IP over MPEG-2/DVB (ipdvb) WG

THURSDAY, November 11th, 2004
15:30-17:30 Afternoon Session II

CHAIR:

Gorry Fairhurst <gorry@erg.abdn.ac.uk>

Active Drafts:

draft-ipdvb-arch-01.txt
draft-ipdvb-ule-02.txt

draft-collini-ipdvb-xule-00.txt
draft-fair-ipdvb-ar-02.txt
draft-mjm-ipdvb-config-xx.txt (see mailing list)

Archive:

http://www.erg.abdn.ac.uk/ipdvb/archive
ftp://ftp.ietf.org/ietf-mail-archive/ipdvb/

2nd IETF ipdvb WG meeting

Agenda

1. **Agenda Bashing (5 minutes) Chair**
   - Election of scribes

2. **Working Group Status (10 minutes) Chair**

3. **Requirements/Architecture (15 minutes) M-JM**
   draft-ipdvb-arch-01.txt
   - Changes since last meeting
   - Results of Working Group Last Call (WGLC)

4. **Ultra Lightweight Encapsulation (10 minutes) GF**
   draft-ipdvb-ule-02.txt
   - Changes since rev -01 & Current status

5. **ULE Extension Headers (5 minutes) GF**
   draft-collini-ipdvb-xule-00.txt
   - Current status

Agenda

6. Address Resolution (20 minutes) M-JM

draft-fair-ipdvb-ar-02.txt

draft-mjm-ipdvb-config-00.txt (see mailing list)

- Discussion of Requirements
- Current status

7. XML for Receiver AR Config (15 minutes) MS

8. Review of AR Config/Protocol (15 minutes) Chair

- Open discussion

9. Review of Milestones (10 minutes) Chair

10. Close

http://www.erg.abdn.ac.uk/ipdvb/meetings/11-11-02-IETF-61-Washington/

IPR Notice

You MUST disclose any IPR you know of relating to the technology under discussion

When starting a presentation you MUST say if:

- There is IPR associated with your draft
- The restrictions listed in section 5 of RFC 3667 apply to
  - Your draft.
  - When asking questions
  - Commenting on a draft

BCP78 (RFC 3667), BCP79 (RFC 3668) and the “Note Well” text

WG Status

Gorry Fairhurst <gorry@erg.abdn.ac.uk>

What is ipdvb?

Goals

To make IP over MPEG-2 easy/flexible
A longer-term ip-centric view

IPv4 and IPv6 and ....
Standard configuration for L2 Info (PID resolution)
IP-based autoconfiguration

Focus on MPEG-2/DVB/... Transport Stream

Integrated part of NG internet!

Active IDs

Framework/Architecture ID (INFO)

draft-ipdvb-arch-01.txt

Ultra Lightweight Encapsulation (ULE) (STD)

draft-ipdvb-ule-02.txt

draft-collini-ipdvb-xule-00.txt *

Address Resolution Framework (INFO)

draft-fair-ipdvb-ar-02.txt *

Address Resolution Protocol (STD)

draft-mjm-ipdvb-config-00.txt *

* Individual Submission

Milestones

Done Draft of a WG Architecture ID
Done Draft of a WG ID on Encapsulation (ULE)

Jul 04 Draft of a WG ID on AR Framework
Jul 04 Submit Architecture to IESG

Oct 04 Draft of a WG ID on AR Protocol
Oct 04 Submit Encapsulation to IESG

Apr 05 Submit AR Framework to IESG
Aug 05 Submit AR Protocol to IESG
Aug 05 Progress ULE RFC along IETF Standards Track

Sept 05 Recharter or close WG?

ARCH Status

Marie-Jose Montpetit
(mmontpetit@motorola.com)

ARCH

Main purpose:

- Establish terminology
- Define implementation scenarios -> more than use-cases
- Relationship to existing work in ATSC, DVB, ISO, etc
- Establish WG requirements

Scenarios

A) Broadcast TV/Radio (Terrestrial/Cable/Satellite..)

B) ISP sharing Broadcast TV/Radio (Hybrid/mcast)

C) Uni-directional Star IP-only (Hybrid/mcast)

D) Datacast Overlay (e.g. DVB-H)

E) IP Point-to-Point / Point-to-(multi)Point Links (e.g. Core IP)

F) Two-Way IP Networks (e.g. cable, DVB-RCS,...)

Differing requirements.... Common Link technology

Changes since last rev.

Current rev (v01) completed WGLC

This version was updated after IETF-60 discussions:

Removed redundant AR info and clarify AR reqs.
Multicast address scoping moved to section on multicast AR.
Removed examples in AR appendix.

Added a small description of "e2e" management requirements.
Updated reference list.
Updated terminology to agree with that in ULE Spec.

Review by all authors to fix last known inconsistencies.

WGLC

One technical issue:

- Mandatory or Optional Link Security

NiTs:

- Page numbering; figures; Typos.

Next Step

Resolve issue raised during WGLC (i.e. security)

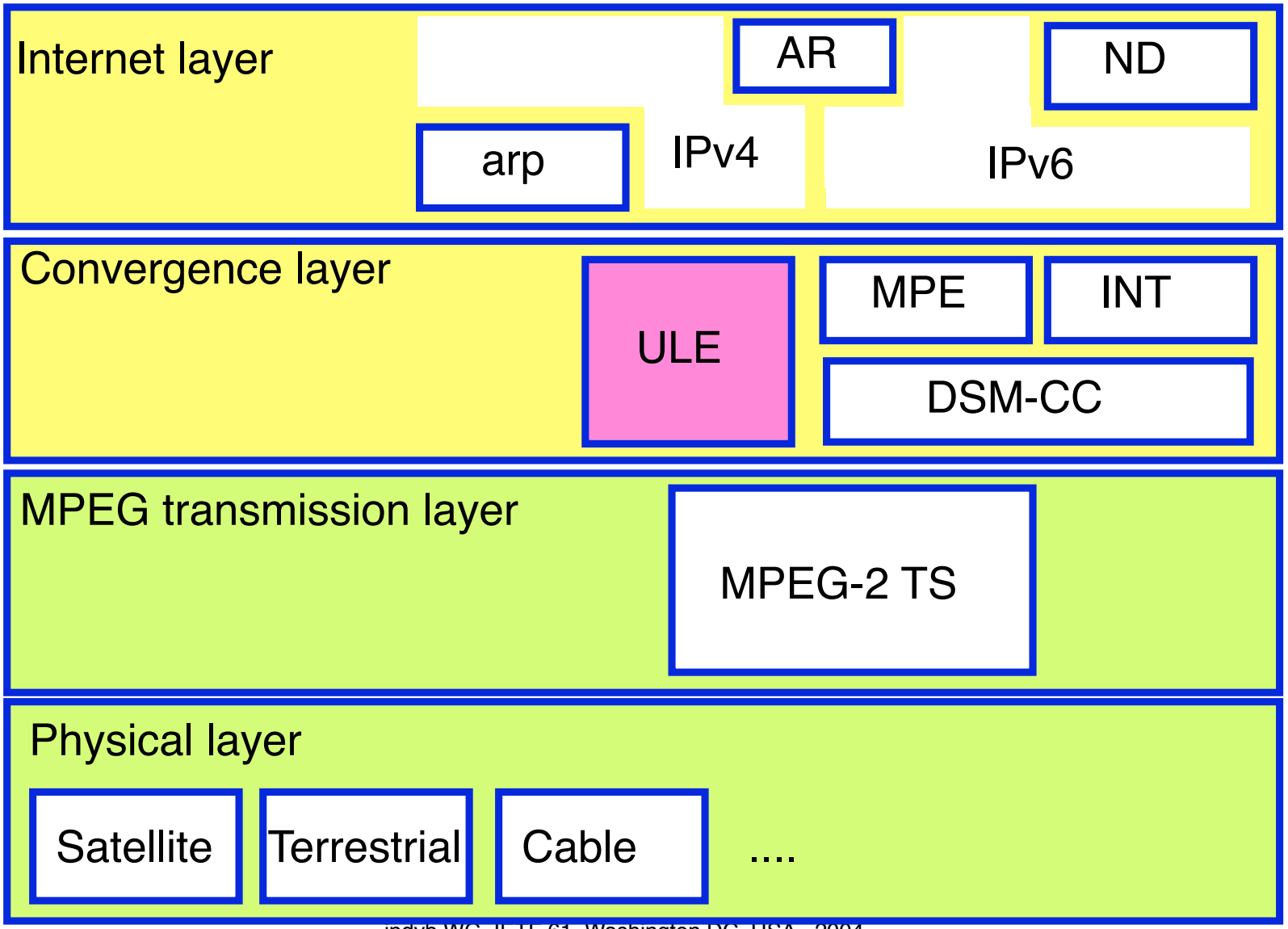
Re-issue rev -03 by end Nov. (highlight changes to the list)

Request IESG to process this as an INFORMATIONAL document.

ULE Status

Gorry Fairhurst <gorry@erg.abdn.ac.uk>

IP over MPEG-2/DVB Transport (ip-dvb)



Changes since last rev.

Rev -02 October 2004

Revised IPR disclosure
Revised Copyright statement

Section 5 added ULE extension headers (as discussed at IETF-60)

NiTs:

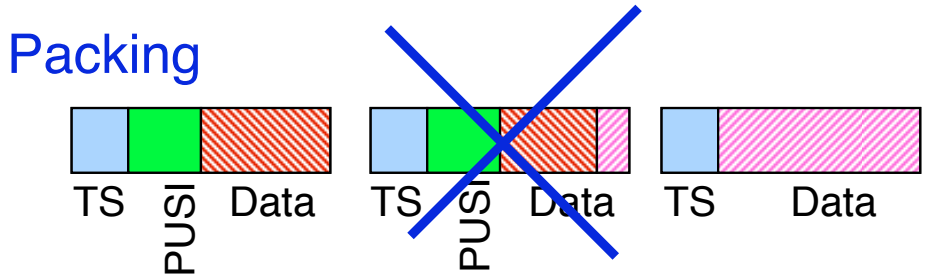
- Correction of figure numbering
- Correction of capitilisation in Transport Stream definition
- Replaced } with] after ISO_DSMCC
- Replaced reference to section 6.3 with 7.3
- Replaced reference to figure 6 with 7
- Note added to figure 9

Rev -02: Whoops!

```
ULE SNDU Length   :              63 decimal
D-bit value   :                  0 (NPA Present)
ULE Protocol Type :              0x86dd (IPv6)
Destination ULE NPA Address:     01:02:03:04:05:06
ULE CRC32 :                      0x784679a5

Source IPv6:                     2001:660:3008:1789::5
Destination IPv6:                2001:660:3008:1789::6

SNDU contents (including CRC-32):

0000:  00 3f 86 dd 01 02 03 04 05 06 60 00 00 00 00 0d
0010:  3a 40 20 01 06 60 30 08 17 89 00 00 00 00 00 00
0020:  00 05 20 01 06 60 30 08 17 89 00 00 00 00 00 00
0030:  00 06 80 00 9d 8c 06 38 00 04 00 00 00 00 00 78
0040:  46 79 a5
```

Rework hexadecimal example in the annexe
to include a valid MAC address for an IPv6 unicast packet ;-)

Rev -02: 7.1.1/7.2



Issue:

What to do when the CRC fails in a previous packed SNDU?

a) Discard Corrupted SNDU + MUST enter Idle state

In rev (-01, -02)

or

b) Discard Corrupted SNDU + Continue unpacking next

In next rev ?

Revert to (a) in next rev !!!

Changes proposed for rev-03.

7.1.1 Range of PP values updated to 0-181 (when validating PP)

NiTs:

- Changed text in DSMCC definition -> “Media”
- Format of page Breaks was updated
- Check for <- -> sequences of characters
- Update refs to add RFC3667 / 3668

New rev (-03) to be submitted when ID archive re-opens.

IP over MPEG-2/DVB Transport (ip-dvb)

Update on known implementations

http://www.erg.abdn.ac.uk/ipdvb/ipdvb-impl.html

Next Step

IANA Procedures to be refined.

What level of IETF document do we need to define
a new ULE extension header?

Plan to issue rev -03 by end Nov.

Ready for WGLC?

XULE Status

Gorry Fairhurst <gorry@erg.abdn.ac.uk>

Next Step

XULE defined an extension mechanism

Main features incorporated in ULE

Propose letting draft expire

No *current* proposal to progress with security headers

AR Status

Marie-Jose Montpetit (mmontpetit@motorola.com)

Scope of Draft

Based on ARCH requirements for AR

Review table-based (INT,AIT,MMT) mechanisms to resolve:

- IP addresses to MPEG-2 addresses
- IP addresses to MAC addresses

Review known implementations and solved/known issues

Set the basis for a coherent view of AR in MPEG-2 based networks

Changes since last rev.

Current rev (v02 individual)

This version was updated after IETF-60 discussions:

- Document was split in two parts:
  - Strict review of existing mechanisms and known implementations (this rev.)
  - Proposed protocol and semantics (new ID)
- Added new author (Izu)
- Added Wishnet experiments
- Edited wording and structure

Changes proposed for rev-03.

WG inputs needed on more specific implementations

- INT usage for IP/PID, IP/MAC resolution
- DHCP and NAT issues
- RCS use cases
- MHP/OpenCable use cases (AIT etc.)

Add section on experience with ND/ARP

Next Step

New rev end December 2004

Intend to propose adopting as a WG draft?

XML for Receiver AR Configuration

Martin Stiemerling — NEC Network Labs Europe
stiemerling@netlab.nec.de
IPDVB Working Group, 61th IETF meeting

Problem Space

- Configuration of DVB receivers
  - IP address resolution configuration
  - Other IP related configuration (proxies?)
  - Additional configuration (service related)
- Ideally based on XML
- Questions are
  - Which configuration scenarios?
  - What exactly to configure?
  - How to configure? (the mechanisms)

Related Areas: Layer 2

- IP over Cable Data Networks (IPCDN) working group
  - http://www.ietf.org/html.charters/ipcdn-charter.html
  - DOCSIS MIBs
- DVB
  - SI tables
  - MHP
- Others ?

Related Areas: Layer 3+

- Network Configuration (NETCONF)
  - http://www.ietf.org/html.charters/netconf-charter.html
- Dynamic Host Configuration (DHC)
  - http://www.ietf.org/html.charters/dhc-charter.html
- Basic IP techniques
  - IPv6 Neighbour Discovery
  - IPv4 Address Resolution Protocol
- Others ?

Configuration Scenarios

- IP configuration
  - Basic (DVB) configuration available
  - Some other Internet uplink available (ISDN etc)
  - Multicast configuration and routing
  - Broadcast configuration (“open bitstream” w/o registration)
  - Security configuration (e.g., keys)
- Complete bootstrap
  - No configuration available at all
  - Needs to get everything
  - DVB configuration
  - IP configuration
  - Router scenario (e.g., full-duplex satellite transmission link)

Issues

- Who is in control of receiver
  - Operator (like with MHP)
  - Owner at home (like with PC DVB adaptor)
  - Network Operator providing router
- Noticed a difference between IPDVB and
  - NETCONF: made for single router configuration
  - IPCDN: made for configuration of $1*10^3$ hosts per head end
- IPDVB must take care about up to $1*10^5$ receivers
  - Even some scenarios may require only <10 receivers
- Too early to define parameters
- Define first usage scenarios
- Explore related techniques
- Where do we want to go?

Thank you!

Question?

XML-based AR Configuration Protocol

draft-mjm-ipdvb-config-00.txt (see mailing list)

Marie-Jose Montpetit
mmontpetit@motorola.com

Scope of Draft

Based on ARCH requirements for AR

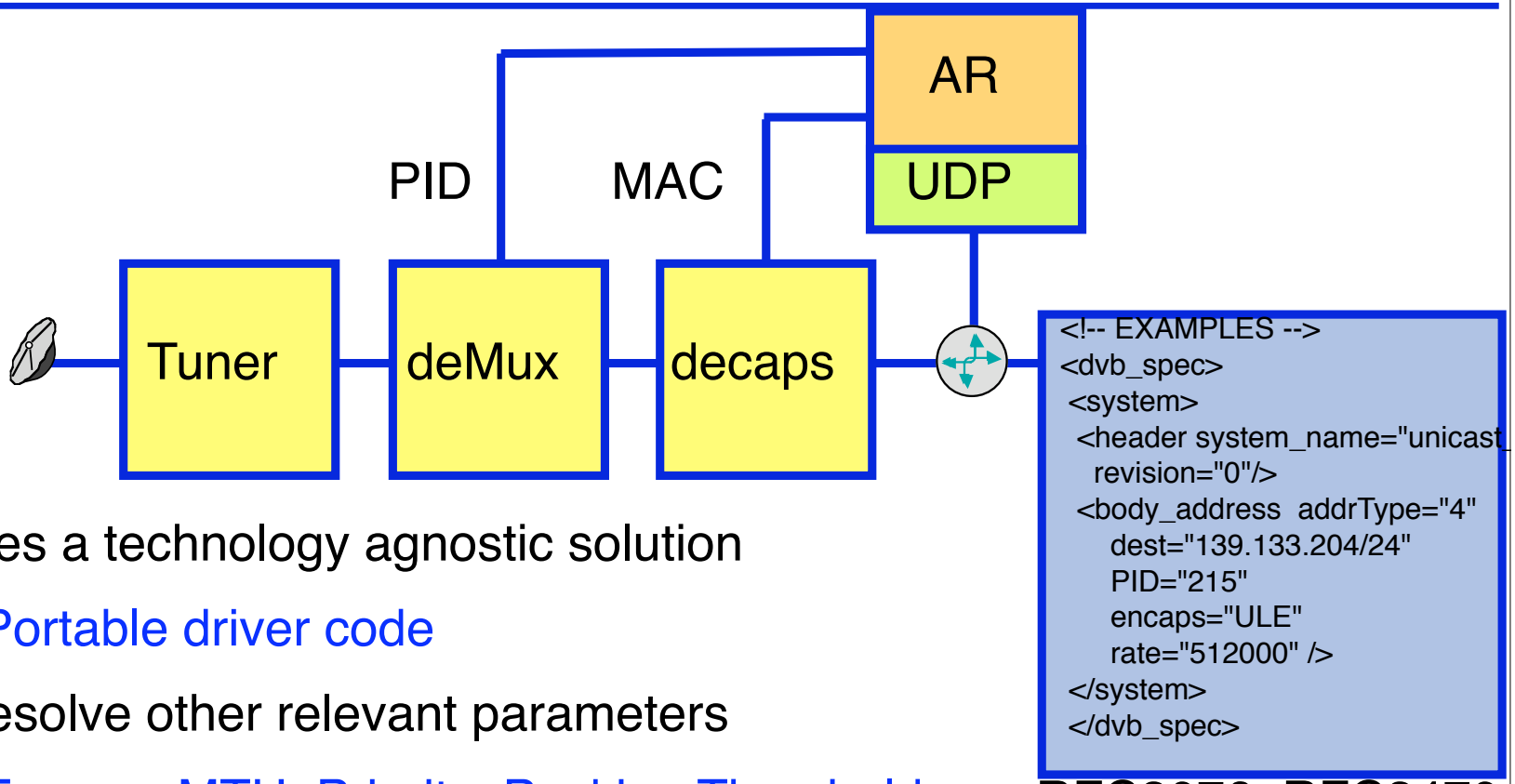
Build on the table-based (INT,AIT,MMT) mechanisms:

Define a simple autoconfiguration protocol based on common semantics

XML provides the common language for defining extended AR records for unicast and mulicast single addresses and group of addresses

Build on current mechanisms for above IP network configuration
Raises the potential of an industry-wide IETF standard mechanism

AR *above* IP



Ensures a technology agnostic solution

Portable driver code

Can resolve other relevant parameters

Encaps; MTU; Priority; Packing Threshold; ...

RFC3076; RFC3470

Closer integration with IP networking

New protocol required

Requirements

Syntax must be extensible
- Future fields: QoS; DVB-S2; ...
- Textual format allows standard tools :-)
- Textual format increase table size :-(

Optimisations for large scale multicast
- Hashing techniques reduce lookups

Support source/destination scoping
- Policy varies by ISP
- Link-local; subnet Broadcast; etc

Changes proposed for rev-01.

XML description of AR records

Delivery mechanisms

- Web page
- UDP
- SOAP/UDP (with security mechanisms)
- SIP/UDP

Running code

More participants from the different industries that compose the MPEG-2 community

Review of AR Config/Protocol

WG Chair

IP over MPEG-2/DVB Transport (ip-dvb)

Stage 1a: Identify what exists and what is needed
- Informational document relating to IP traffic
- Broadcast scenarios: INT; MMT; PSIP; etc.

Stage 1b: Identify what exists and what is needed
- What is needed to make IETF protocols work?
- ARP and ND operation

Stage 2a: Specify AR Syntax for 1a
- IP-based table-based IPv4/IPv6
- QoS; Policy options; Authentication; etc.

Stage 2b: Specify AR Transport for 1a
- UDP-based & Multicast-capable

Review of Milestones

WG Chair <gorry@erg.abdn.ac.uk>

IP over MPEG-2/DVB Transport (ip-dvb)

1. **Architecture/Requirements** (INFORMATIONAL)

2. **Encapsulation for MPEG-2 TS - ULE** (STANDARDS TRACK)

3. **Address Resolution Mechanisms for IPv4/IPv6** (INFORMATIONAL)

4. **Address Resolution Protocol(s)** (STANDARDS TRACK)
   Dynamic Unicast & Multicast

Milestone Update

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