



**Second
W3C Web
and TV
Workshop**

**Metadata and
Service Delivery**

**Session 5
Metadata &
Semantic Web**

Architecture

First of all:

Good morning

And thanks for inviting me!

1

2

About DVB

3

4

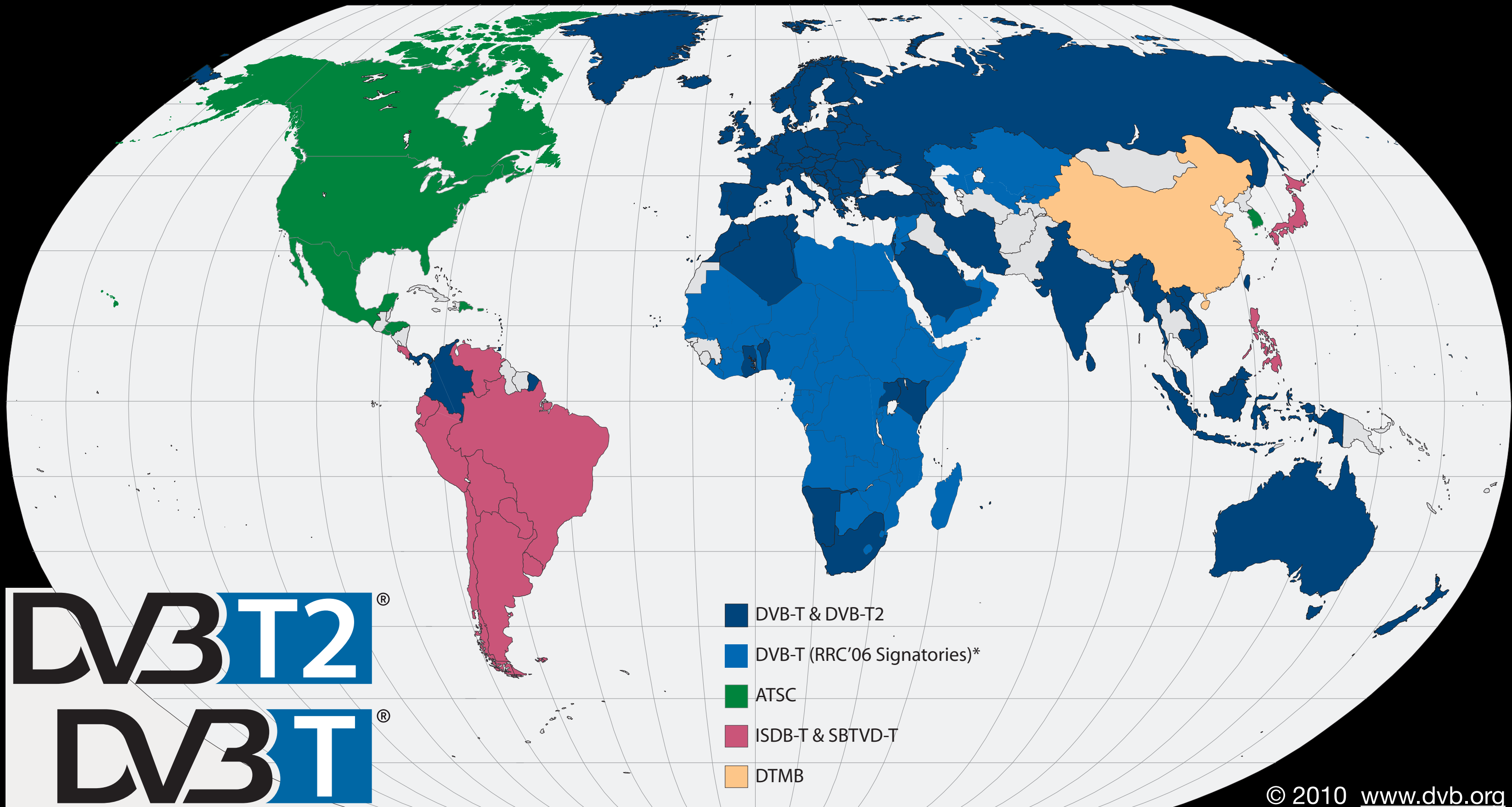
1

The Digital Video Broadcasting Project (DVB) is an industry-led consortium of around 250 broadcasters, manufacturers, network operators, software developers, regulatory bodies and others in over 35 countries committed to designing open technical standards for the global delivery of digital television and data services.

3

2

4



DVB T2®

DVB T®

5000M

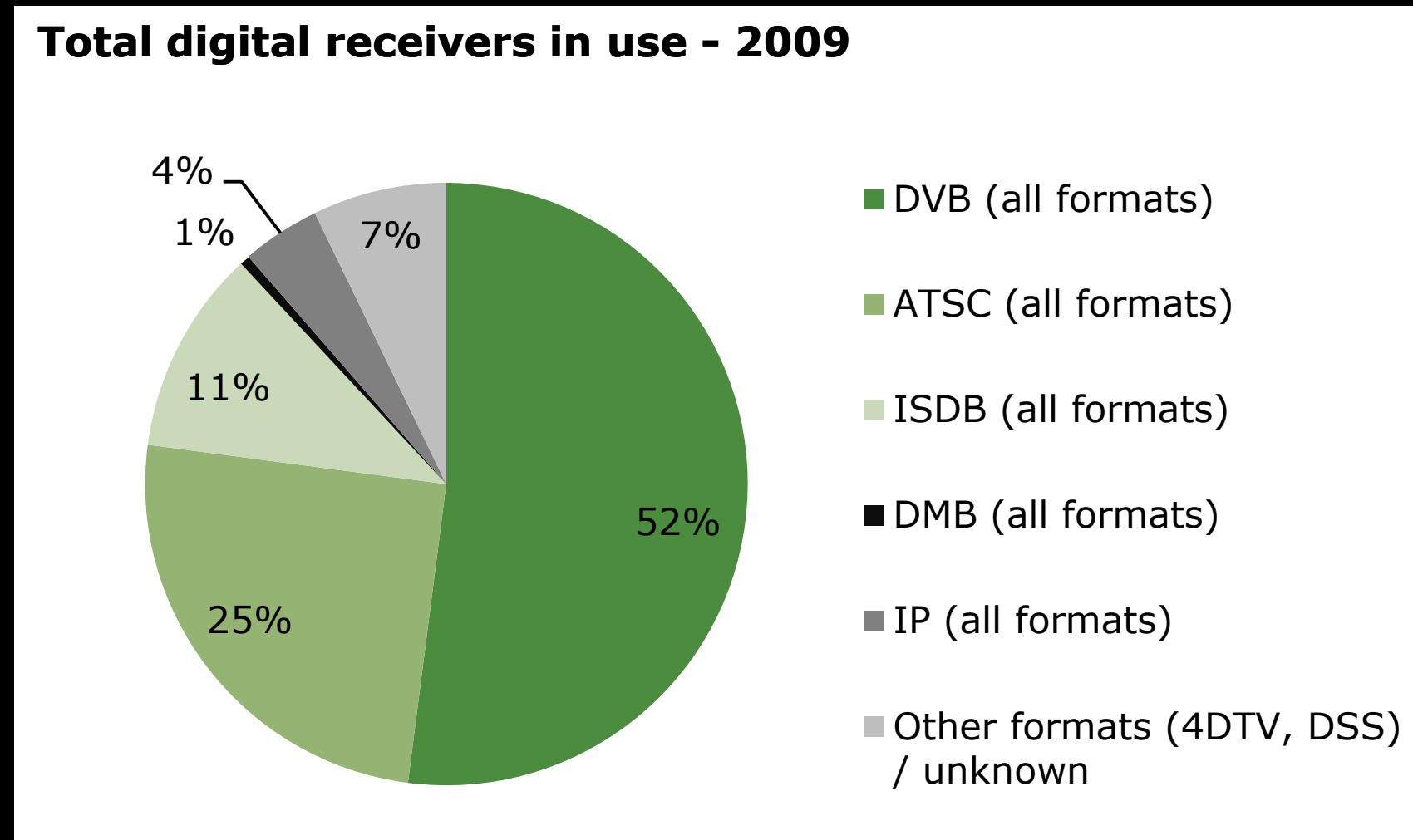
DVB T2[®]

DVB T[®]

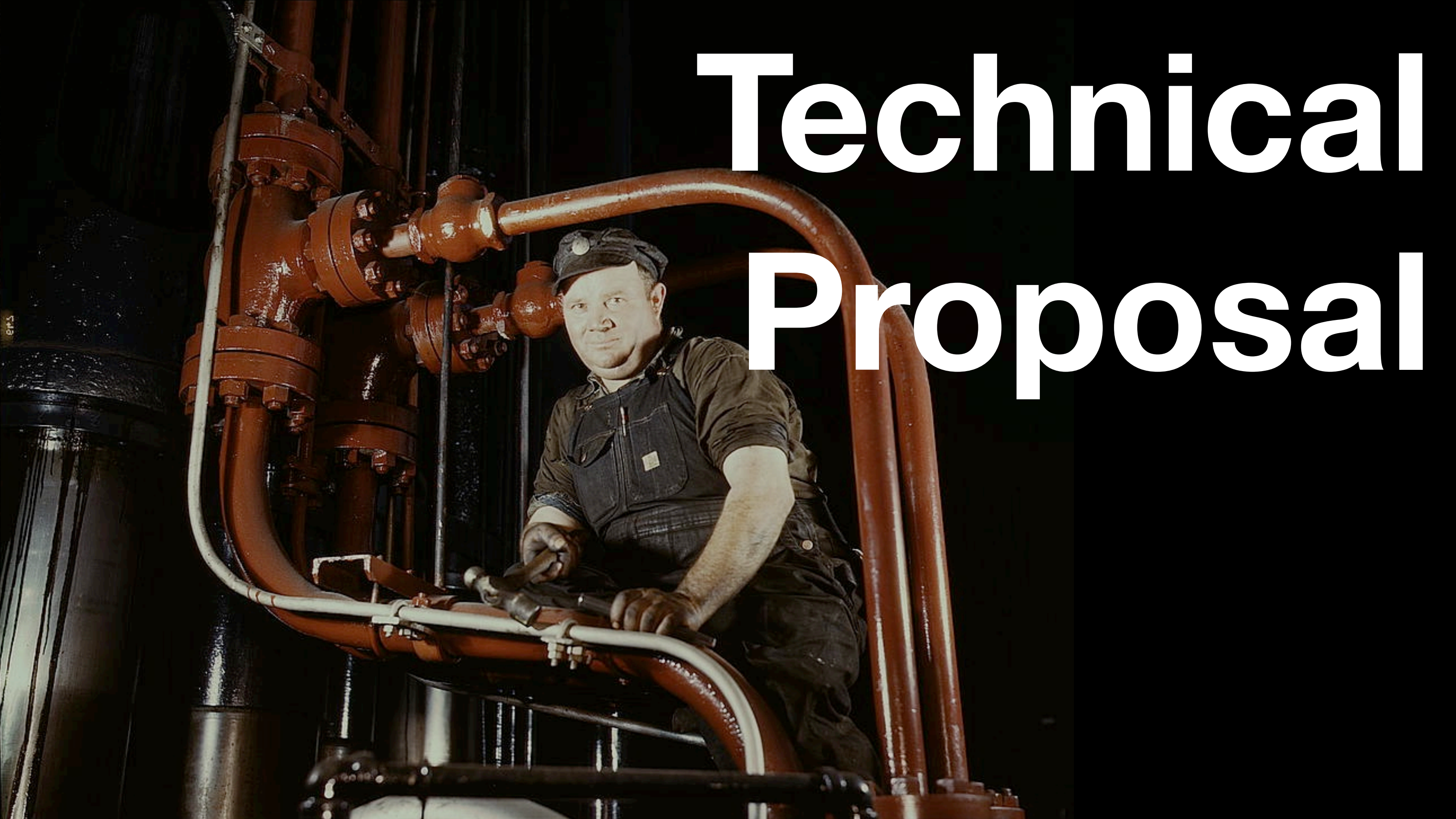
- DVB-T & DVB-T2
- DVB-T (RRC'06 Signatories)*
- ATSC
- ISDB-T & SBTVD-T
- DTMB

Receivers deployed by DVB members as of late 2009

DVB is the most widely used transmission standard in the world



Technical Proposal





tvdude watching #Friends on @BBC.
Hilarious! [crid://bbc.co.uk/Friends](http://bbc.co.uk/Friends)

20 minutes ago via Echofon





tvdude watching #F
Hilarious! [crid://bbc](#)

20 minutes ago via Echofon





tvdude watching #Frie
Hilarious! [crid://bbc.co](#)

20 minutes ago via Echofon

Read more...

Watch

Record



Service Discovery and Selection



**Content
Guide**



TV-Anytime Content Guide

MPEG-B (aka. BiM)

Schema



Classification
Scheme

Segmentation

Rich

Grouping

Localisation

Attributes

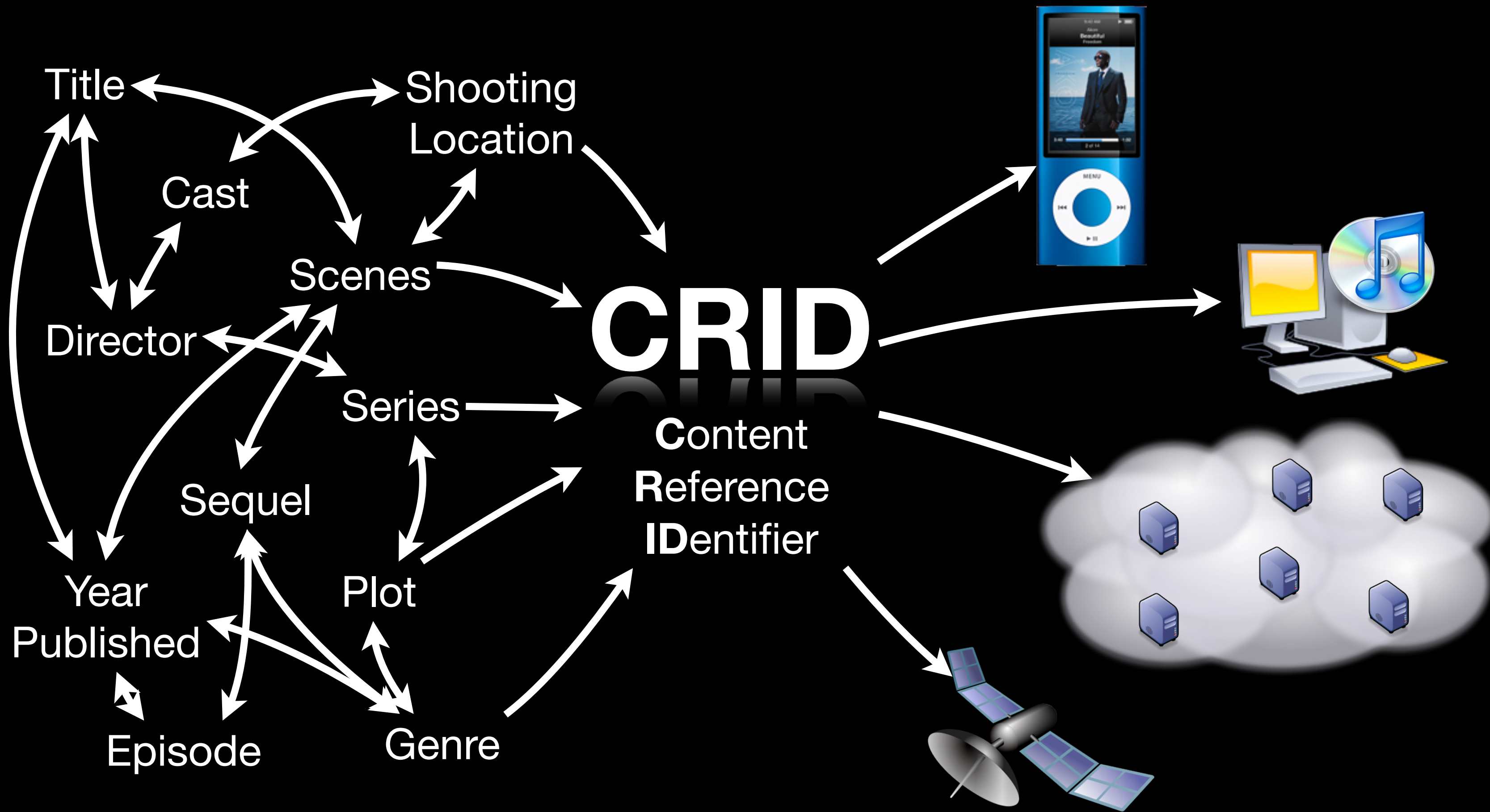
Schedule

Multimedia

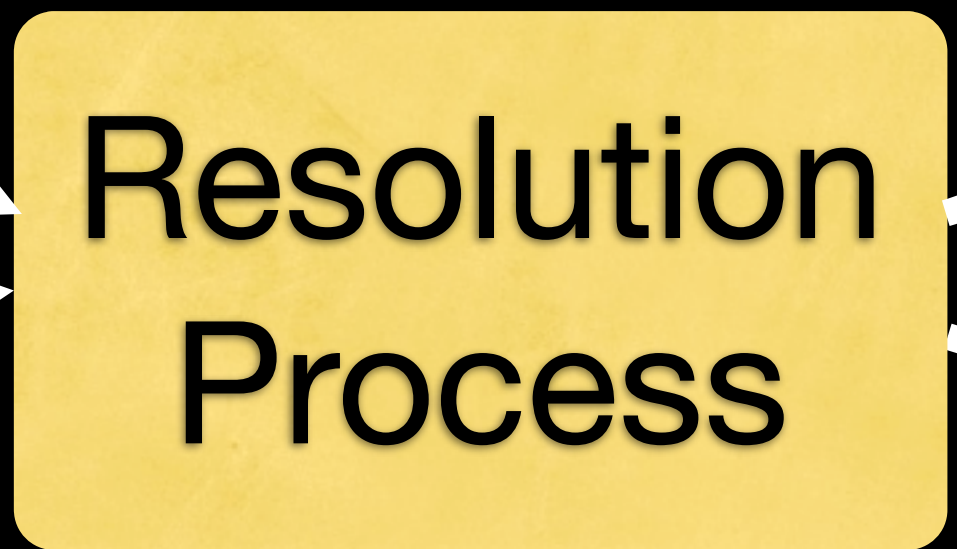
Series

CRID

Content
Reference
Identifier



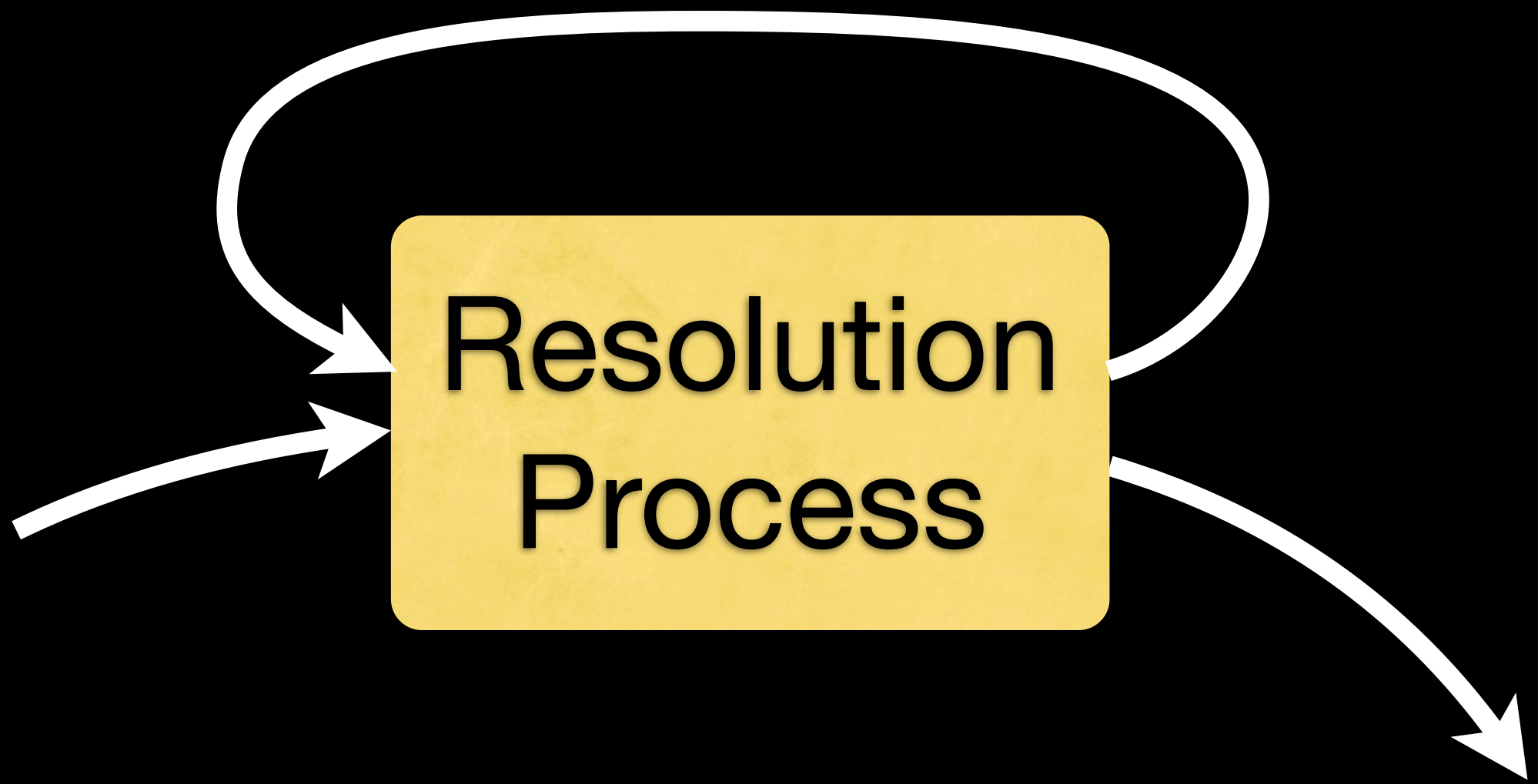
CRID(s)



CRID

Content
Reference
IDentifier

Location



The background features a vibrant, multi-colored sign. At the top, a red arrow-shaped banner contains the words "EAT AT" in white, 3D-style letters. Below this, a blue section contains the word "OLYMPICS" in large, stylized, white letters with a dark red outline. The sign is set against a wall with a mosaic of small, colorful tiles. To the right, a yellow sign with a white arrow and the word "URLS" is partially visible.

CRID

Content
Reference
IDentifier

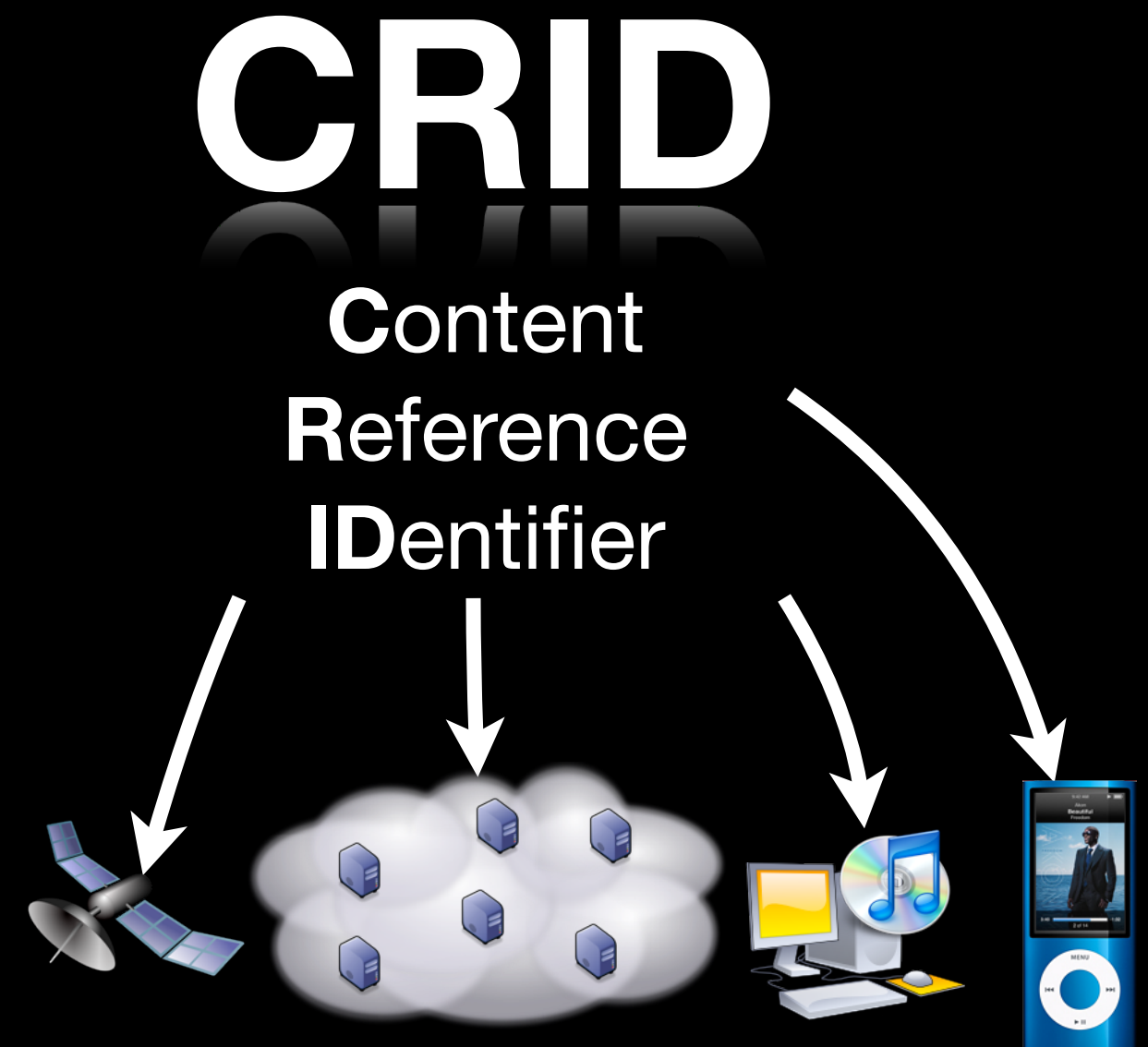
[crid://bbc.co.uk/olympics](http://bbc.co.uk/olympics)

[crid://bbc.co.uk/olympics/beijing](http://bbc.co.uk/olympics/beijing)

[crid://tf1.fr/20heures/](http://tf1.fr/20heures/)

[crid://tf1.fr/20heures/2011/02/01](http://tf1.fr/20heures/2011/02/01)

A federated and distributed CRID resolution service (much like DNS) with a first level local component in the client, and which allows for security and authentication.



Service Discovery and Selection



Content Guide



Service Discovery Bootstrap

1

Query `_dvbservdsc._tcp.DHCP_opt15_domain`
DNS SRV `_dvbservdsc._udp.DHCP_opt15_domain`
default port is dvbservdsc (port number 3937)

2

Join `224.0.23.14` (DvbServDisc on IPv4)
multicast `FF0X:0:0:0:0:0:0:12D` (DvbServDisc on IPv6)
on port dvbservdsc (port number 3937)

3

Query `_dvbservdsc._tcp.services.dvb.org`
DNS SRV `_dvbservdsc._udp.services.dvb.org`
for service location resource record (SRV RR)
(tcp yields HTTP servers, udp yields multicast addresses)



Service Discovery Bootstrap

HTTP

```
GET /dvb/sdns request HTTP/1.1 CRLF  
Host: host CRLF
```

**Multicast
Address**

Discovery records transported in DVBSTP protocol



Service Discovery Records

Schema
MPEG-B (aka. BiM)

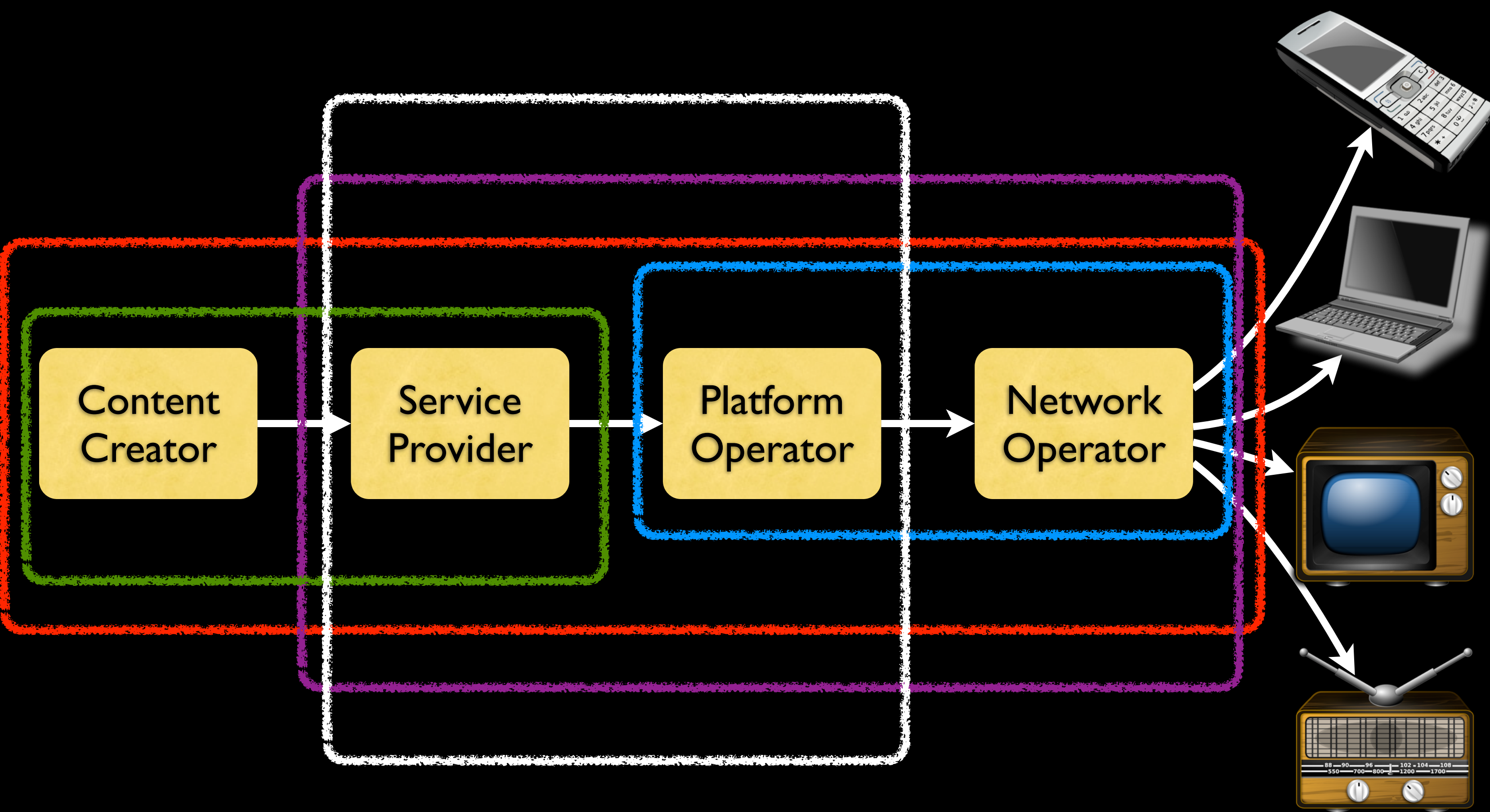


Classification
Scheme

Service ID
Package Bouquet
On-Demand
Live Media Broadcast
Schedule
Service Provider Codec
Push/Pull



Rationale for the Complexity



Content
Creator

Service
Provider

Platform
Operator

Network
Operator



Standards Making Proposal

Two white Stormtrooper action figures stand on either side of a white sign. The figure on the right is holding a wooden stick vertically. The background is a textured orange wall.

RE

BEL

SCUM!

WE HATE

YOU, LUKE

SKYWALKER.

AND THE WOOKIEE TOO

I don't think that DVB will really want to start working on a **full Internet TV solution**



Neither will W3C, or DVB or anyone else succeed in developing such a solution alone.

**It's too big
a task**



We will need to
team up between DVB, MPEG, W3C
(and maybe others)

DVB-TVA[®]

DVB-IPTV[®]

DVB-FFI[®]

XmL

W3C HTML




CSS 3



Java

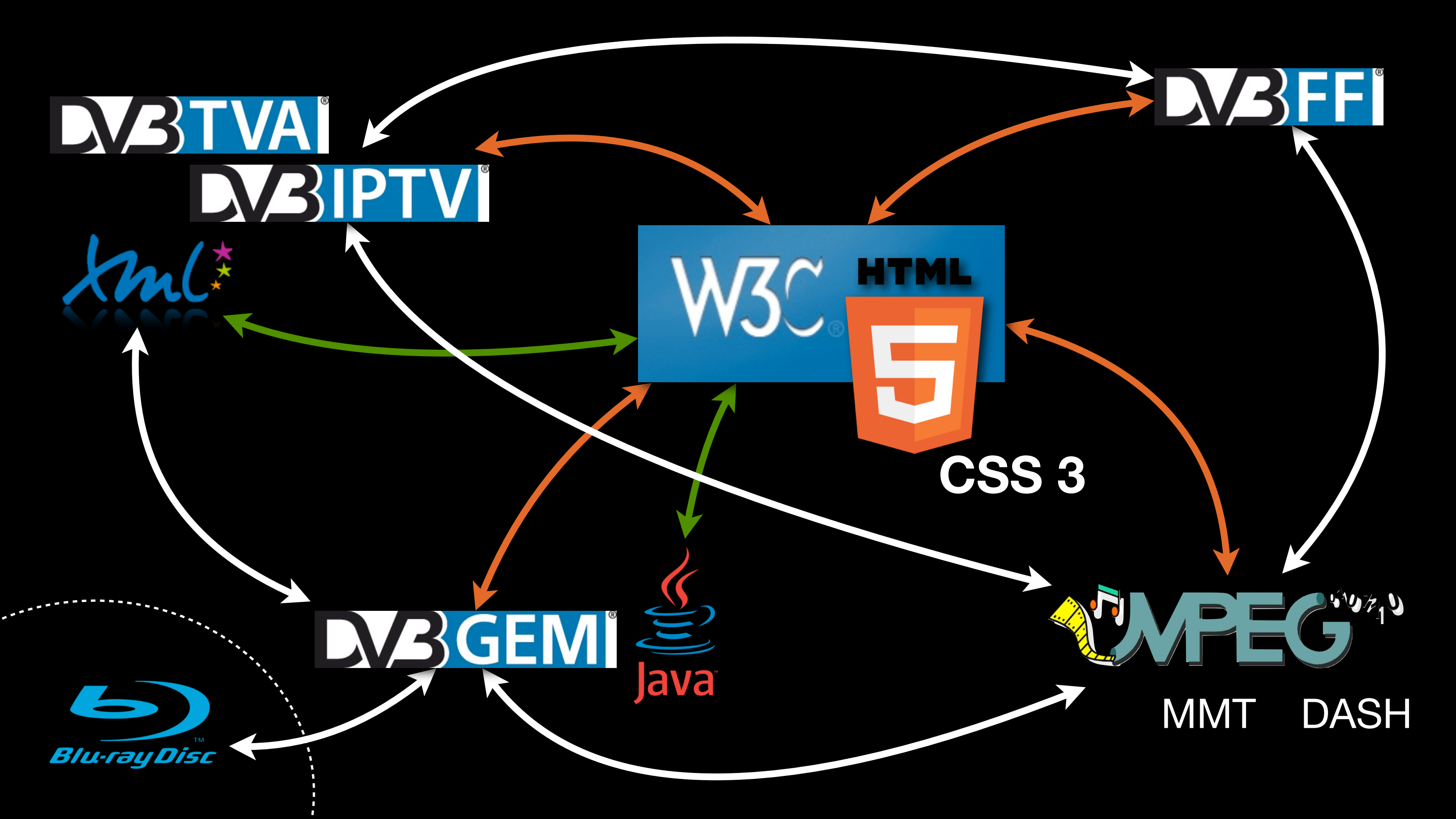
DVB-GEM[®]



MMT DASH



Blu-ray Disc



alexander.adolf@me.com 

www.condition-alpha.com 

[@c_alpha](https://twitter.com/c_alpha) 

**Thank you very much
for your attention!**

Digital / Broadcast

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