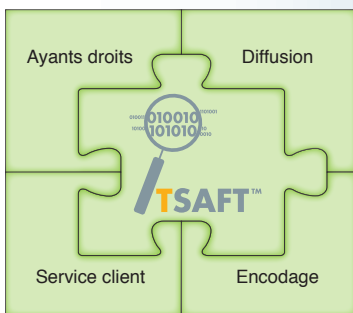




TSAFT provides an automated solution for analyzing and on-the-fly correcting digital video content to help lower operational VOD costs while improving video content quality and video services subscribers' satisfaction.

Despite a very comprehensive market offer for network monitoring / tuning solutions, more than 50% of error causes is due to digital content not encoded as expected.

Unlike other solutions that require manual assistance, or time-consuming content testing processes, TSAFT is able to scan, repair, and optimize hundreds of video per day. In addition to this, continuous R&D efforts allow updating and maintaining a broad coverage of typical error detections. These may vary from video freeze to audio/video synchronisation loss, as well as macro-blocking, which have been identified by video content Operators as major causes of quality defects in video distribution channels.



## TSAFT references:

- SFR
- Alice-Free

## Potential Users :

- Broadcast
- Mobile

## KEY FEATURES :

### Digital certification

- Total scan of the video content
- Detection of encoding issues
- Predictive content correction

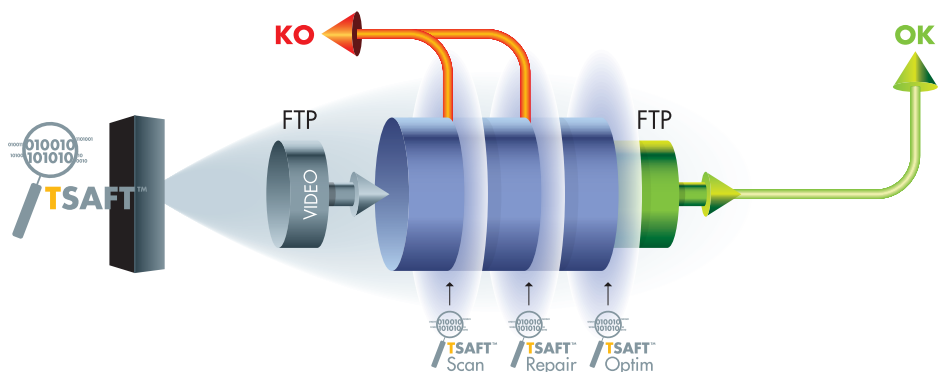
### Correction effectiveness

- Speeds up the video errors processing chain (suppression of the encoding non-quality)
- Allows a faster republishing operations (by automated non-regression tests)

### Industrialisation

- Immediate product deployment
- Scan report is independent of the video streaming solution
- Allows, coupled with accurate reporting tools, an improved Operator/Rights Owner relationships management.
- Automated application that can be set once and run 24/7, day after day.

*TSAFT software suite guarantees the service quality and the content validity:*





## PRODUCT SPECIFICATIONS

The TSAFT solution is composed of 3 video processing modules:

- TSAFT SCAN (logo) for immediate analysis & errors detection
- TSAFT REPAIR (logo) for on-the-fly video content correction
- TSAFT OPTIM for video content optimization



**Video content MPEG-2 transport stream based checking:**

- PSI tables consistency
- TS flags (%PES) analysis
- PCR, jitter clock breaks verification

**PES encapsulation verification**

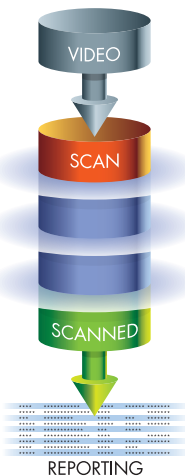
- Analysis of: PTS/DTS
- Audio/Video delay
- PES flags (%ES), and PCR offset

**ES content verification**

- Supported types: H.264 (SD/HD), MPEG-2 (SD/HD), MPEG Audio Layer 1 and 2
- ES discontinuity detection
- AU analysis

**Real encoding data extraction (e.g GOP, I frame, real bandwidth...)**

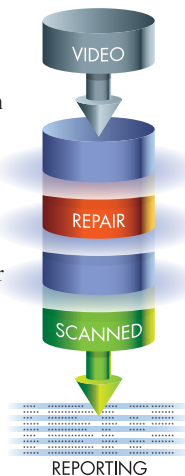
**Operator/Rights Owner relationships**



**Automatic correction of:**

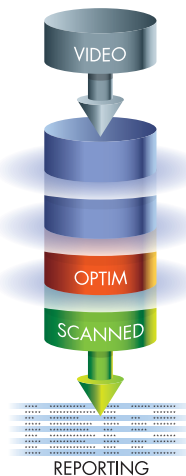
- Program Clock Rate (PCR) errors, avoiding synchronisation loss
- TS Control Counter errors, avoiding skips during TS sequences decoding
- PES flags (that depends on the payload) in the TS header
- PAT/PMT consistency

**Automatic insertion of accurate ISO languages codes ("fra", "eng"...)**



**TSAFT OPTIM:**  
**Optimizes the required bandwidth and storage space for the video content streaming:**

- Removes any optional or redundant DVB tables (in case of IP streaming)
- Removes any additional and useless padding
- Allows to cut a sequence in a consistent manner (e.g. for the creation of a trailer)
- Allows to extract an Elementary Stream (ES) to be reprocessed by a mux



## Recommended platform:

- Microsoft Windows server 2003 (CPU 3 GHz, RAM 2 GB, HD : 160 GB)
- Linux Debian 5.0 (64 bits, RAM 2 to 8 GB, HD : 160 GB)