

WORK FLOW MODEL for the use BWF from location till the end.

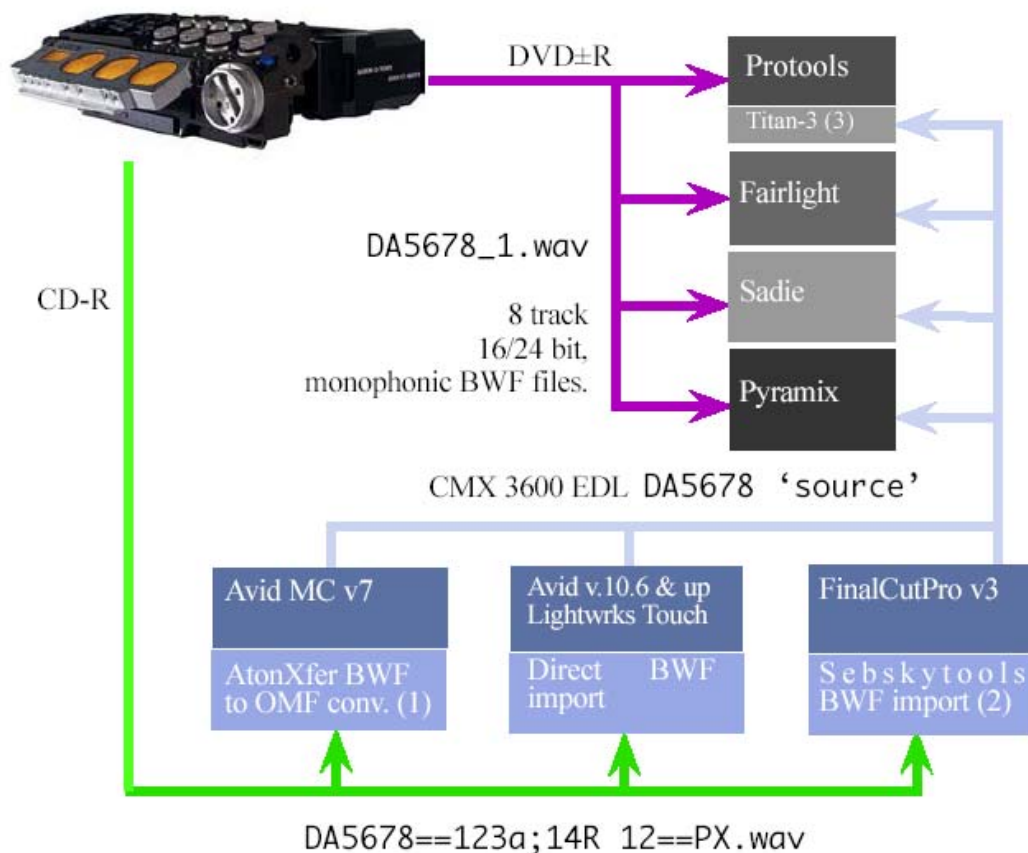
Up to now 6.25 and DAT was the only way to carry pro-audio for Film and TV productions. With the arrival of Audio disk recorders, we have the opportunity to improve the workflow thanks to the unification of users and manufacturers around the Broadcast Wave audio file format.

On location, sound is recorded on Aaton Cantar 1 to 8 tracks with or without Mix-down or on Deva or Fostex (without mix-down).

POST PRODUCTION PATH

The disk recorder produces TWO medias:

- DVD contains independent tracks, this product goes directly to the sound stations.
- CD-Rom contains the Mix-down only, so it fits on a CD in most of cases. Time codes and Labels are identical to the Original BWF from DVD.



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ADVANTAGES

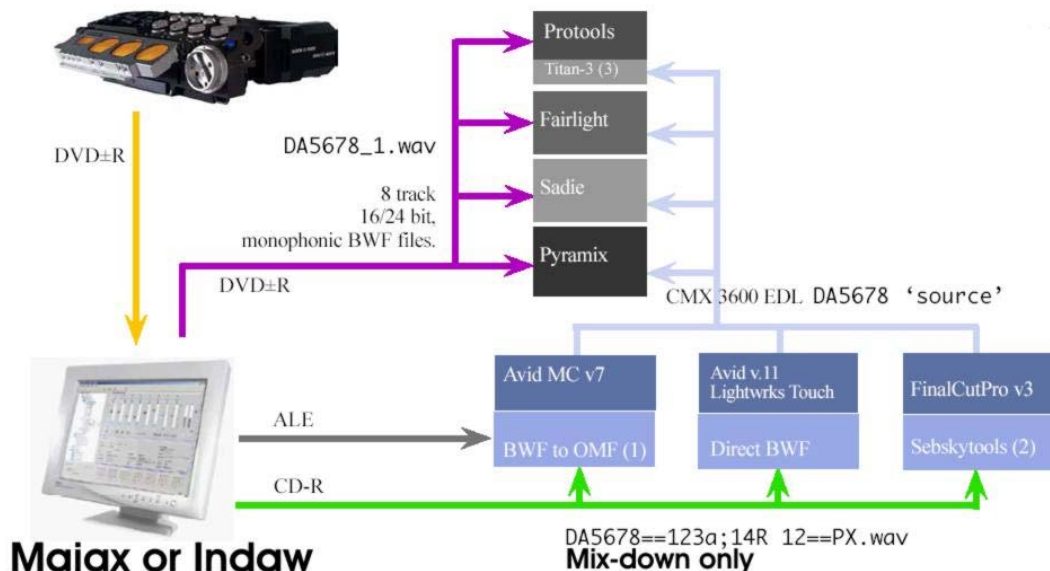
- Simple to handle, CD-Rom burning time takes only a few minutes and can leave with Pictures.
- Picture Editing only worries about 2 tracks
- Original tracks can be copied separately once every two or three days on a DVD or External hard disk and sent directly to Sound house
- Conforming with CMX is automatic and precise
- Conforming is done with native materials, in FULL quality 24bits 96KHz without passing through any other device able to downstream the quality.

DIS-ADVANTAGES

- level controls are not passed in CMX, it needs to be redone. *(Note that this issue is under development and AAF format should be the solution, it is a script language transporting EDL information and more...)*
- ProTools customers need to get Titan V3 plugin.

EXTERNAL MIX-DOWN PATH

For Equipment not able to produce Mix-down from location or customer creating it on **MAJAX** (Aaton software package producing MXD on PC Laptop) can go this alternative path, it is very similar except the fact that mix-down is made outside of the Audi disk recorder.



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Note that it is then possible to combine this step with audio Sync provided with Aaton INDAW.

At this point there is 3 possible options:

- **On location shooting was done with camera and audio time codes.** Then Avid and Lightworks are able to Autosync by correlating both time codes together. *(you do not need Indaw)*
- **On location cameras do not have time code option. Digital clap was used.** Then telecine operator enters manually red time codes. It can be auto synced but in most cases there are errors of 1 to 3 frames, just because digi-slates drifts or was not re-clocked. INDAW will clean it up.
- **One location cameras do not have time code option. Wooden clap was used.** Then telecine operator makes a mute transfer INDAW will sync, build the Database to allow NLE to use AutoSync feature.

Note that on Indaw it is always possible to insert the Synced sound on the tape. But this process needs to be done in real time, while via databases it is instant.

So:

Simple MIX DOWN = **MAJAX**
MIX DOWN + SYNC = **INDAW**

DETAILS:

Tape “clean up” and generation of sync enriched database

(ALE or Flex) - (Indaw with Post Sync option)

Once the telecine transfer is made a working mute tape and a database arrive in Post. Indaw takes control of the VTR via RS-422 and use the database generated on telecine, at this point indaw can tweak the Flex database, setting more precisely camera starts, adjusting in and out points. Once this is done Indaw will complete the database with sound information relating audio in and out point on tape to the stored audio files.

Indaw produce a database under ALE, FLEX, ATN and ODB, containing precise and clean labels (VideoTC + KeyCodes + AudioTC). This database is to be used for digitizing in the NLE.

The database is interpreted by Avid and Lightworks Editing systems, placing scene, take, remarks on the right fields to deliver to the editor a filled timeline. The Cantar UnicityFilename appears in the field “SoundFile” used for the direct auto-conformation on Pyramix or Protools.

3. Recording of sound on SD or HD tapes

(Indaw with Post Sync option)

Indaw can inset into the mute working tape a sync sound. It is also possible to re-generate VITC and burn in picture windows brining on screen sequence, take, and AudioTC.

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Indaw with Post Sync option)

This synchronization ability allows the INDAW to sync HIGH DEFINITION tape, edited or not. It is possible as long as this tape holds the same Video Time code as the SD tape.

This make possible HD screening of HD rushes with very simply and quickly.

Indaw adapt audio play-out automatically to ANY requested speeds such as 23.98/24/25/29.97/30 fps.

4. DIGITIZING rushes in NLE

[Avid/LighTouch/FCP]

Recording is performed with the help of the Database cleaned on Indaw, it carries very accurate in and out points and is enriched with comments and scene and tk labels.

5. Importing/Sync. Sound

6. s in NLE

[Avid/LighTouch/FCP]

Thanks to the correlated database made on INDAW, videoTC \leftrightarrow AudioTC, imported sound files via CDR or SAN network are instantly sorted and synchronized by the function AutoSync. Creating a Ghost shot made of a Video chanel and one or more audio channels, just like if you had on location AatonCode or ArriCode cameras.

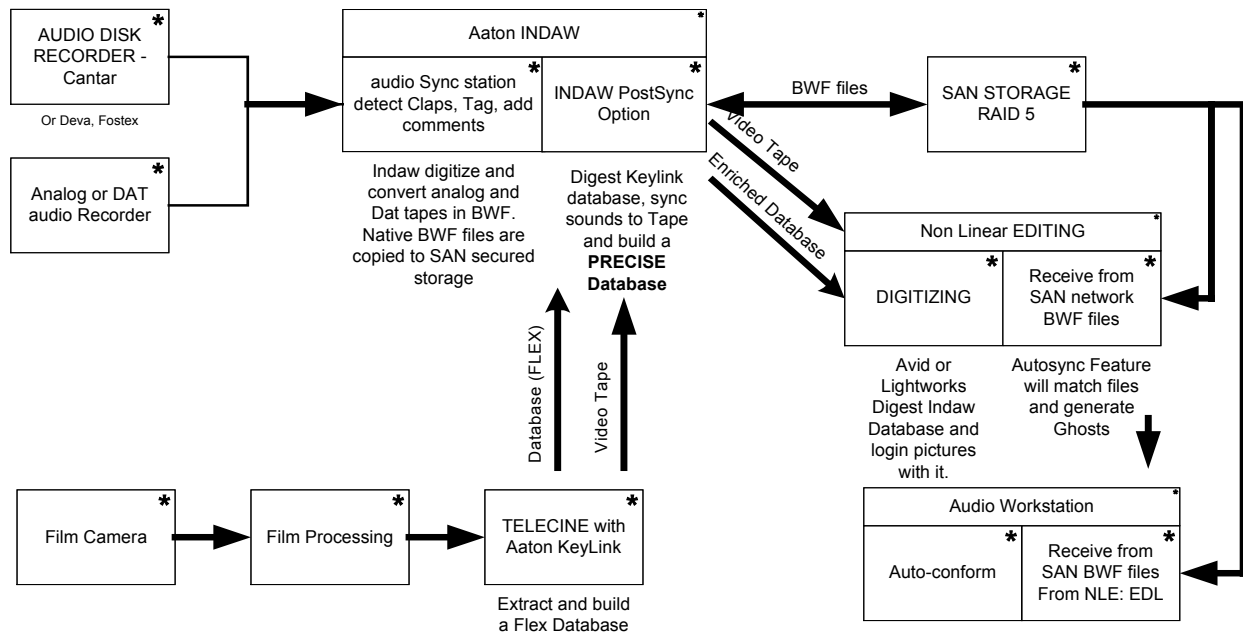
Note 1: Avid V7 will only handle 16bits polyphonic BWF files, Indaw is integrating an export / converted format to meet this requirement.

Note 2: Lightworks Touch accept Monophinic multiple files or Polyphinic files 16 or 24bits, so you can load or Original tracks or just the mix-down.

Note 3: Exported from Indaw 16bits polyphonic BWF files can be processed on AtonXfer to produce OMF for older Avid systems and Lightworks Heavyworks & Turbos NLEs.

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6. SOUND 24bits Auto-conformation

[Pyramix, Protocols, etc.]

After editing with mix-down sounds in 16bits or 24bits (mono or stereo), it is possible to produce an Audio CMX EDL, in witch the “UnicityFileNames” from the Cantar are stored in field “SoundFile”. They will be used to conform original 24bits multi-tracks to the EDL. This can be done on Piramix or on Protocols with the help of the Titan-3 plug-in.

GLOSSARY

- **BWF-M** = Monophonic sound file, each file contain ONE unique audio Track, simple and clear to handle, but slow optical recording devices can not handle simultaneous file recording.
- **BWF-P** = Polyphonic, sound files are embedded inside of one file. Multi-tracks are stripped and mixed in this single file. This format can be recorded on Optical DVDRam devices but this format is unusable in post-production.
- **BWF** = Broadcast WAV, is an enriched WAV keeping in header TC and other labels vital for professional applications, details refer to:

http://www.interlab.fr/docs/aaton/docs/indaw/BWF_aaton_samples/bwf_structure.pdf

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