



# Seminar on Advanced Media Workflows and MXF

October 26, 2009

AMWA objectives for AS02 and AS03 - session FAQ

## The Business Drivers for AS02 and AS03

The global industry situation is slowly improving however the advertising revenue from free to air TV may not return to previous levels. At the same time, advances in technology are increasing the number of viewer options for the consumption of media. Will your total revenue from digital media in 2012 generate the same revenues as analog TV in 2002? Revenue management and cost management are, therefore key. AS02 and AS03 can help cut costs.

All media organizations, like Post houses, Studios and Broadcasters organizations are special and we are a creative industry. However, we are also businesses that often resemble the Factory model of inputs, processes and outputs.

For example, in a shoe shop, you will see a vast difference between designs from Nike, Adidas, Puma, Reebok. Despite the fact that all these brands are headquartered in different countries and have different visual looks, it can be the case that different shoes are made in the same factories in the Far East.

Being too special and "going it alone" can carry heavy costs. The challenge going forward is to keep unique strengths but also control costs by minimizing waste and increasing efficiencies. For example not using expensive manpower on repetitive and mundane tasks

that are better implemented through automation.

AS02 and AS03 have been designed by the industry, for the industry to streamline file based workflow within and between organizations. They offer scale and scope efficiencies – doing more with less. File based workflow is not a business plan in itself but it can form the basis of more cost effective operations.

If we look to the near future, we know the lifecycle of the material already generates many versions (e.g., 70+ deliverables were made for the movie "Collateral") and this will only increase. AS02 and AS03 can drive the costs of making deliverables down.

We know that Film workflows have been shaped by handling silver stuck to plastic, video workflows have been shaped by handling rust stuck to plastic. These formats must be passed from process to process like a baton in a relay race.

Boom times will come again and the most efficient & flexible companies will grow the fastest. File based operations allow flexible, collaborative workflows that can be designed to meet the needs of your business, not the recording medium. As digital film cameras and digital cinema delivery increases, the future is files. AS02 and AS03 can handle both feature film and TV file workflow and drive down costs.

## FAQs on MXF AS02 and MXF AS03

### Q. What is MXF?

**A.** MXF is a toolbox for solving user problems with a flexible wrapper format, designed for the requirements of file based production and post production. It is possibly too flexible, so one role of AMWA is to specify the use of this toolbox to meet media business needs.

MXF was standardized by SMPTE in 2004 and evolving MXF user requirements capture is maintained by AMWA – a not for profit industry organization - which includes broadcasters, studios, post houses and manufacturers.

Standards take manpower and hard cash to agree, create and maintain. While uniqueness is important in many areas of what we all do, for creating business differentiation, standards are important in others. If individuals, companies or groups choose to "go it alone" in areas where standards would make more sense, that can put cost into the industry.

The role of AMWA with MXF is, broadly speaking, to specify commoditized tools for custom jobs. Our industry needs special metadata – but that special metadata has to be clearly defined and documented, placed in known

locations and handled consistently in our diverse, globalised industry.

For an organization that needs business specific metadata, it is possible for an end user organization to draw upon the work already done within SMPTE and the MXF community. Therefore, building custom schemas and workflows need not be a daunting task.

### Q. What is MXF AS02?

**A.** MXF AS02 constrains the MXF toolkit to efficiently carrying essence (pictures, sound and metadata) through the processes needed to create deliverables and versioning. As a media asset passes through a company (or companies) it can carry the essence and metadata with minimum data overheads. More details in Quick Introduction to MXF AS02 and MXF AS03.

### Q. What is MXF AS03?

**A.** MXF AS03 constrains the MXF toolkit to efficiently carry final deliverables in a compact, robust and viewable

format. The relationship between AS02 and AS03 is a bit like creating a collaborative document like this with Word (AS02) and then creating a PDF for distribution (AS03). More details in the Quick Introduction to MXF AS02 and MXF AS03.

### **Q. How does MXF AS02 compare to MXF OP1a?**

**A.** MXF OP1a is a widely deployed wrapper found in many vendors solutions. However, it has some specific limitations.

The OP1a format interleaves video and audio so that you always have the data for one frame of video close to the data for the synchronized sound.

This is great for an acquisition device like a camera or for a playback device like a single channel playout server, but is problematic for versioning. For example, if you need to create a stereo audio from the surround sound audio track, why should you have to transfer the video at the same time?

### **Q. How does MXF AS02 compare to MXF OP-Atom?**

**A.** The OP-Atom format was optimized for storing individual essence components in an AVID editing environment or in a dCinema environment.

The actual essence storage is almost perfect for a factory environment, but the problem comes with the way in which the individual components are synchronized. AVID uses an AAF project for this role. Panasonic uses a custom XML file for this role. The dCinema community uses a different XML structure for the same role.

### **Q. How does MXF AS02 compare to QuickTime?**

**A.** QuickTime is a widely used and effective format; however, it has not grown out of the need for versioning and is proprietary. It lacks standardized tools for versioning (for example specific ways of handling multi-language and closed captioning). MXF has user forums for requirements capture and standardization (AMWA, SMPTE). No equivalent forums currently exist for QuickTime.

### **Q. Can I use DPX or CIN files inside AS02 and AS03?**

**A.** Yes. AS02 is a wrapper format – it can wrap DPX or CIN in the same way as other file formats.

### **Q. Can I wrap Red/SI/Arri/other camera files inside AS02 and AS03?**

**A:** Yes.

### **Q. Can I wrap Stereo3D files inside AS02 and AS03?**

**A.** Yes.

### **Q. Can use AS02 and AS03 for creating Web content?**

**A.** Yes.

## **Thought experiment**

It's useful to quantify savings of file based workflow in non-engineering terms. With the paper and pens on your chairs – please anonymously write down the 2 or 3 main workflow inefficiencies in your organization. Here are some possibilities

- a.** Are we copying media unnecessarily?
- b.** Are we moving media unnecessarily?
- c.** Are we ever physically moving tapes when sending files over a network could be cheaper?
- d.** Do we ever need to re-key metadata?
- e.** If so, how long do we spend checking re-keyed metadata?
- f.** Are we re-working content because of wrong metadata?
- g.** Do we analyze the number of audio, video or captioning rework processes that take place and why?