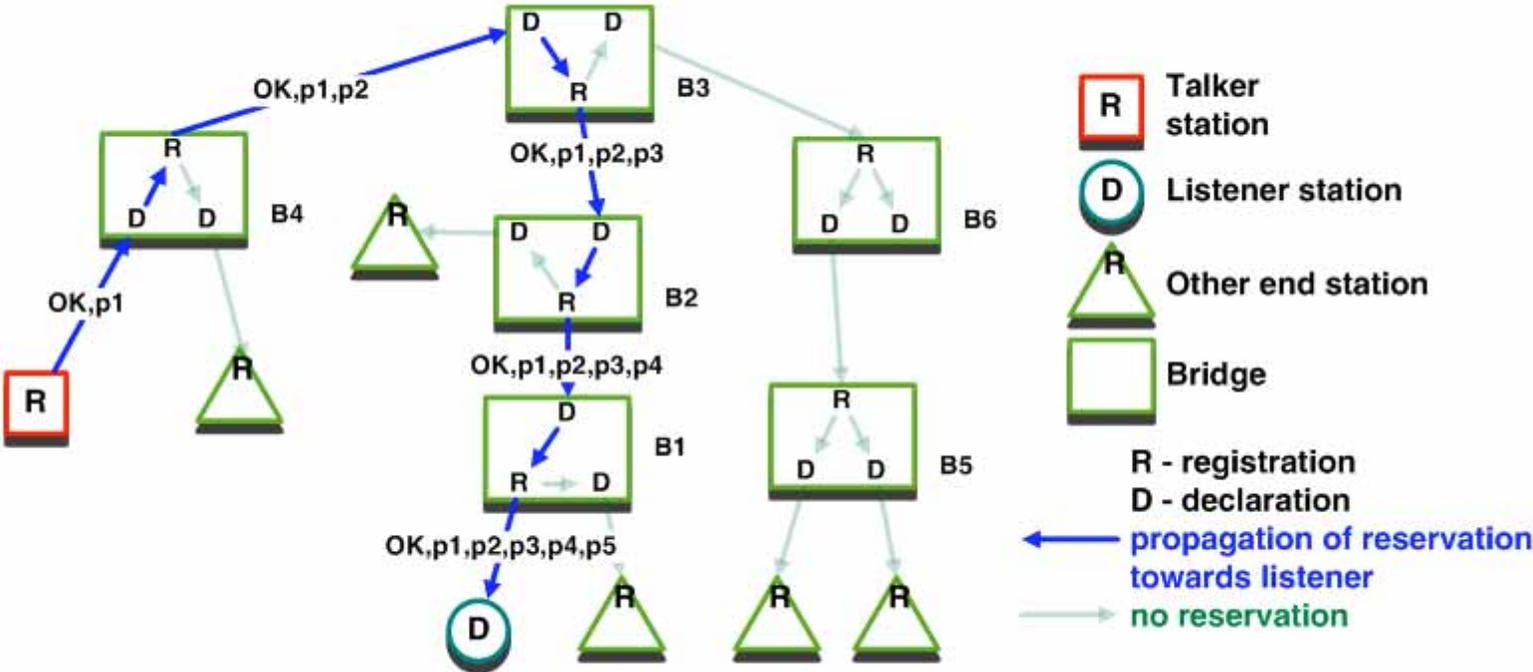
How it works: Failed Reservation