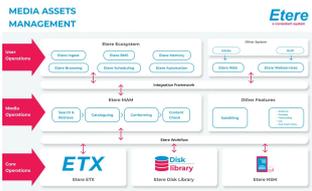


Etere: Multi-Standard Media Management

This paper will describe the strategies and implications of implementing a “multi-standard framework” able to manage different standard formats within the same system.



Etere logo



Media Asset Management diagram

SCOPE

Nowadays, the need for managing different TV standard formats under a single system is rapidly growing as broadcasters and media houses are more and more extending their production and delivery to different places and markets, with a series of benefits and impacts.

At present it is normal for a company to receive a master clip at a certain frame rate (e.g. 24p) to later produce and deliver the material at multiple different standards (e.g. 23.98p, 29.97i, 30p, etc.). In this scenario, the ability to natively support multiple standards for the same asset becomes crucial to ensure frame-accuracy across all involved media management operations and thus guarantee the reliability of such a complex system.

A multi-standard framework will enable ETERE to provide customers with a reliable MAM system able to support two or more standard formats for the most common operations related to the production and delivery of assets:

- Store multiple proxy files with different standard formats for the same asset
- Insert EDL points into multiple standard formats
- Choose the standard format to browse proxy media
- Cut segments according to a selected standard format
- Enter video subtitles based on a specific standard format
- Insert voice-over audio based on a selectable standard format
- Automatic video encoding based on a target standard format

The multi-standard support will rely on a database properly structured to handle one “reference standard” and multiple “alternative standards”, the former will be used by default for all operations whereas the latter one will be a selectable option available for users. All frame rate dependent information (e.g. EDL marks) in the database will be simultaneously kept in both reference and alternative standards, thus preventing “on-the-fly” conversions that may result in inaccurate data.

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2. STRATEGIES

In this chapter are explained all the changes planned to be introduced in the ETERE system to enable a multi-standard framework, changes mainly consist of the following points:

2.1. General

- The system will allow selecting one “reference standard” (default for all operations) and multiple “alternative standards” (selectable by user). If no “alternative standard” is enabled, the system behavior will remain the same as now.
- Initially supported standards include NTSC, PAL, 50p and 60p.

2.2. EDL

- A new field named “frame rate” will be added to the “fs_metafile” table, thus allowing further describing EDL time codes along with the existing “SOM” and “DUR” fields
- For EDL’s from 1 to 10 the standard is fixed (to the reference standard)
- For EDL’s from 11 onwards the standard is user-defined (reference or

alternative)

- All EDL marks will be kept in the database in different versions, one for reference standard (e.g. 43) and others for alternative standards (e.g. 1043, 2043, etc.)

2.3. Codecs

- Codecs will be related to a specific standard (e.g. IMX50 NTSC, IMX50 PAL), this will facilitate their recognition and management.
- Codecs will have specific rights; this will allow restricting their visibility/use to specific users.

2.4. Modules

- Only MAM-related modules (e.g. MAM, DataMover, etc.) will support multi-standard
- Other modules (i.e. Ingest, Scheduling, Air Sales, etc.) will not support this feature. For instance, scheduled events will be exclusively related to the “reference standard”

2.5. Conversions

- Conversions between standards will be performed using proven methods. E.g. 24p material will be converted to 50i (25) by slightly speeding up it by 25/24 (4%).

3. IMPLICATIONS

Altering the structure of the database to add a multi-standard support is a sensitive operation that may cause side effects on the functioning of the ETERE system.

In this chapter are listed the modules impacted by the development of this project, detailing their expected collateral consequences and related prevention/mitigation measures.

3.1. Workflow

- As a result of splitting codecs according to their standard format (e.g. IMX 50 NTSC and IMX 50 PAL), existing “transcoding” workflow actions will require to know the source/target media codec (e.g. NTSC, PAL) to be used.