IMF for broadcasters

This briefing paper provides a high-level overview of the Interoperable Master Format for senior managers and those considering acquisition, versioning and archiving workflows.

What is IMF?

The **Interoperable Master Format (IMF)** is an international standard for the file-based interchange of high-quality, multi-version, finished audio-visual content destined for worldwide distribution.

To many this suggests IMF is not a format broadcasters would normally use unless they produce content for sale in multiple versions to multiple territories. However, a closer examination of the standard and its potential use cases suggest IMF offers broadcasters opportunities to improve efficiency when buying, producing and archiving content.

Why is IMF useful for broadcasters?

Traditionally broadcasters expect a programme to be delivered, processed and archived as a completed item, either a tape or an Air Master file (a flattened file ready for play-out). It is therefore easy to say that IMF is of no use to a broadcaster who simply buys or makes a single version of a programme and then stores this single version in its archive using the Air Master format.

However, when two or more versions of a programme are needed, two or more complete tapes or files are also needed, even though virtually all the content is identical. Repeating this duplication across many programmes and many years means archives are full of identical material wasting space and costing money.

IMF allows a workflow where content does not need to be unnecessarily repeated, no matter how many editorial versions are needed and no matter how many technical platforms targeted for delivery. Any broadcaster that acquires or produces programming that will be needed in two or more versions or sells international versions of its content, will benefit from workflows based on IMF.

IMF also offers a roadmap to emerging audio-visual requirements including:

- HDR and wide gamut video

- Access services, including support for subtitling compatible with EBU-TT-D

- Broadcast- and user-specific metadata

EBU IMF Workshop for broadcasters

To better understand how this format can be applied to broadcast workflows, the EBU is organizing an introductory IMF workshop on 30 & 31 May 2017, which has been specifically designed to provide a foundation level of understanding and to discuss the use of IMF in broadcast operations.

You can find the programme and register at: https://tech.ebu.ch/imf2017

The EBU IMF-TV Group

The workshop is organised by the EBU IMF-TV group, which is working through the broadcast business and technical requirements to better understand how the format can be applied to broadcasters needs.

The group has identified three use cases common to many broadcasters

1. **Incoming** – where a broadcaster buys programmes from others. Many Studios are now using IMF to master movies and episodic content. This is often the first time a broadcaster meets IMF!

2. **Outgoing** – where broadcasters or production companies make content with multiple delivery options.

3. **Archiving** – where broadcasters and content owners can use the IMF to reduce the storage and processing requirements for long term storage and continued versioning.

You can join the group via: https://tech.ebu.ch/imf

More details on IMF

IMF is described in the SMPTE ST 2067 family of standards documents which includes the Core Constraints and a number of Applications for specific use cases.

In brief, IMF:

1. is not a single file, but a collection of essence and metadata files;

2. is not intended as an Air Master for play-out or distribution;

3. contains all the video, audio and the data formats for other services (e.g. access services) required for all content versions;

4. includes all the static and dynamic metadata required for each content version;

5. includes one or more Composition Play Lists (CPL) which decide which sections of content is needed for a particular version

6. optionally includes one or more Output Profile List (OPL) which provide instructions to modify the content to meet the needs of specific delivery formats.