MARQUISE
TECHNOLOGIES

TORNADO

Advanced transcoding engine for IMF, DCP and more

TORNADO is a transcoding engine designed to be integrated in the facilities' infrastructure: Film labs, post houses, VFX studios or OTT vendors can build their own automated transcoding workflows using TORNADO's API.

Designed to achieve up to 240 FPS in JPEG2000 encoding at 4K resolution, TORNADO is the most powerful transcoding solution on the market.
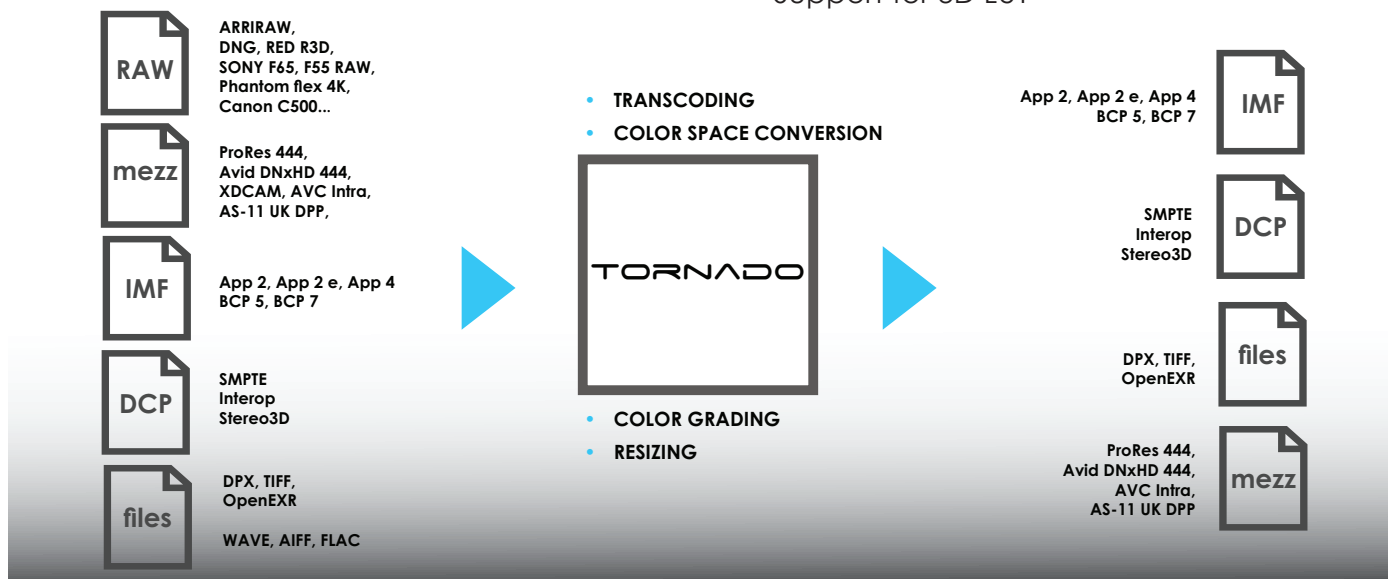
Extensive source media support

- TORNADO supports natively RAW data at the camera resolution (ARRIRAW, DNG, RED R3D, SONY F65, F55 RAW, Phantom flex 4K, Canon C500, etc..)

- Support for mezzanine formats such as IMF, Avid DNxHD 444, XDCAM, AVC Intra, AS-11 UK DPP,Support for Interop and SMPTE DCP, including stereo3D DCPs up to 120 FPS

- Support for uncompressed formats such as DPX, TIFF, OpenEXR, etc…

- Audio support includes WAVE, AIFF and FLAC

Multiple Transcoding capabilities

- Simultaneous multiple rendering streams from the same source media

- Mezzanine formats such as DNxHD 444, AVC Intra, IMF

- Delivery formats such as DCP, AS-11 UK DPP, HEVC, H264

- Uncompressed formats such as DPX, TIFF

Image Processing

- Image resizing (Pan & Scan) for resolution from SD to 8K

- Color space conversion (support for REC 601 / 709, REC 2020, DCI XYZ, ACES 1.0)

- Primary Color correction

- Support for 3D LUT

RAW — ARRIRAW, DNG, RED R3D, SONY F65, F55 RAW, Phantom flex 4K, Canon C500...

mezz — ProRes 444, Avid DNxHD 444, XDCAM, AVC Intra, AS-11 UK DPP,

IMF — App 2, App 2 e, App 4 BCP 5, BCP 7

DCP — SMPTE Interop Stereo3D

files — DPX, TIFF, OpenEXR — WAVE, AIFF, FLAC

- TRANSCODING
- COLOR SPACE CONVERSION

TORNADO

- COLOR GRADING
- RESIZING

App 2, App 2 e, App 4 BCP 5, BCP 7 — **IMF**

SMPTE Interop Stereo3D — **DCP**

DPX, TIFF, OpenEXR — **files**

ProRes 444, Avid DNxHD 444, AVC Intra, AS-11 UK DPP — **mezz**

DCP Support

- Support full 2K and 4K DCI specs, including Stereo3D and up to 120 FPS

- Support for Interop and SMPTE DCP

- Creation of supplementary packages

- Subtitles support includes MXF, PNG, XML InterOp (Texas Instruments CineCanvas) and XML SMPTE (D-Cinema SMPTE 428-7)

- Support for Close Caption (MXF SMPTE Timed Text)

- Validation process with more than 50 tests on the packages

- Track essence encryption and DKDM generation

- Repair and re-wrap functionalities

IMF Support

- Support for App #2/2e Studio Profile, App #4 Cinema Mezzanine, App #5 ACES, IMF RDD45, TSP2121 DPP

- Support of specification IMF Broadcast & Online

- Supported JPEG 2000 profiles include Broadcast profiles up to BPC L7 and IMF profiles 16 bit

- Support of IMSC1

- IMF functionalities include creation of IMP and supplemental IMPs, merge and split of packages, repair and re-wrap.

- Support of multiple soundfields

PRODUCT INTEGRATION

TORNADO is available as a software license:

- Transcoding software with GPU acceleration for JPEG2000 and RAW transcoding

- Support for multiple streams of GPU processing

- API documentation (REST + CLI)

- Requires Windows 10 64 bit, single or dual CPU, and minimum 1 NVIDIA GPU with a CUDA index of 3.5

SCALABLE INFRASTRUCTURE

TORNADO architecture allows installation on premise or in a cloud (private or public).

TORNDAO is meant to be integrated into a pipeline, driven by an orchestration system.

TORNADO can also be conducted by the mastering solution MIST.