

Analytics

Using Hybrid Radio to Measure
Broadcast Radio Listening

Measurement

Measurement is **critical**

Guides **investment** in programmes **and**
infrastructure (DAB+ versus Streaming)

- Advertising Revenues / Budgets
- Internal Priorities

Broadcast Radio needs to show exactly its value

Radio Measurement

Varies between countries

- Diaries - paper and/or electronic
- CATI - telephone calls
- PPM - personal people meters

All **sample** based and weighted

Perceived to less valuable than internet metrics



Internet Measurement

Perceptions

- Measures **every user**
- Measures **every action**
- Measures in **real-time**
- Measures **detailed** actions
- Complex analysis of big data sets

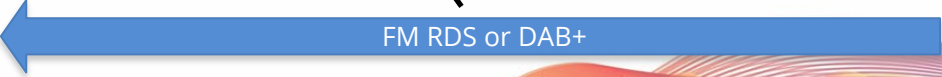
Internet Measurement

Perceptions

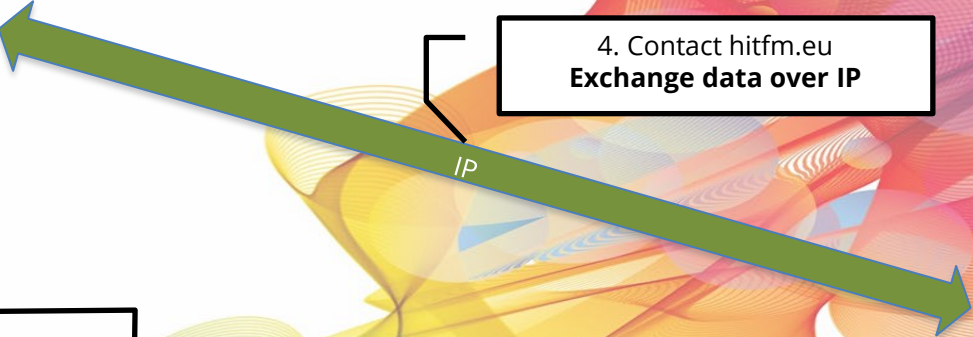
- ~~Measures every user~~
- ~~Measures every action~~
- ~~Measures in real-time~~
- ~~Measures detailed actions~~
- Complex analysis of big data sets



1. Existing Identifiers
(e.g. sid = c479, eid = c185)



4. Contact hitfm.eu
Exchange data over IP



Hit FM
88.7MHz
DAB+
hitfm.eu

2. DNS lookup
'c479.c185.ce1.dab.radiodns.org'



3. DNS Response
'hitfm.eu'

```
access_log-20140323
File Path : ~/Dropbox (Rittman Mead)/website_logs/access_log-20140323
access_log-20140323
1 183.255.258.7 -- [16/Mar/2014:03:19:24 +0000] "GET / HTTP/1.0" 301 235 "-" Mozilla/5.0 [compatible; monitis.com - free monitoring service; http://monitis
2 54.228.204.182 -- [16/Mar/2014:03:19:30 +0000] "POST /wp-cron.php?doing_wp_cron=1394939970.6438250541687011718750 HTTP/1.0" 200 - "-" WordPress/1.7.1; ht
3 170.148.198.157 -- [16/Mar/2014:03:19:30 +0000] "GET /feed/ HTTP/1.1" 200 36256 "-" Mozilla/5.0 (Windows NT 6.1; WOW64; rv:10.0.9) Gecko/20100801 Firefo
4 184.171.240.84 -- [16/Mar/2014:03:19:40 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
5 184.171.240.84 -- [16/Mar/2014:03:19:41 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
6 184.171.240.84 -- [16/Mar/2014:03:19:42 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
7 184.171.240.84 -- [16/Mar/2014:03:19:42 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
8 184.171.240.84 -- [16/Mar/2014:03:19:43 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
9 184.171.240.84 -- [16/Mar/2014:03:19:43 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
10 174.36.251.137 -- [16/Mar/2014:03:19:44 +0000] "GET /blog/ HTTP/1.0" 200 97431 "-" Mozilla/5.0 (compatible; monitis.com - free monitoring service; http://
11 184.171.240.84 -- [16/Mar/2014:03:19:49 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
12 184.171.240.84 -- [16/Mar/2014:03:19:50 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
13 184.171.240.84 -- [16/Mar/2014:03:19:50 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
14 180.149.242.167 -- [16/Mar/2014:03:19:52 +0000] "GET /blog/ HTTP/1.0" 200 97431 "-" Mozilla/5.0 (compatible; monitis.com - free monitoring service; http://
15 82.36.248.36 -- [16/Mar/2014:03:19:53 +0000] "GET / HTTP/1.1" 200 37277 "-" Echoping/6.0.2"
16 82.36.248.36 -- [16/Mar/2014:03:19:54 +0000] "GET / HTTP/1.1" 200 37277 "-" Echoping/6.0.2"
17 82.36.248.36 -- [16/Mar/2014:03:19:55 +0000] "GET / HTTP/1.1" 200 37277 "-" Echoping/6.0.2"
18 46.23.67.187 -- [16/Mar/2014:03:19:56 +0000] "GET /blog/ HTTP/1.0" 200 97431 "-" Mozilla/5.0 (compatible; monitis.com - free monitoring service; http://
19 184.171.240.84 -- [16/Mar/2014:03:19:56 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
20 50.23.115.100 -- [16/Mar/2014:03:19:59 +0000] "GET /blog/ HTTP/1.0" 200 97431 "-" Mozilla/5.0 (compatible; monitis.com - free monitoring service; http://
21 65.55.24.234 -- [16/Mar/2014:03:20:00 +0000] "GET /tag/rtd/feed/ HTTP/1.1" 200 5889 "-" Mozilla/5.0 (compatible; bingbot/2.0; +http://www.bing.com/bingbc
22 184.171.240.84 -- [16/Mar/2014:03:20:01 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
23 65.55.24.234 -- [16/Mar/2014:03:20:02 +0000] "GET /wp-content/uploads/2013/11/313-062_Extreme01-Banner_BLOG_FINAL_DESIGN-2.jpg HTTP/1.1" 200 24681 "-" "Mc
24 184.171.240.84 -- [16/Mar/2014:03:20:02 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
25 65.55.24.234 -- [16/Mar/2014:03:20:03 +0000] "GET /2005/05/indexes-tables-tablespaces/ HTTP/1.1" 200 10670 "-" Mozilla/5.0 (compatible; bingbot/2.0; +htt
26 173.192.34.91 -- [16/Mar/2014:03:20:05 +0000] "GET / HTTP/1.0" 301 235 "-" Mozilla/5.0 (compatible; monitis.com - free monitoring service; http://monitis
27 65.55.24.234 -- [16/Mar/2014:03:20:05 +0000] "GET /2006/03/taking-a-sneak-peek-at-xml-publisher-56-enterprise/feed/ HTTP/1.1" 200 3089 "-" Mozilla/5.0 (c
28 119.63.196.94 -- [16/Mar/2014:03:20:06 +0000] "GET /wp-content/uploads/2009/07/imagel.png HTTP/1.1" 200 9612 "-" Balduspider-image(+http://www.balduo.co
29 94.46.4.1 -- [16/Mar/2014:03:20:07 +0000] "GET / HTTP/1.1" 200 37277 "-" Pingdom.com_bot_version_1.4.(http://www.pingdom.com/)"
30 184.171.240.84 -- [16/Mar/2014:03:20:07 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
31 184.171.240.84 -- [16/Mar/2014:03:20:08 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
32 184.171.240.84 -- [16/Mar/2014:03:20:09 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
33 65.55.24.234 -- [16/Mar/2014:03:20:00 +0000] "GET /2007/04/page/5/ HTTP/1.1" 200 9199 "-" Mozilla/5.0 (compatible; bingbot/2.0; +http://www.bing.com/bin
34 184.171.240.84 -- [16/Mar/2014:03:20:09 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
35 184.171.240.84 -- [16/Mar/2014:03:20:10 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
36 180.43.83.150 -- [16/Mar/2014:03:20:10 +0000] "GET /files/Oracle_Financial_Analytics_Setting_the_Scene.pdf HTTP/1.1" 302 231 "-" Mozilla/5.0 (compatible;
37 177.52.128.74 -- [16/Mar/2014:03:20:11 +0000] "GET /blog/ HTTP/1.0" 200 97431 "-" Mozilla/5.0 (compatible; monitis.com - free monitoring service; http://
38 184.171.240.84 -- [16/Mar/2014:03:20:15 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
39 184.171.240.84 -- [16/Mar/2014:03:20:16 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
40 184.171.240.84 -- [16/Mar/2014:03:20:16 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
41 183.255.258.7 -- [16/Mar/2014:03:20:20 +0000] "GET /blog/ HTTP/1.0" 200 97431 "-" Mozilla/5.0 (compatible; monitis.com - free monitoring service; http://
42 184.171.240.84 -- [16/Mar/2014:03:20:22 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
43 37.252.227.70 -- [16/Mar/2014:03:20:23 +0000] "GET / HTTP/1.0" 301 235 "-" Mozilla/5.0 (compatible; monitis.com - free monitoring service; http://monitis
44 183.255.258.7 -- [16/Mar/2014:03:20:24 +0000] "GET / HTTP/1.0" 301 235 "-" Mozilla/5.0 (compatible; monitis.com - free monitoring service; http://monitis
45 184.171.240.84 -- [16/Mar/2014:03:20:27 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
46 184.171.240.84 -- [16/Mar/2014:03:20:33 +0000] "POST /wp-login.php HTTP/1.0" 200 3529 "-" "-"
```


Today

Log file analysis is possible
today
Top line insight into use

Guidance document

<https://radiodns.org/technical/documentation/#howto>



HOWTO - Basic Analytics using RadioDNS

Last update: 2020-07-01

Introduction

The RadioDNS model means that we hold no content, no transactions pass through any of our servers, and we have only the most vague understanding of the number of DNS lookups being performed due to the aggressive caching nature of DNS records.

That means it is not possible for RadioDNS to provide any analytics information directly.

However, the way that RadioDNS works means that each individual broadcaster and manufacturer can analyse their own system logs to understand usage. That does not require any involvement of other parties, and the information which is captured and analysed remains confidential.

This document suggests ways that RadioDNS activity can be logged and analysed.

Logging of RadioDNS Traffic

The Service and Programme Information standard (TS 102 818) describes how a receiver gets information from the broadcaster, and uses HTTP for transport.

In almost all cases, that means the information is being provided by a webserver like Microsoft IIS, Apache HTTP server, nginx, icecast, wowza or similar. All these servers keep access logs, which record every request, and often in the **Combined Log Format**.

A Combined Log Format entry will typically include:

- The Origination IP Address
- The Date / Time of access
- The **Resource** being requested (e.g. "GET /radiodns/spi/3.1/SI.xml")
- The **User-Agent** string

For example:

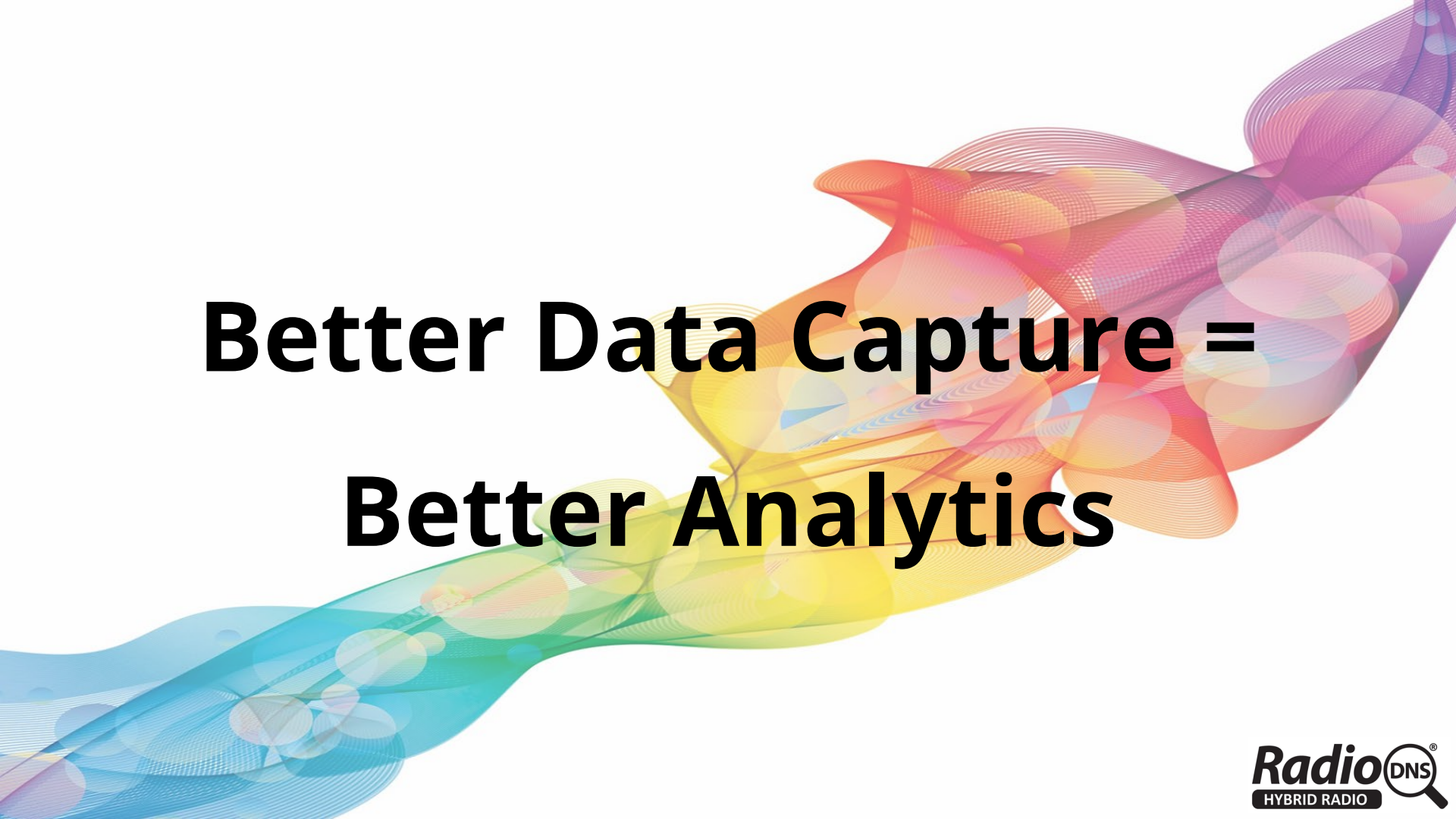
```
127.0.0.1 - frank [10/Oct/2000:13:55:36 -0700] "GET /apache_pb.gif HTTP/1.0"
200 2326 "http://www.example.com/start.html" "Mozilla/4.08 [en] (Win98; I
;Nav) "
(from https://httpd.apache.org/docs/1.3/logs.html#combined)
```

By filtering these log entries down, you can see what traffic is originating from RadioDNS devices.

The **Resources** used by RadioDNS devices are:

- Anything beginning "/radiodns/spi/" (Regex: ^\Vradiodns\spi\IV.*\$)
- Any Logo URLs specified in the SI file
- Any Streaming URLs specified in the SI file





**Better Data Capture =
Better Analytics**

Requirements

Privacy - expected and legally required

Personal - what is each user doing?

Behaviour - what is each user doing?

Accuracy - what is each user doing?

Complexity - how hard is this to implement?

Flexibility - will it fit each country's measurement?

Open - no single point of control or data view

Trustworthy

Analytics Working Group

Current thinking:

- Reports events to broadcasters in **real-time**
- Tracks **tune-in** and **tune-out** events
- Covers **broadcast radio** and **streaming**
- Tracks a **listener** across sessions
- Can track a listener across "**groups**" of stations

Issues

- Size of sample set?
- Skewed sample set?
- Authenticity / Trustworthiness?
- Detail of action tracking?
- Interoperability with "Logged In Listening"?

Outcome

A new **standard** for analytics for broadcast radio

- Open
- Decentralised
- Scaleable
- Durable
- Trustworthy

Analytics

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