



The Life of a Commercial

Application Specification AS-12 provides solutions to the problems that arise in existing workflows

As media companies migrate from the old videotape-based systems to use digital files, the opportunity exists to change workflows and processes. Changes can improve efficiency and lower costs. To achieve this, media companies must look at interoperability and metadata.

The pressure to go tapeless is extending to all areas of media production and distribution, and this is just as relevant for television advertising. When broadcasters first purchased video servers it was to air commercials — to avoid the wear and tear of videotape playback. Back then a server could store an hour or so of video. It wasn't until the capacity increased that they could also be used for long-form programming.

So part of the advertising distribution chain was the first to go tapeless, but the impetus has flagged. But why change? Tapeless, file-based operations have many advantages:

- *Improved efficiency*
- *Lower cost*
- *Enables cross-platform playout*

U.S. advertisers work with around 14,000 agencies to create their campaigns. From the agencies and their post houses, the finished masters of the television commercials are then delivered to the handful of commercial distribution companies (figure 1, page2).

Traditionally the spots were delivered on videotape, but now more so as files. The formats are generally dictated by the formats created by the nonlinear editors: Adobe, Apple, Autodesk, Avid, etc. Formats could include QuickTime and MXF, with MPEG video encoding.

The commercial distribution houses create versions to meet the delivery specifications of the broadcasters, cable networks, and all the other operators. A commercial may be need as standard definition and HD, 4:3 and 16:9, 720P and 1080I, as well as all the different resolutions for Internet and mobile delivery. This process is called transcoding.

Why so many formats? The delivery specifications are largely set by the formats supported by the infrastructure used at the broadcast facility. If their video server uses a certain format, then that is what they want delivered.

Interoperability and Metadata

Unlike the delivery of an HD master as D5 or HDCAM-SR tape, there are hundreds of variants of an MXF or QuickTime file. Vendors use their own interpretation of these very flexible standards, effectively creating proprietary subsets. Unfortunately this leads to a lack of interoperability, and the need to possibly handle hundreds of file formats. This is inefficient and adds cost to the operations. It does not help the advertiser sell more product — it is an overhead.

Some of the information about a commercial is carried in the slate. Other information—or metadata—travels as separate files, in faxes or emails, or as XML sidecars, all very nonstandard. Again, the lack of interoperability between the systems for handling sales, orders, traffic, etc. leads to inefficiencies.

There is an answer: the AMWA proposes application specification AS-12, an MXF wrapper for commercial delivery that addresses the current issues.

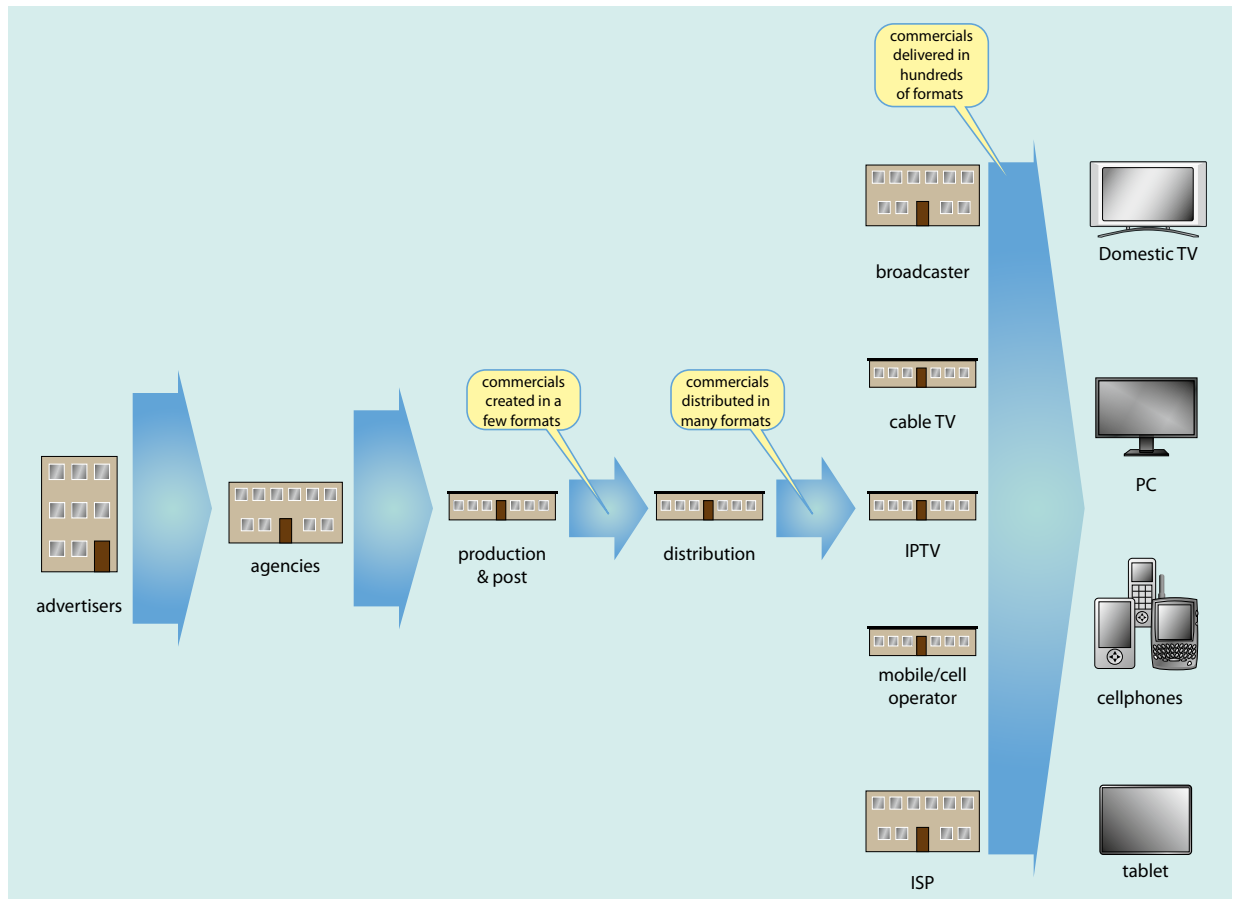


Figure 1. The life of a commercial involves many stakeholders, and it is ultimately delivered in many formats to the consumer devices.

Consider this comparison. On vacation we can take a photo of friends by the pool and “text” it to the folks back home—it’s instant. Twenty years ago we might have gone to a souvenir store, and purchased a post card. Next we went to the post office and bought a stamp. The post card goes in the mail, to be sorted, flown to the destination country, sorted, delivered to the local town, sorted, and finally delivered to the addressee.

That’s a lot of manual handling, time and effort. The smartphone alternative represents file-based operations. When we send the message, we don’t have to consider any of the underlying technicalities: are they using an iPhone, HTC, Samsung, Nokia? What model do

they have? We don’t need to know. The phone network operators and manufacturers agreed standards that enabled *interoperability*. They did this to benefit their businesses. It hasn’t stifled innovation or competition, but makes it easy for users and helps the phone business to thrive. If you were a postcard printer, you may be in trouble, but that’s progress. For phone companies, interoperability enables business.

Commercial workflow

One of the goals of any workflow for television commercials must to air a spot that looks as close as possible to the view the agency had in post-production. Another goal is to ensure that the schedule for airing the spot

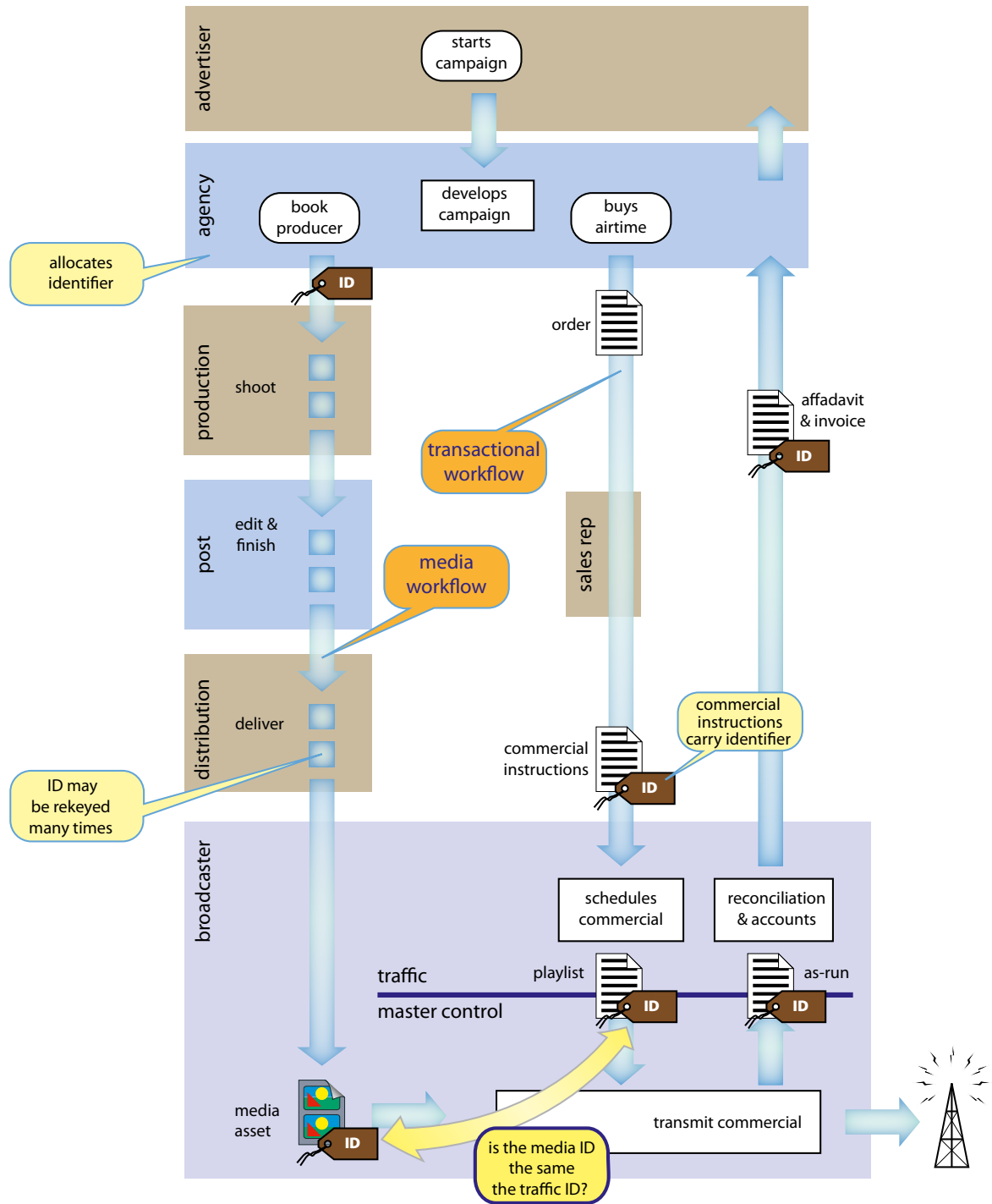


Figure 2 The ID for a commercial should pass unchanged through the media production workflow. That way the commercial will be correctly identified when ingested in master control and can be successfully linked to the instruction in the traffic system.

matches the contract. There are time-honored methods for ensuring these goals, but many of the procedures were developed in the days of standard-definition, analog broadcasting.

Today a spot may be shown SD and HD or even 3D, 4:3 and 16:9, 720P or 1080I, streamed over the web, viewed on a tablet, a phone or other mobile devices. The old ways are not best suited to these new demands or to controlling costs in the management of the many new formats.

There are two concepts that are key to adapting workflows to this new world. One is the drive to interoperability between the equipment that handles the commercials; the second is the use of metadata to manage the workflow.

The Slate and Metadata

The accepted way to identify a commercial is by the job slate. This is usually created in post-production by making a JPEG file showing the job details, which is then dropped on the timeline as frames of video. This is OK for videotape, but in a tapeless workflow, just think how handy it would be if you could read the job details of a file automatically, without needing to view the video.

The second drawback with the slate is that the information is manually keyed in the edit bay. Errors can occur, for example if the editor was handed the job ID scribbled on a napkin, or via a garbled cellphone call.

The slate information is part of the *metadata* that describes the commercial. Some is technical data, like time codes, compression formats, loudness, audio track

There is another way. The ID assigned to a commercial by the agency should be unique. It should be carried with the job in such a way that it doesn't need to be re-keyed at each stage of the process.

layout etc, and the other is business data, the agency name, the client, and the title of the spot.

All this information or metadata generally travels separately from the video in the journey from an idea at the agency through to the broadcaster or cable network. The metadata may be stored in asset management or traffic systems. It may be re-keyed several times (see figure 2, page 3). It is no wonder that serious mistakes can happen. Important transmission slots can be missed or the wrong commercial played out! Re-keying information, and fixing screw-ups all takes time, it is an overhead.

The Way Forward

There is another way. The ID assigned to a commercial by the agency should be unique. It should be carried with job in such a way that it doesn't need to be re-keyed at each stage of the process.

The slate information can be wrapped with the video file, and travel through the many processes from production to playout. This is more efficient, saves mistakes, and saves cost.

What are the barriers to acceptance? It's back to interoperability again. The broadcaster needs a video format and metadata that matches their systems. That depends on their video servers and traffic systems.

For standard definition commercials, a popular video/audio format is SMPTE D-10, also known as Sony IMX. This uses MPEG-2 for video encoding. The metadata can be in any number of house formats, and delivered as a separate file.

HD commercials are often delivered on tape, as D5 or HDCAM-SR. If file delivery is used, there are several formats in use. Again metadata is handled separately.

Sample Metadata

Slate

- Title
- Brand
- Product
- Advertiser

Technical

- Aspect ratio - AFD
- Loudness - U.S. CALM compliance
- Closed captions - 21st Century Communications and Video Accessibility act

Aspect ratio and AFD

A glance across the U.S. networks, and it is possible to see the same commercial displayed as full screen on one, and postage stamp on another. Where is the consistency of your message? The move from 4:3 aspect ratio for standard definition to 16:9 for HD has led to the opportunity for inconsistent handling of the picture aspect.

It sounds easy. Make graphics and important action center-cut protected, and the spot will be handled correctly. But through all the down-conversion, cropping, and maybe even up-conversion, things can still go awry.

Again there is an answer. There is an SMPTE standard for signaling data that can be embedded in the video. This data can guide equipment how to correctly display a picture on a 4:3 or 16:9 display. It's called the active format descriptor or AFD.

By using AFD, agencies can insure that ads are displayed correctly on HD sets or in SD and on older receivers. But, it needs everyone in the chain to support AFD. Where there are missing links, then human intervention is needed, and that's where mistakes can creep in.

The NAB is supporting the descriptor with the "AFD Ready Initiative"

To return to the postcard and the smartphone analogy, the postcard uses manual handling—planes and trucks for distribution, even the bicycle. The smartphone uses fiber networks to deliver the message. Tapeless operations similarly leverage modern computer networks to deliver content as files. The many operations of dubbing, QC and physical transport and warehousing are contracted into much simpler processes, and that's where the efficiencies are achieved.

Before interoperable workflows can be constructed, there must be agreed standards in place. Right now there are a number of ad hoc practices, largely driven by what formats are supported by existing equipment: nonlinear editors and video servers.

A number of leading broadcasters and service providers are working with Ad-ID, which is a joint venture of the American Association of Advertising Agencies (4A's) and Association of National Advertisers (ANA), and the AMWA to create a new standard for the distribution of television commercials that will facilitate more efficient and automated workflows.

As an example, PBS was looking to use fiber networks to deliver programming to their many affiliates. By using non-realtime transfer of programs as files, rather than live satellite broadcast, they hoped to achieve significant cost savings. However, the affiliates had several makes of video servers used to receive the media files. PBS wanted to send out one flavor of file to all the affiliates, rather than tailor the files to the specific equipment at each site. In conjunction with the AMWA, the PBS project team developed a constrained version of MXF (AS-03) that, with software upgrades to the servers, allowed PBS to deliver a common denominator media file to all their affiliates.

A derivative of this application specification, AS-12, is set to be the model for a universal format for the delivery of commercials as files. It needs some certain flexibility, to accommodate SD and HD version for examples, but these can be defined by "shims" which further constrain the specification.



does your spot look the same on different networks?

Summary

The existing workflows and processes for commercials were constructed for videotape operations, and have not taken up the opportunities of file-based operations to improve efficiencies.

It is perfectly possible to share slate and transactional data about a commercial by using collaborative tools, and by linking the disparate applications involved in the chain from advertiser to air.

The sales systems, traffic, bookings, etc., can be loosely coupled, so that everyone views the same data. This circumvents the unavoidable mistakes that creep in with the current need to re-key information up to fifteen times throughout all the production processes.

The key to this sharing of data is the use of a unique identifier.

To find out more about Ad-ID visit www.ad-id.org/.

To participate in the development of the AS-12 specification for commercial delivery, contact the AMWA at www.amwa.tv.

Further white papers on MXF, AAF, XML, and SOA applied to advanced media workflows can be downloaded from the AMWA website at www.amwa.tv.

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