

Broadcast meets Internet.

Does the IETF play a role for the convergence of mobile and broadcast environments?

The ipdvb WG case study

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Does the IETF play a role...?

- Yes: works towards all-IP networks
- No: does not care about content

Overview

- History
- IPDVB WG
- IPDVB Status
- IETF mission
- IETF in mobile/broadcast environments
- Conclusion

History

- Internet via Satellite
 - From ADR over VSAT to DVB (HDLC over PPP to ULE)
 - 1995 Telecom Geneva
- Standardization
 - DVB MultiProtocol Encapsulation (MPE)
 - Wallet garden for industry, politics, ...
- ... and the IETF
 - Helsinki DVB-GBS (May 2002)
 - Toulouse Open IP-DVB meeting (June 2002)
 - IETF57 Vienna (Aug 2003)
 - IETF60 San Diego (Aug 2004)
 - IETF63 Paris (Aug 2005)

IPDVB WG

- Chair(s):
 - Gorry Fairhurst <gorry@erg.abdn.ac.uk>
- Internet Area Director(s):
 - Mark Townsley <townsley@cisco.com>
 - Margaret Wasserman <margaret@thingmagic.com>
- Internet Area Advisor:
 - Margaret Wasserman <margaret@thingmagic.com>
- Mailing Lists:
 - General Discussion: ipdvb@erg.abdn.ac.uk
 - To Subscribe: majordomo@erg.abdn.ac.uk
 - In Body: subscribe ipdvb at majordomo@erg.abdn.ac.uk
 - Archive: <http://www.erg.abdn.ac.uk/ipdvb/archive/>

IPDVB WG Charter

- The WG will develop new protocols and architectures to enable better deployment of IP over MPEG-2 transport and provide easier interworking with IP networks. Specific properties of this subnetwork technology include link-layer support for unicast and multicast, large numbers of down-stream receivers, and efficiency of transmission...
- IP over Foo

IPDVB WG Status

- Done Draft of a WG Architecture ID describing usage of MPEG-2 transport for IP transmission.
- Done Draft of a WG ID on the new Encapsulation.
- Done Submit Architecture to IESG
- Done Draft of a WG ID on the AR Framework, specifying mechanisms to perform address resolution.
- Done Submit Encapsulation to IESG
- Jan 06 Draft of a WG ID defining Security Requirements for the ULE protocol
- Mar 06 Submit AR Framework to IESG
- Apr 06 Draft of a WG ID defining an IP Address Resolution (AR) protocol
- Aug 06 Submit ULE Security Requirements to IESG
- Dec 06 Progress the Encapsulation RFC along the IETF standards track
- Jan 07 Submit AR Protocol to IESG

IPDVB WG Status

Ipdvb Status Pages
IP over DVB (Active WG)

[Drafts](#) | [Agendas](#) | [Minutes](#) | [Charter](#) | [List Archive](#) | List search:

[Draft dependency graphs](#)

Draft pages	Latest ver. published	Dated	Status
<i>Active:</i>			
draft-ietf-ipdvb-ar	-01	2005-09-14 15:32	Active
<i>RFC-Editor's Queue:</i>			
draft-ietf-ipdvb-arch	-04	2005-05-02 17:04	RFC Ed Queue
draft-ietf-ipdvb-ule	-06	2005-06-22 15:52	RFC Ed Queue
<i>Related documents:</i>			
draft-cantillo-ipdvb-s2encaps-00.txt	-00	2005-07-19 17:08	
draft-cantillo-ipdvb-s2encaps-01.txt	-01	2005-09-20 13:52	
draft-cruickshank-ipdvb-sec-00.txt	-00	2005-08-23 02:09	
draft-cruickshank-ipdvb-sec-req-00.txt	-00	2005-09-14 15:30	
draft-fair-ipdvb-ar-04.txt	-04	2005-08-23 02:10	
draft-fairhurst-ipdvb-s2-gule-00.txt	-00	2005-09-16 14:02	
draft-stiemerling-ipdvb-config-01.txt	-01	2005-08-23 02:20	

IPDVB WG Status Zoom

Active:

[draft-ietf-ipdvv-ar](#) -01 2005-09-14 15:32 [Active](#)

RFC-Editor's Queue:

[draft-ietf-ipdvv-arch](#) -04 2005-05-02 17:04 [RFC Ed Queue](#)

[draft-ietf-ipdvv-ule](#) -06 2005-06-22 15:52 [RFC Ed Queue](#)

Related documents:

[draft-cantillo-ipdvv-s2encaps-00.txt](#) -00 2005-07-19 17:08

[draft-cantillo-ipdvv-s2encaps-01.txt](#) -01 2005-09-20 13:52

[draft-cruickshank-ipdvv-sec-00.txt](#) -00 2005-08-23 02:09

[draft-cruickshank-ipdvv-sec-req-00.txt](#) -00 2005-09-14 15:30

[draft-fair-ipdvv-ar-04.txt](#) -04 2005-08-23 02:10

[draft-fairhurst-ipdvv-s2-gule-00.txt](#) -00 2005-09-16 14:02

[draft-stiemerling-ipdvv-config-01.txt](#) -01 2005-08-23 02:20

IETF Mission Statement 1o2

- Read ietfjournal.isoc.org
- “The goal of the IETF is to make the Internet work better. ”
- “The mission of the IETF is to produce high quality, relevant technical and engineering documents that influence the way people design, use, and manage the Internet in such a way as to make the Internet work better. These documents include protocol standards, best current practices, and informational documents of various kinds.”

IETF Mission Statement 202

- **Open process** - any interested person can participate in the work, know what is being decided, and make his or her voice heard on the issue. Part of this principle is our commitment to making our documents, our WG mailing lists, our attendance lists, and our meeting minutes publicly available on the Internet.
- **Technical competence** - the issues on which the IETF produces its documents are issues where the IETF has the competence needed to speak to them, and that the IETF is willing to listen to technically competent input from any source. Technical competence also means that we expect IETF output to be designed to sound network engineering principles - this is also often referred to as "engineering quality".
- **Volunteer Core** - our participants and our leadership are people who come to the IETF because they want to do work that furthers the IETF's mission of "making the Internet work better".
- **Rough consensus and running code** - We make standards based on the combined engineering judgement of our participants and our real-world experience in implementing and deploying our specifications.

IETF and BC

- Routing
 - The current activity here includes the task of adding multicast to MPLS. No doubt one of these days we'll see multicast become an accepted and integral part of the portfolio of IP services, but multicast provides a set of technical and business challenges that continue to make its ubiquitous deployment a challenging goal. However there is a lot of interest in multicast these days, and maybe we'll make some progress in this. Also there is the continuing work in extending MPLS into inter-area support.
- IPv6
 - Multi-homing

IETF and Mobile/Wireless

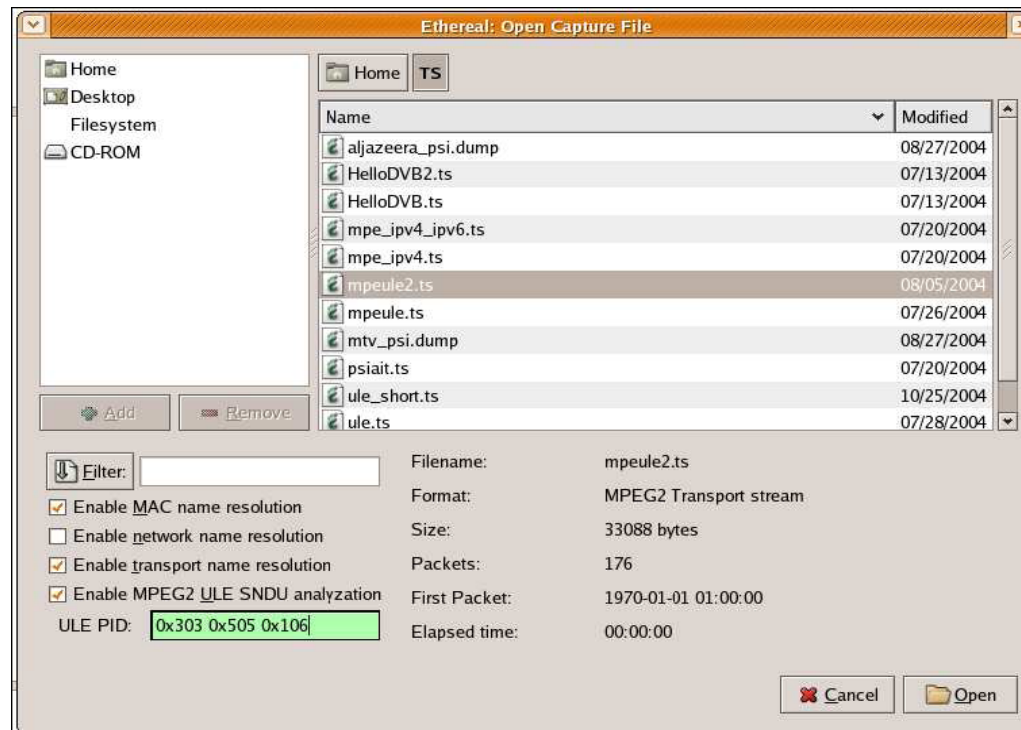
- Work on mobility and wireless topics for IETF has traditionally been confined to the Mobile IP working group, but today wireless and mobile activities are spreading, especially in the Internet area. As of IETF 63, the working groups developing technology important for the wireless Internet consist of one working group in the **Application Area** (GEOPRIV), nine working groups in the **Internet Area** (6LOWPAN, DNA, EAP, HIP, MIP4, MIP6, MIPSHOP, NEMO, and PANA), one working group in the **Operations and Management Area** (CAPWAP), one working group in the **Routing Area** (MANET), and one working group in the **Security Area** (MOBIKE).

Conclusions or (IP and Convergence)

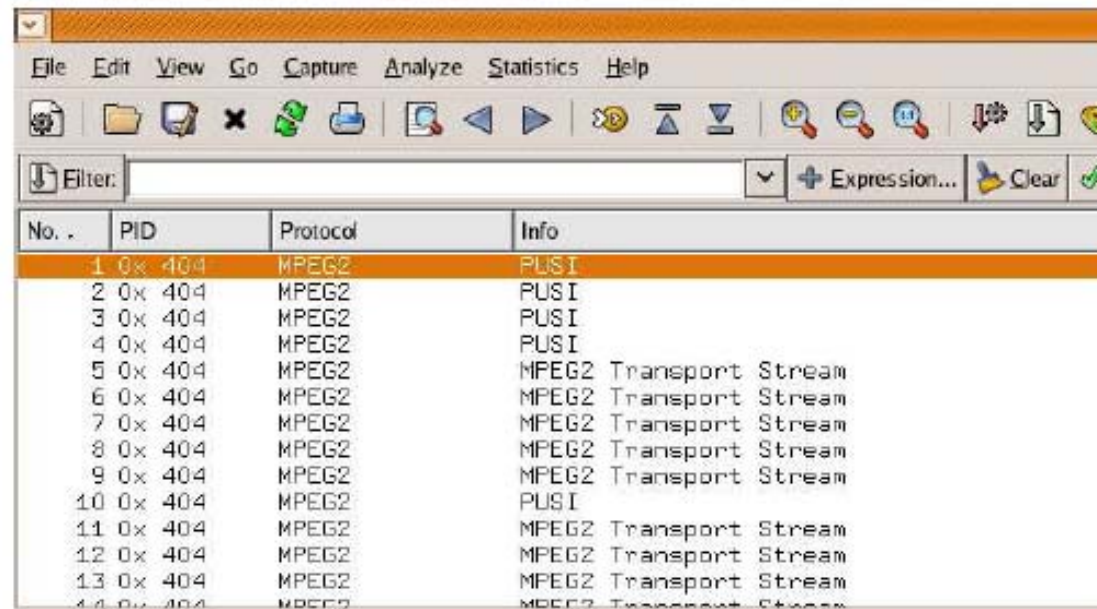
- All-IP
- “All you can eat” vs QoS
- Triple Play
- Telecom vs Broadcast law
- Protocols vs Applications (TCP vs ALF)
- Open Source

Funding is critical

- Dissector for Ethereal instead of command-line tool



Ethereal 1v4



No. .	PID	Protocol	Info
1	0x 404	MPEG2	PSI
2	0x 404	MPEG2	PSI
3	0x 404	MPEG2	PSI
4	0x 404	MPEG2	PSI
5	0x 404	MPEG2	MPEG2 Transport Stream
6	0x 404	MPEG2	MPEG2 Transport Stream
7	0x 404	MPEG2	MPEG2 Transport Stream
8	0x 404	MPEG2	MPEG2 Transport Stream
9	0x 404	MPEG2	MPEG2 Transport Stream
10	0x 404	MPEG2	PSI
11	0x 404	MPEG2	MPEG2 Transport Stream
12	0x 404	MPEG2	MPEG2 Transport Stream
13	0x 404	MPEG2	MPEG2 Transport Stream
14	0x 404	MPEG2	MPEG2 Transport Stream

Ethereal 2v4

```

0000  47 44 04 1e 00 3e b0 61 06 05 c1 00 00 04 03 02  GD...>.e .....
0010  01 45 00 00 54 00 00 40 00 40 01 1e a7 0a 00 04  .E..T..@.@.....
0020  01 0a 00 04 02 08 00 92 ab da 04 00 01 5f f3 fc  .....
0030  40 39 17 0b 00 08 09 0a 0b 0c 0d 0e 0f 10 11 12  09.....
0040  13 14 15 16 17 18 19 1a 1b 1c 1d 1e 1f 20 21 22  .....
0050  23 24 25 26 27 28 29 2a 2b 2c 2d 2e 2f 30 31 32  #$$$%'()*+,-./012
0060  33 34 35 36 37 c5 0a 71 38 ff ff ff ff ff ff ff  34567...q 8.....
0070  ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff  .....
0080  ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff  .....
0090  ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff  .....
00a0  ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff  .....
00b0  ff ff ff ff ff ff ff ff ff ff ff ff ff ff ff  .....
    
```

Ethernet 3v4

```
▷ Frame 1 (188 bytes on wire, 188 bytes captured)
▷ MPEG-2 ISO 13818
  ▾ MPEG2 Section
    table id: 0x3e (DSMCC private_data)
    section syntax indicator: 1
    private indicator: 0
    reserved0: 0x03
    section length: 97
    table id extension: 0x0605
    reserved1: 0x03
    version number: 0
    current next indicator: 1
    section number: 0
    last section number: 0
    CRC32: 0xc50a7136, verification: OK (0xc50a7136)
  ▾ MPEG2 table printer
    reserved1: 3
    payload scrambling control: 0
    address scrambling control: 0
    LLC SNAP flag: 0
    MAC address: 01:02:03:04:05:06 (01:02:03:04:05:06)
  ▷ Internet Protocol, Src Addr: 10.0.4.1 (10.0.4.1), Dst Addr: 10.0.4.2 (:
  ▷ Internet Control Message Protocol
```

Ethereal 4v4

```
▶ Frame 12 (188 bytes on wire, 188 bytes captured)
▶ MPEG-2 ISO 13818
▶ Ultra light weight encapsulation
▼ Ultra light weight encapsulation
  SNDU length: 52
  ULE protocol type: 0x0800
  ULE Dest MAC addr: absent (D-bit: 1)
▶ Internet Protocol, Src Addr: 10.1.3.1 (10.1.3.1), Dst Addr: 10.1.3.2 (:)
▶ Internet Control Message Protocol
  Destination address present field: 0
  ULE crc32: 0x9688dd5f, verification: OK (0x9688dd5f)
▶ Ultra light weight encapsulation
```

The End.

- Thank you.
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