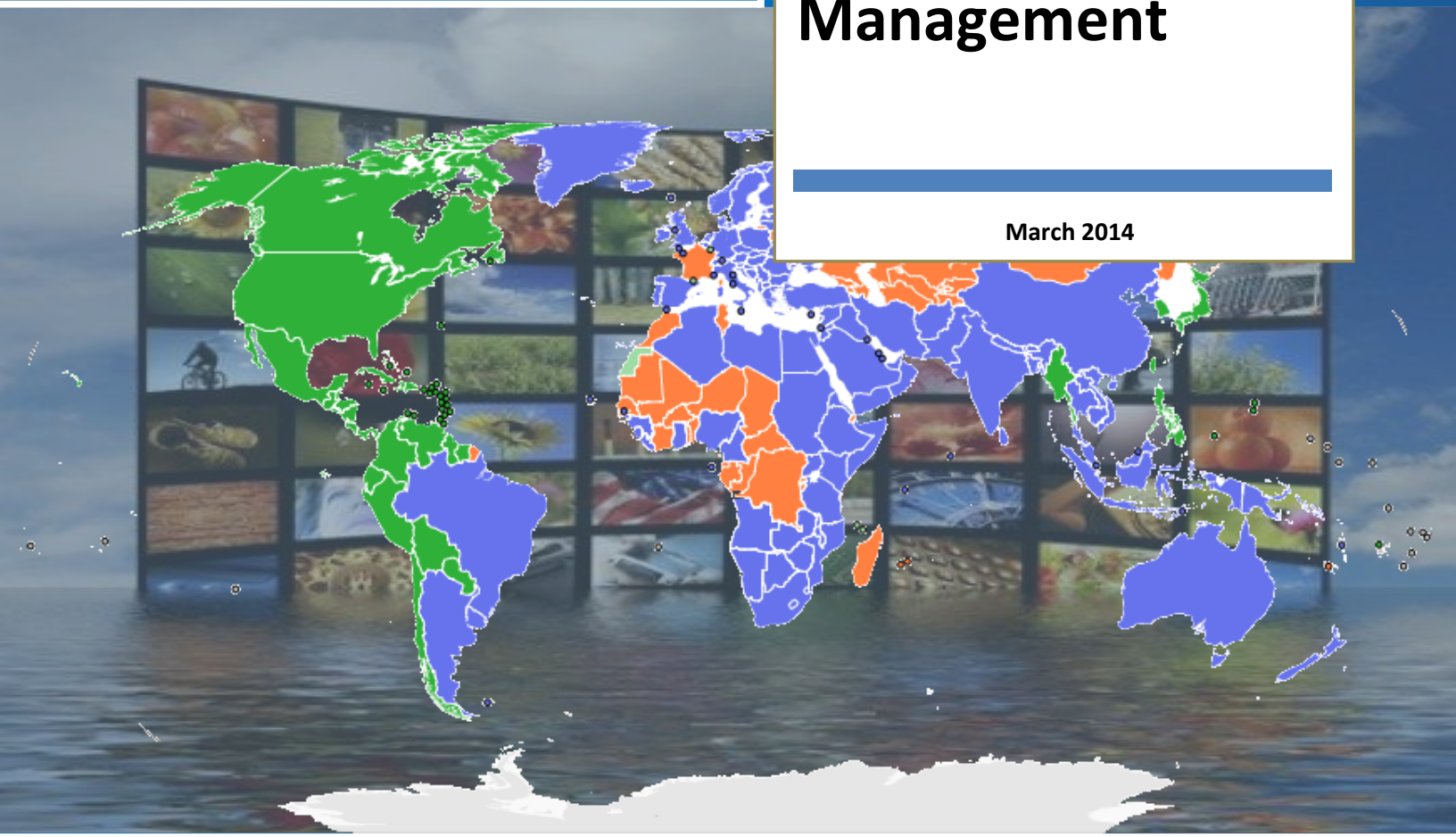
PROJECT

Etere
a consistent system

ETERE:

Multi-Standard Media Management

March 2014



Revision History					
Version	**Date**	**Author**	**Changes**	**Chapter**	**Reference**
1.0	18/03/2014	Michael Vasquez	First document release	---	**---**
1.1	01/08/2014	Michael Vasquez	Added modules and conversions	2.4, 2.5	**---**
1.2	03/09/2014	Michael Vasquez	Developers discussion on major implications	3.	**---**

Table of Contents

1. 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.

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

▼ 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.