Address Resolution For IP Datagrams Over MPEG-2 Networks

draft-fair-ipdvb-ar-00.txt

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November 12 2003

Resolving Addresses

Not just a single "MAC address"

- MPEG-2 TS PHY
- MPEG-2 TS PID
- MPEG-2 Receiver ID/Address

Lots of Receivers - 100s, 1000s, ...

Cost of transmission - tables good

Unicast & multicast cases may differ

Three basic modes of operation

Pre-assigned	Configured by user, or out-of-band
Announced	Information distributed (e.g. INT)
On Demand	Requires an address resolution protocol

Three mechanisms:

Static entry into neighbor/arp cache

- "This is the MAC/PID for IP address"

Unsolicited advertisment tables:

- "Here are the MAC/PIDs for these IP addresses"

Query/response mode:

- "Send me the MAC/PID for this IP address"

Progress since last IETF

Discussions on the mailing list focused on the INT solution

Use of INT standard (supported by DVB)

A new protocol needs to take INT solution into account

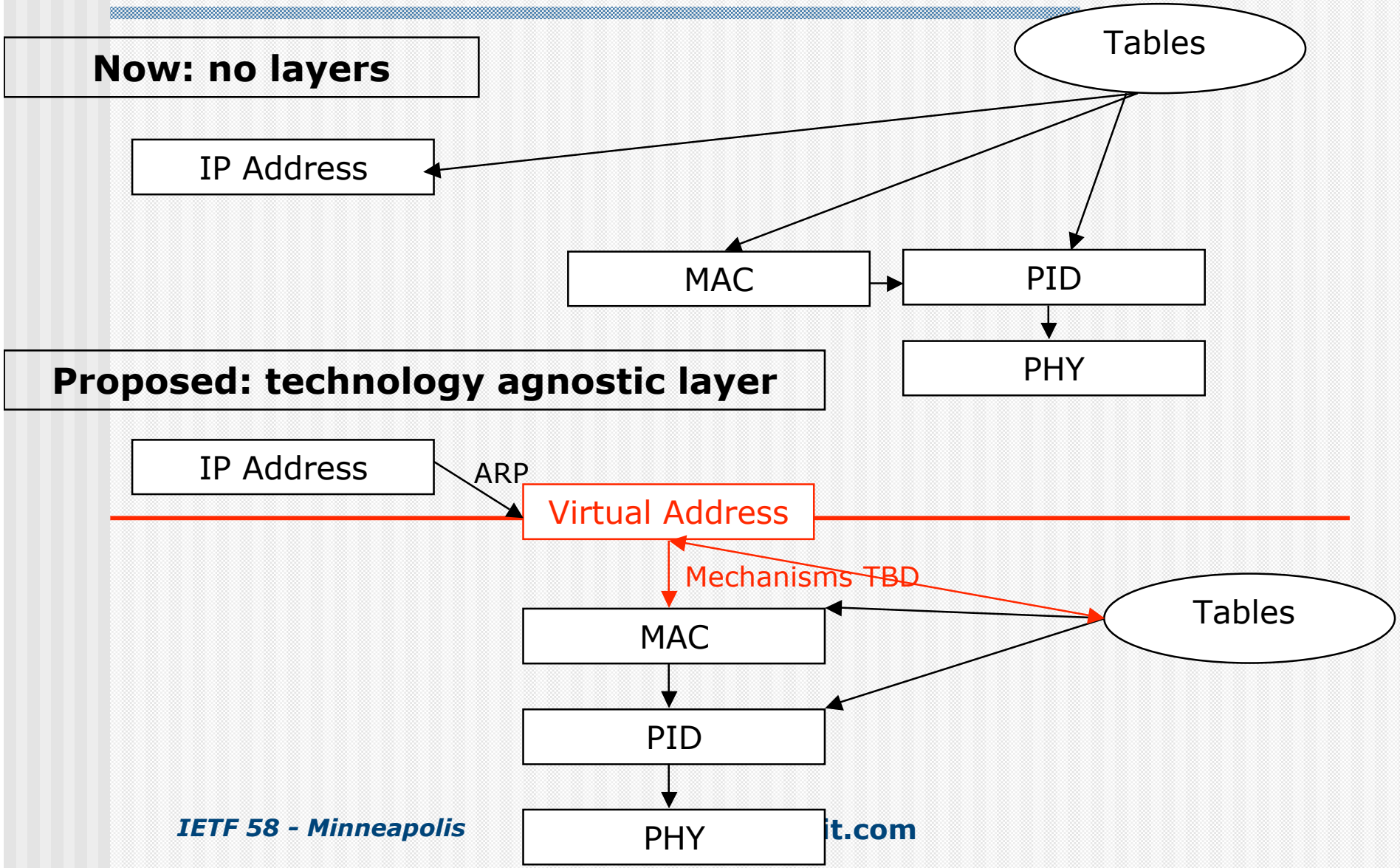
- INT defined for multicast (and unicast)
- Link to MMT favored by DVB-RCS community (alternative)
- Issues:
  - Timing between table updates
  - Tables bring information “IN”;
  - Need ways to send information “OUT”
  - – interaction mechanisms

New Inputs

Review current work at ETSI on satellite network architecture

- Use a technology agnostic "virtual" access interface
- Allows:
  - IP Layer to be independent of the DVB layer
  - Separates IP address resolution from lower-layer implementation
- *Could* provide a solution using tables for MAC and PID assignment while keeping IP layer protocols untouched

Address Resolution



Evolution

No new draft presented for this BOF

New inputs to be discussed on list :-)

New version prepared after IETF 58

Architecture concept

- Virtual access point definition
- Definition of an AR approach for unicast
- Dynamic Address Resolution

Multicast AR concepts

Mapping IP to MAC Addresses to PIDs

- Multi-level process needed with some dynamic assignment
- Use of tables for L2 (and lower) mapping

Move from Informational to Standards Track?

Open Issues

Multicast & Scoped Multicast Addresses

To be part of "overall" protocol
or a specific protocol
i.e. one protocol spec or two specs?

Ensuring a technology agnostic solution

Move from one MPEG-based network to another;
Concept of technology independent layers

Treatment of link-local; broadcast packets; etc

Security

Inputs needed:
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