

SACD Mastering and Authoring with Pyramix 5



SUPER AUDIO CD

DSD

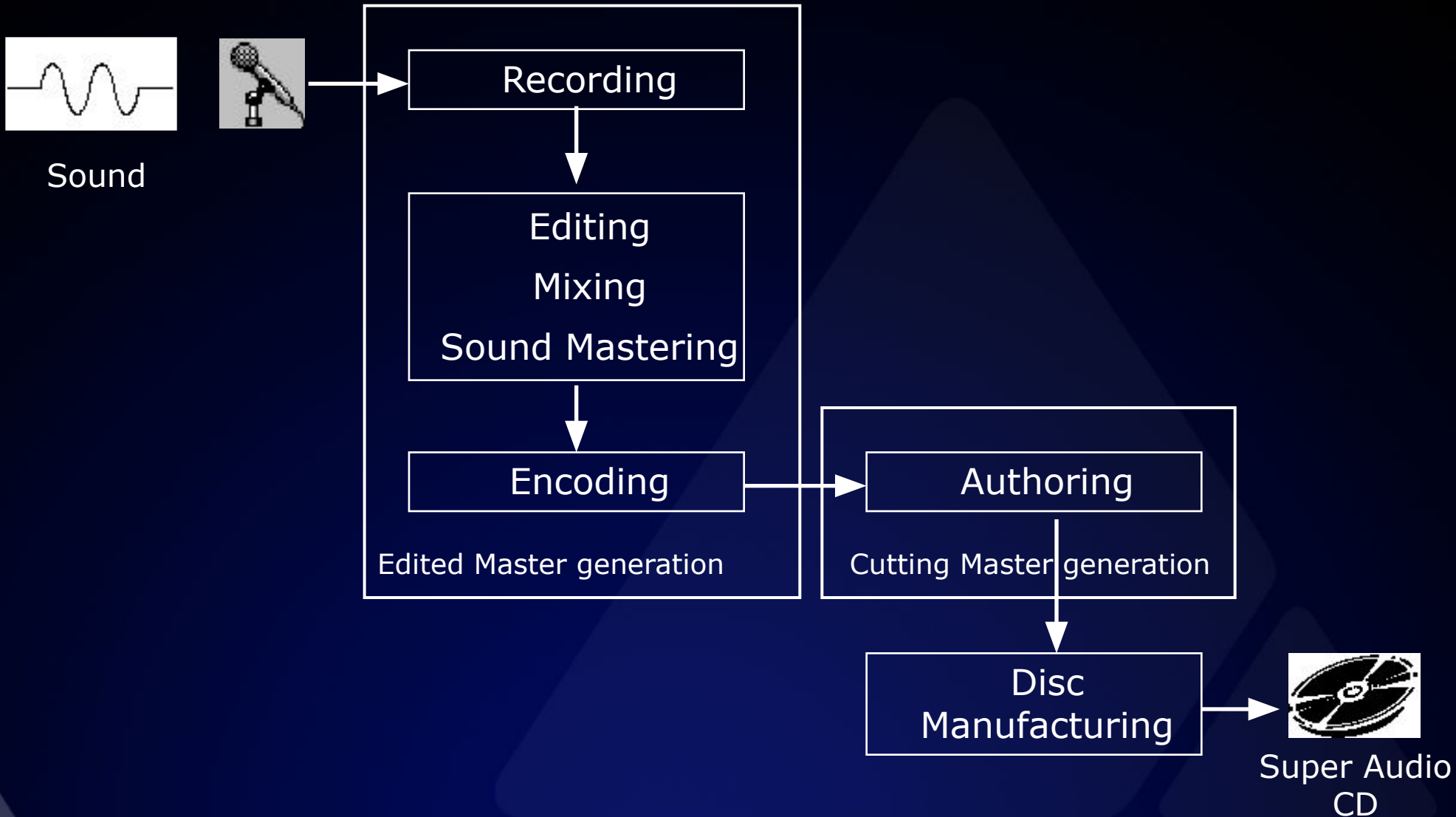
Direct Stream Digital

DXD

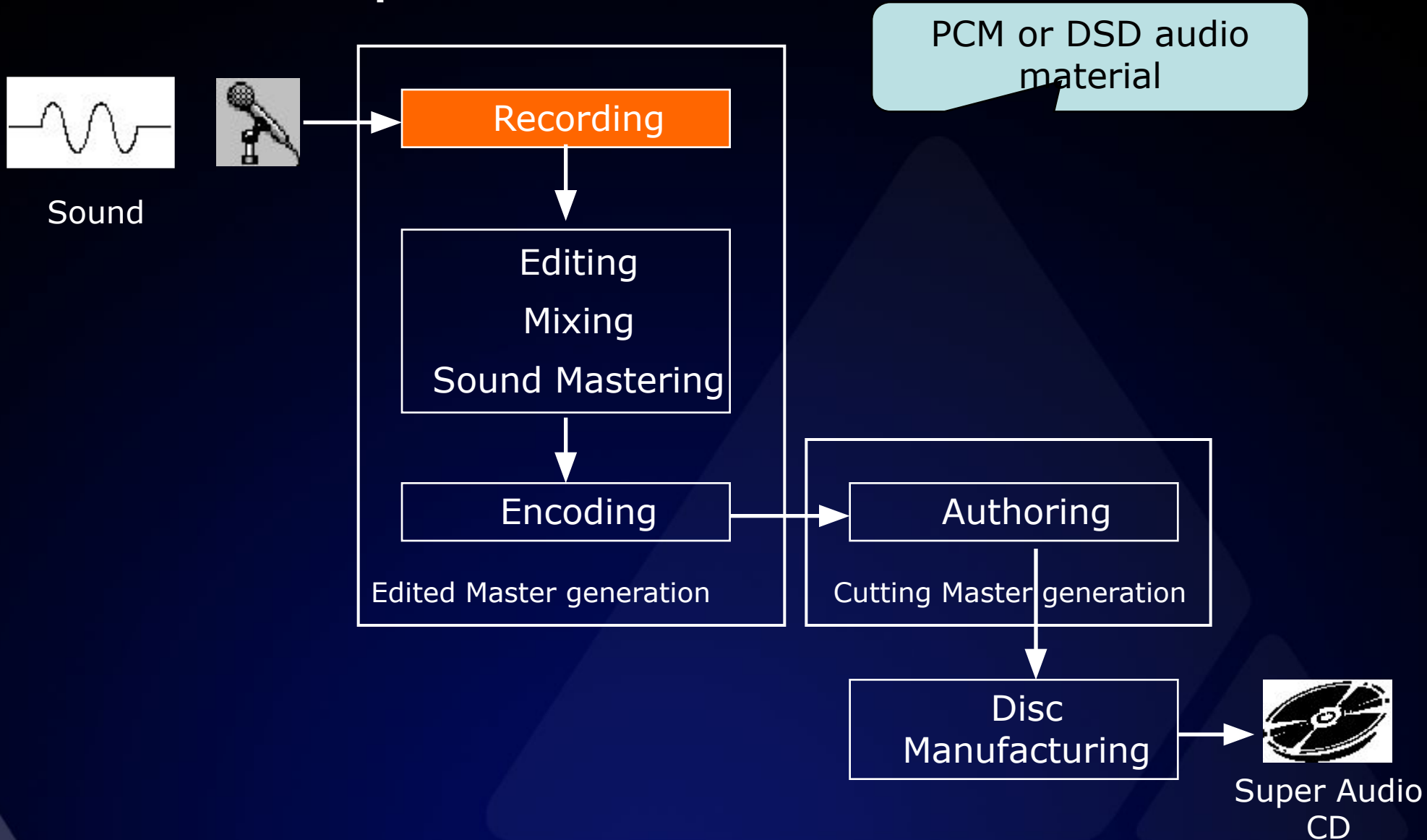
Digital eXtreme Definition

**Multi-ch
Stereo**

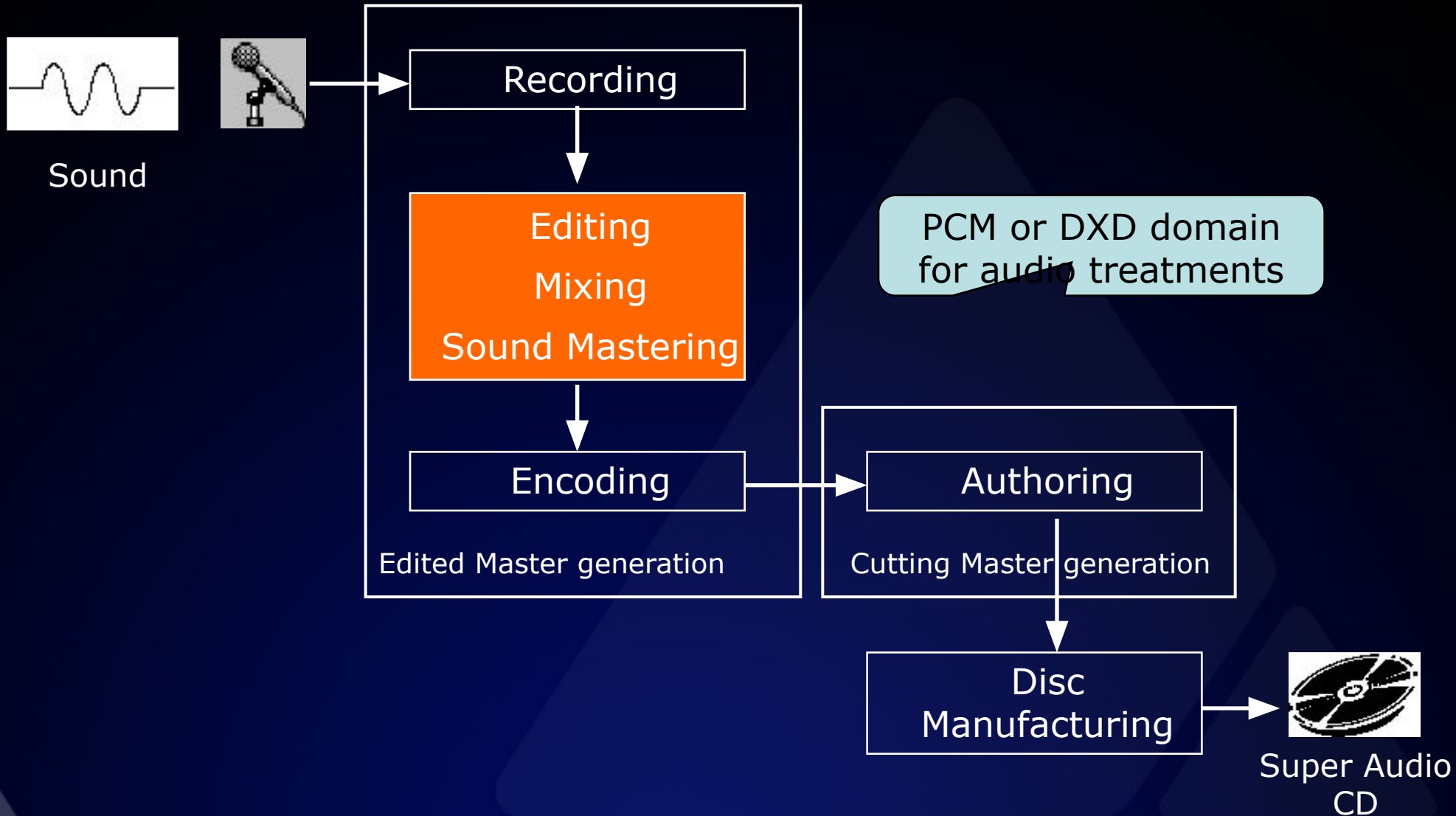
- **Global SACD production workflow**



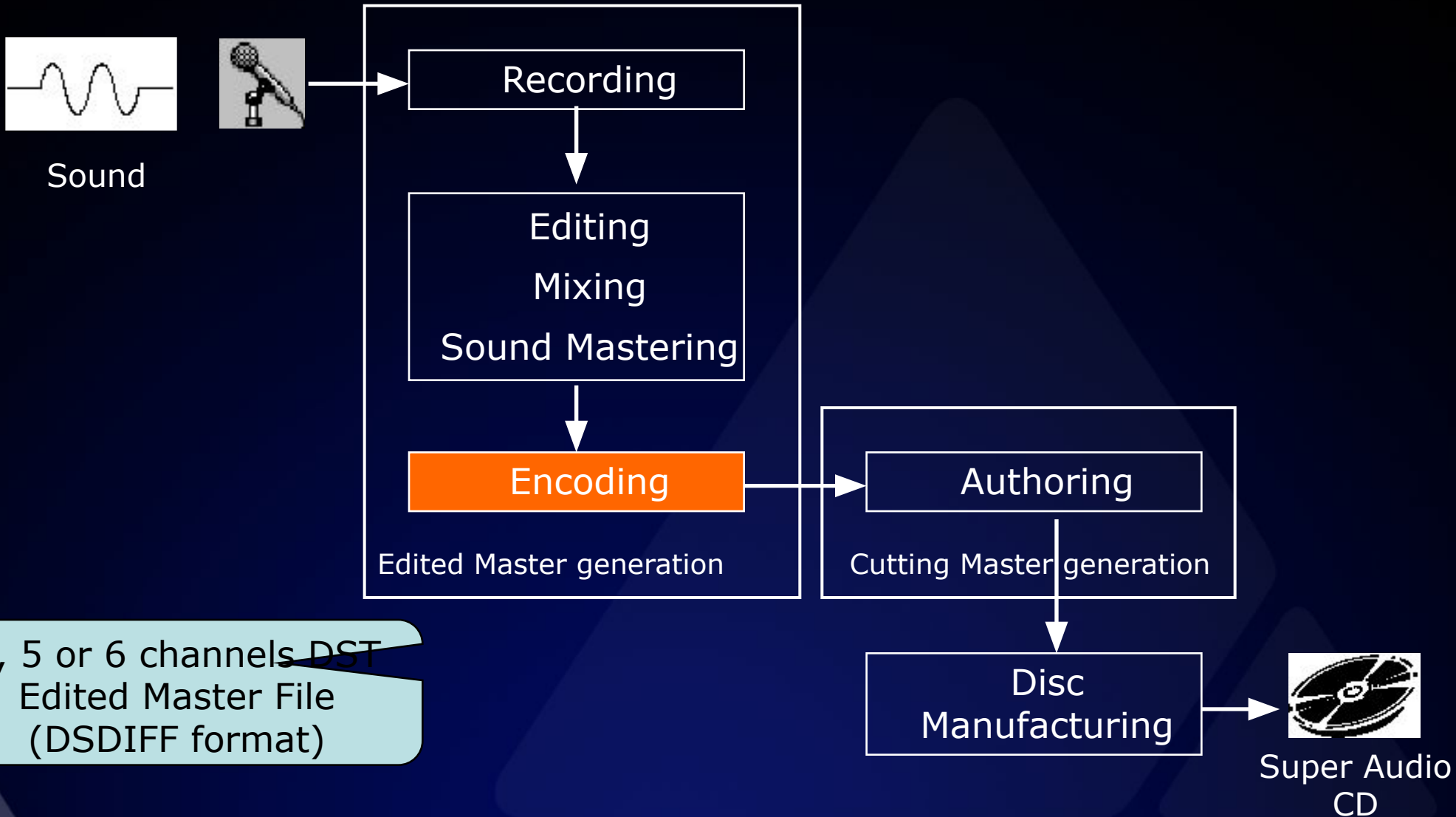
- **Global SACD production workflow**



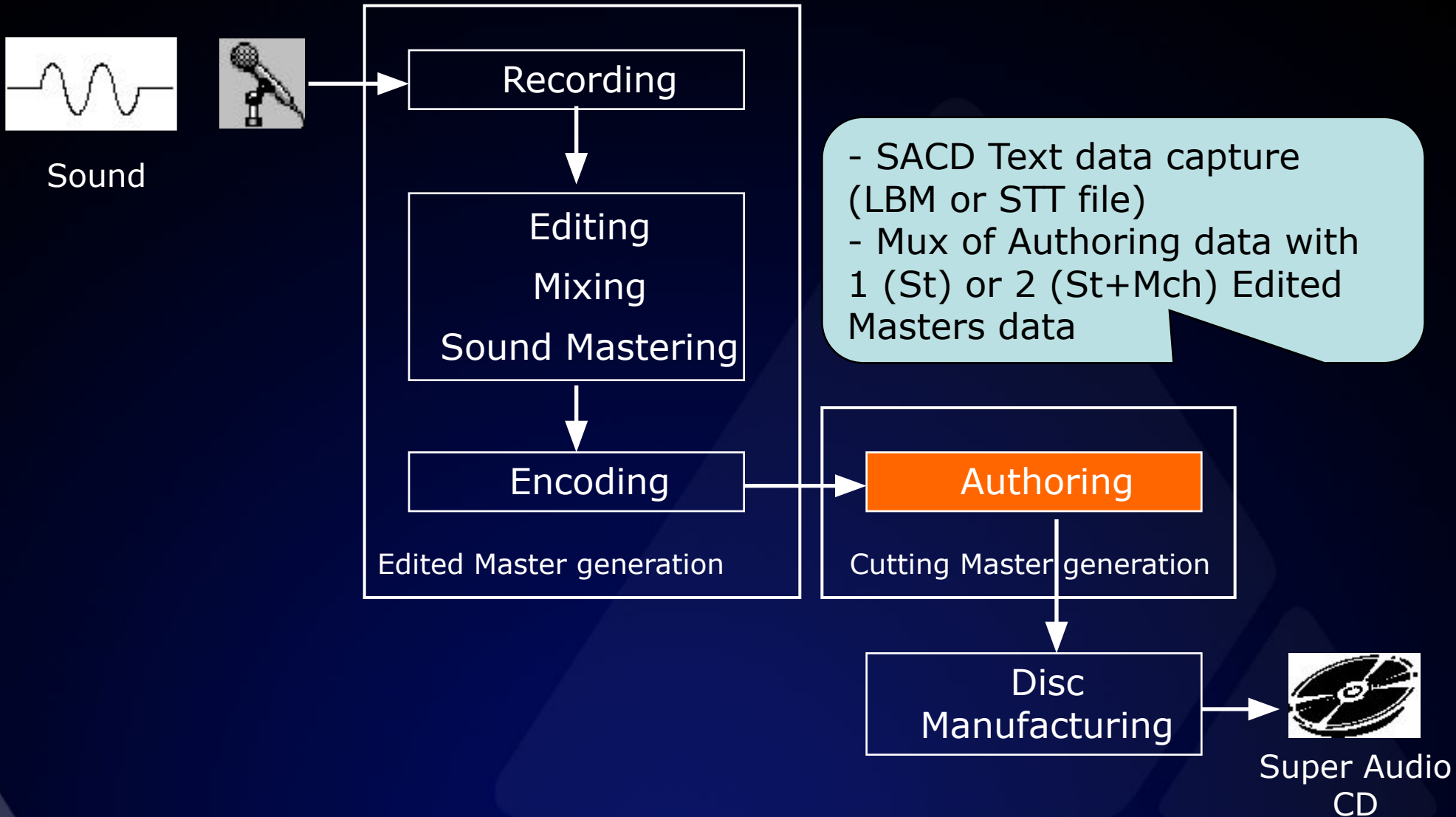
• Global SACD production workflow



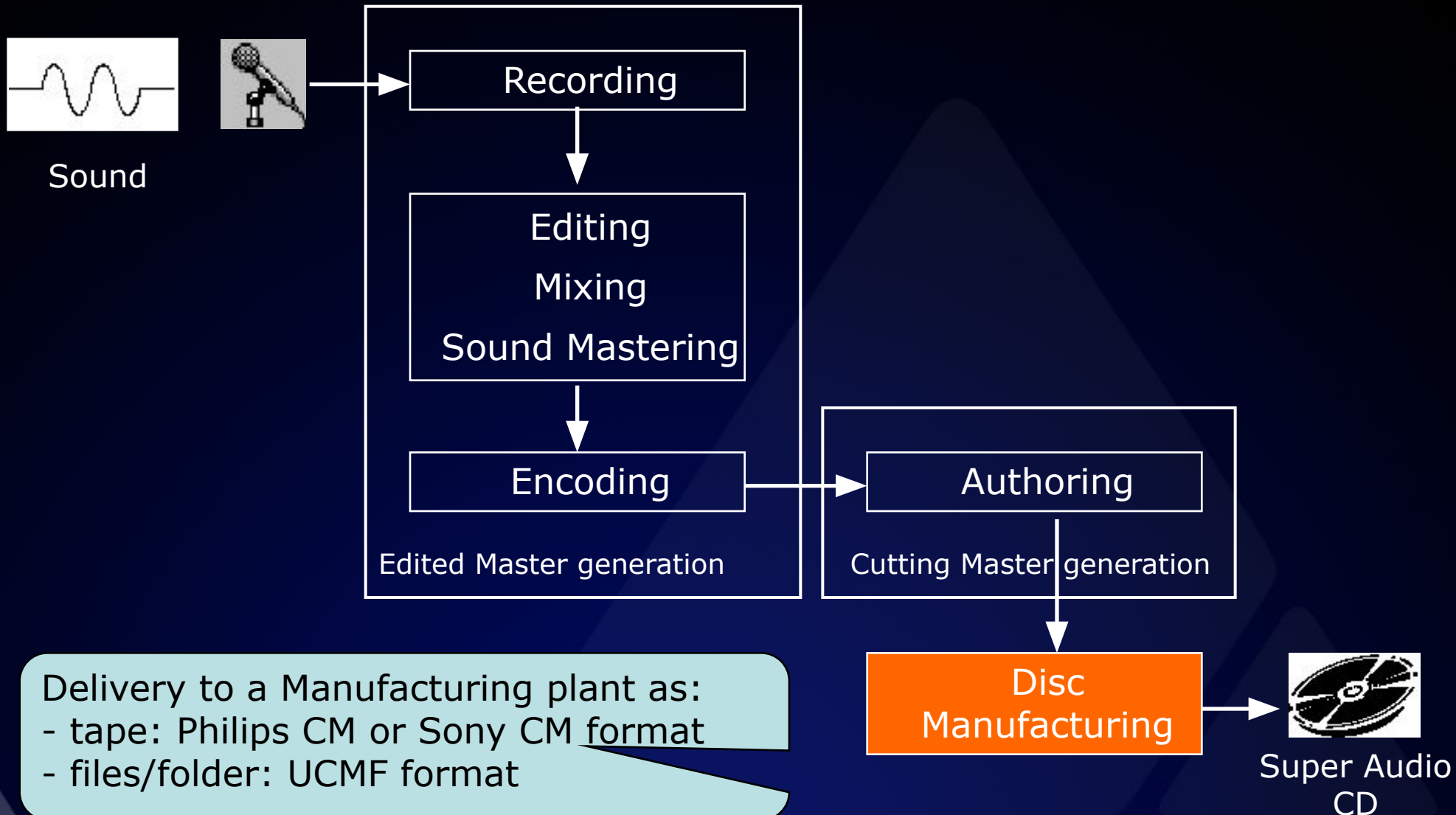
• Global SACD production workflow



• **Global SACD production workflow**



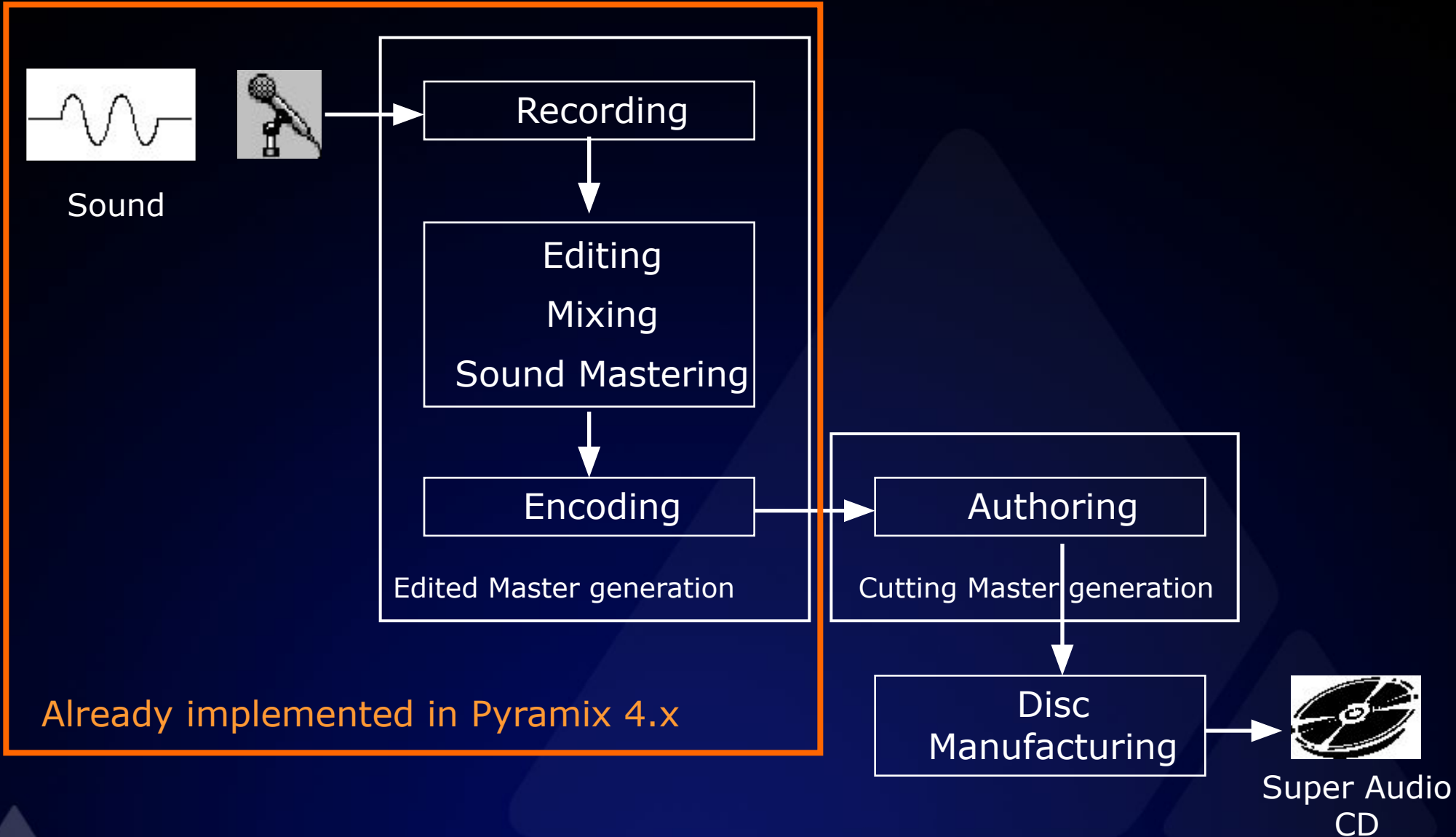
• Global SACD production workflow



Delivery to a Manufacturing plant as:

- tape: Philips CM or Sony CM format
- files/folder: UCMF format

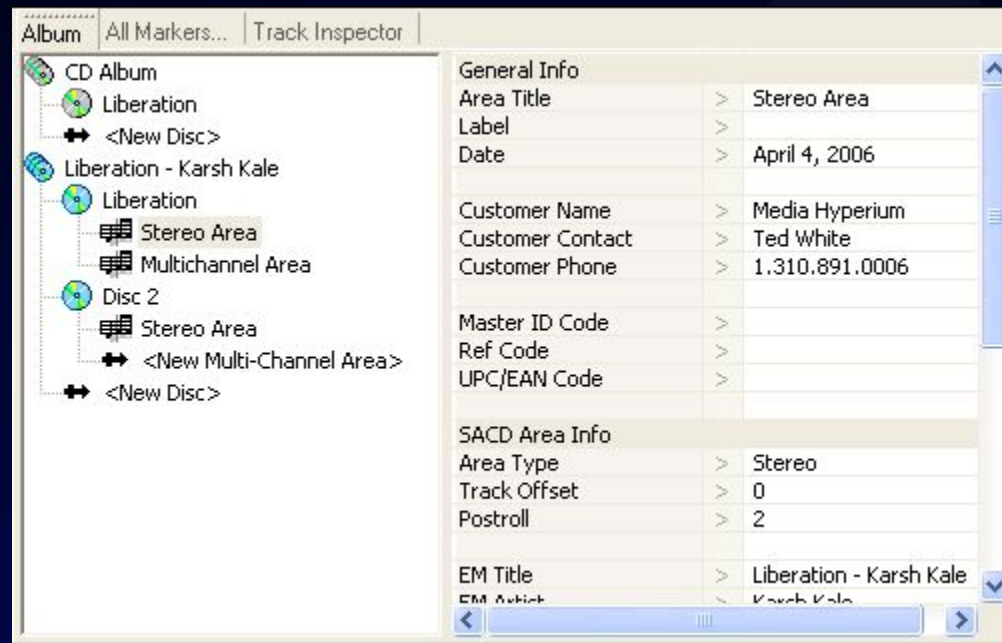
- **Global SACD production workflow**



- **What's new in Pyramix 5?**

- Handling of multiple CD and SACD Discs in a single project
- Full SACD Text implementation
- Easy creation of CD disc from SACD or SACD disc from CD
- Batch generation and encoding of Edited Masters
- DSD Annex D3 verification
- Import/Export of LBM and STT Authoring file format
- SACD Cutting Master generation including Tape export and verification

- **Manage SACD Stereo, Multi-channel and CD Authoring in a single project**



- Manage SACD Stereo, Multi-channel and CD Authoring in a single project

The screenshot shows a DAW interface for SACD production. The top section displays a timeline with markers and a list of tracks for channels 1L through 6R. The bottom section shows a 'Discs' panel with a tree view of the project structure and a table of tracks.

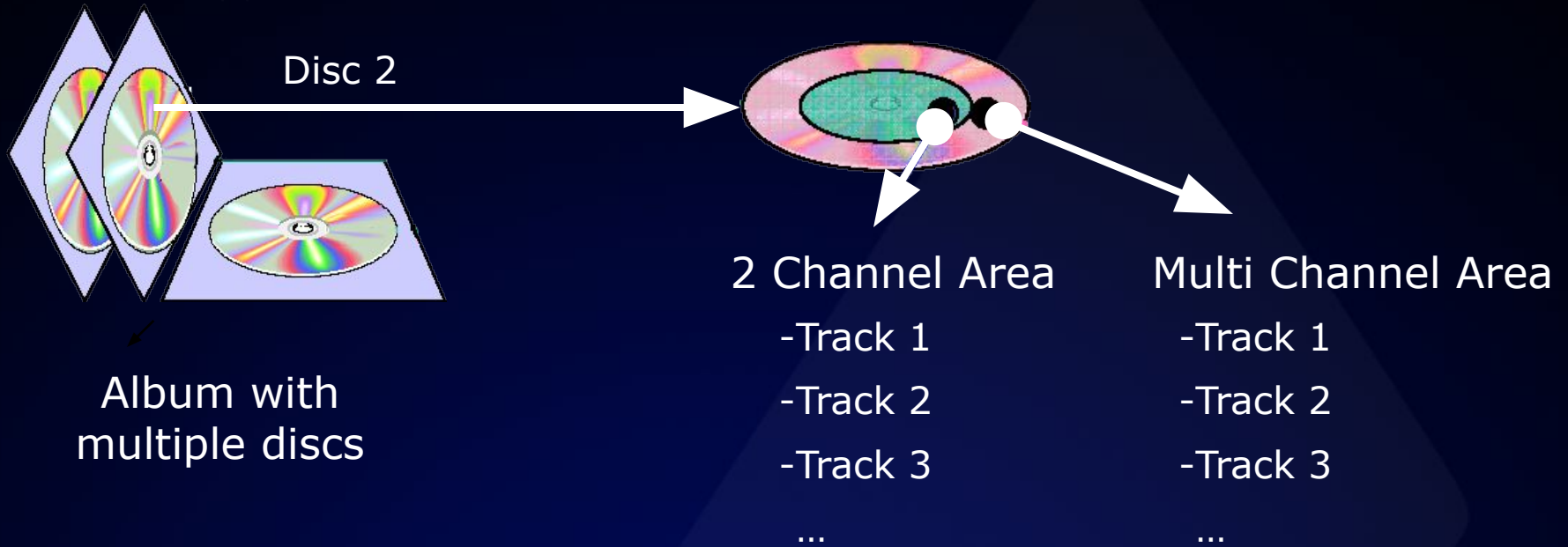
Discs Panel:

- CD Album
 - Liberation
 - <New Disc>
- Liberation - Karsh Kale
 - Liberation
 - Stereo Area
 - Multichannel Area
- Disc 2
 - Stereo Area
 - <New Multi-Channel Area>
 - <New Disc>

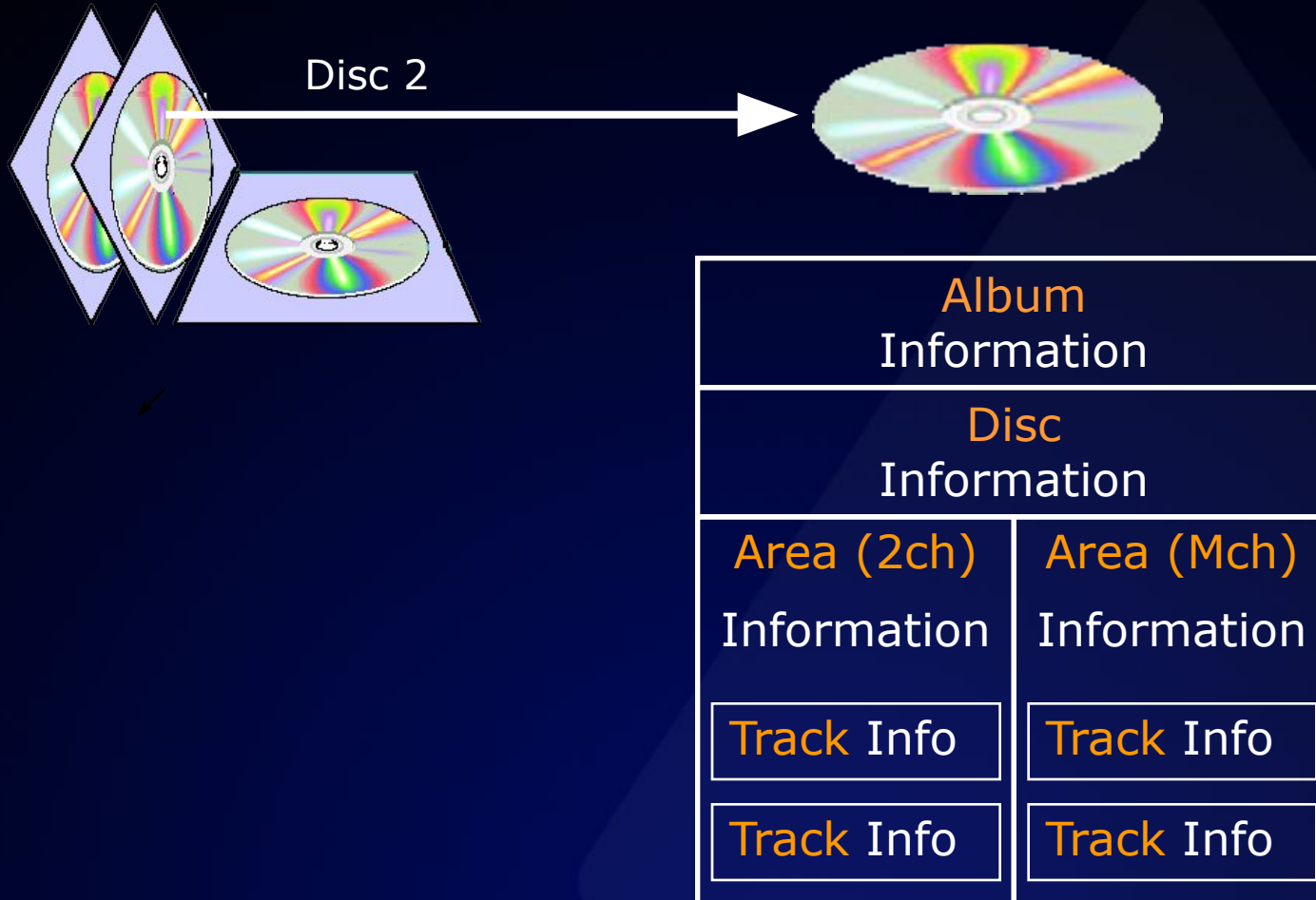
Tracks Table:

Name	#	Pause	Start	End	Length	Start Offset	L
Click here to add a new CD Track							
Cinematic Reprise	1	00:00:00:00	23:59:59:14	00:02:54:55	00:02:55:41	00:00:01:00	Y
Epic	2	00:00:00:00	00:02:54:55	00:08:20:13	00:05:25:33	00:00:00:00	N
Instinct	3	00:00:02:00	00:08:22:13	00:14:04:24	00:05:42:11	00:00:00:00	N
Milan	4	00:00:01:26	00:14:05:50	00:23:01:27	00:08:55:52	00:00:00:00	N
Dirty Fellow Remix	5	00:00:00:00	00:23:01:27	00:29:01:36	00:06:00:09	00:00:00:00	N
Tabla Song	6	00:00:00:00	00:29:01:36	00:31:58:55	00:02:57:19	00:00:00:00	N
Liberation	7	00:00:00:00	00:31:58:55	00:36:58:51	00:04:59:71	00:00:00:00	N
Letting Go	8	00:00:00:00	00:36:58:51	00:43:13:23	00:06:14:47	00:00:00:00	N
Analog Mood Swings	9	00:00:00:00	00:43:13:23	00:49:43:14	00:06:29:66	00:00:00:00	N
Letting Go Remix	10	00:00:00:00	00:49:43:14	00:56:09:27	00:06:26:13	00:00:00:12	Y

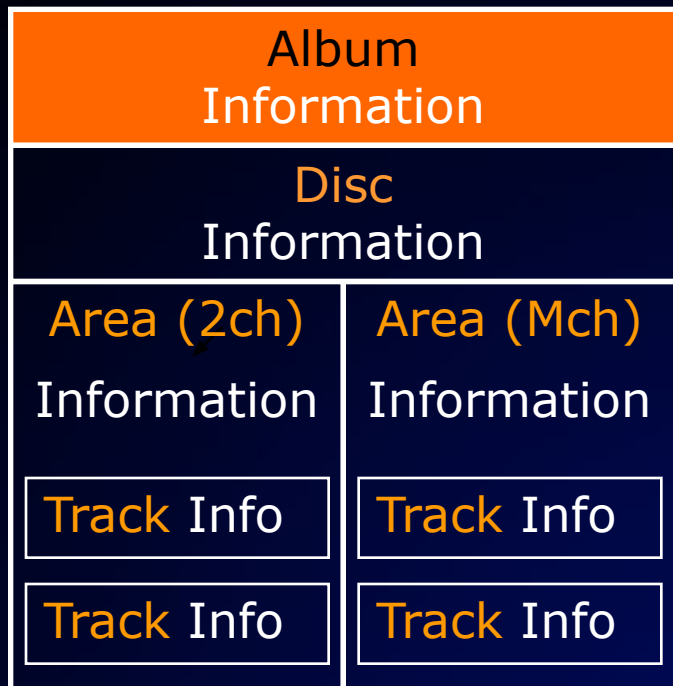
- **Full SACD Text implementation (1)**
 - 4 levels of information: Album, Disc, Area, Track



- **Full SACD Text implementation (2)**
 - 4 levels of information: Album, Disc, Area, Track



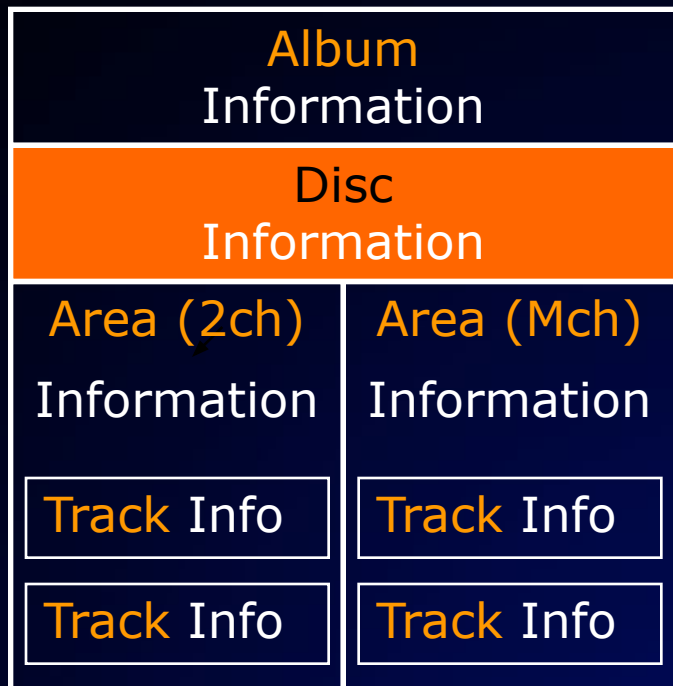
- **Full SACD Text implementation (3)**
 - 4 levels of information: Album, Disc, Area, Track



The screenshot shows the 'Track Inspector' window with the following metadata:

Customer Name	>	Mister T
Customer Contact	>	
Customer Phone	>	+414789456544
Master ID Code	>	00000000000000
Ref Code	>	
UPC/EAN Code	>	012414157487412
Catalog Number	>	012345789014
SACD Album Info		
Genre #	>	1
Table	>	General Genre
Index	>	Alternative Rock
Text Channel #	>	1
Character Set	>	Latin (ISO 8859-1)
Language	>	French
Title	>	albumTitle
Artist	>	albumArtist
Publisher	>	albumPublisher
Copyright	>	albumCopyright
Title (Phonetic)	>	
Artist (Phonetic)	>	
Publisher (Phonetic)	>	
Copyright (Phonetic)	>	

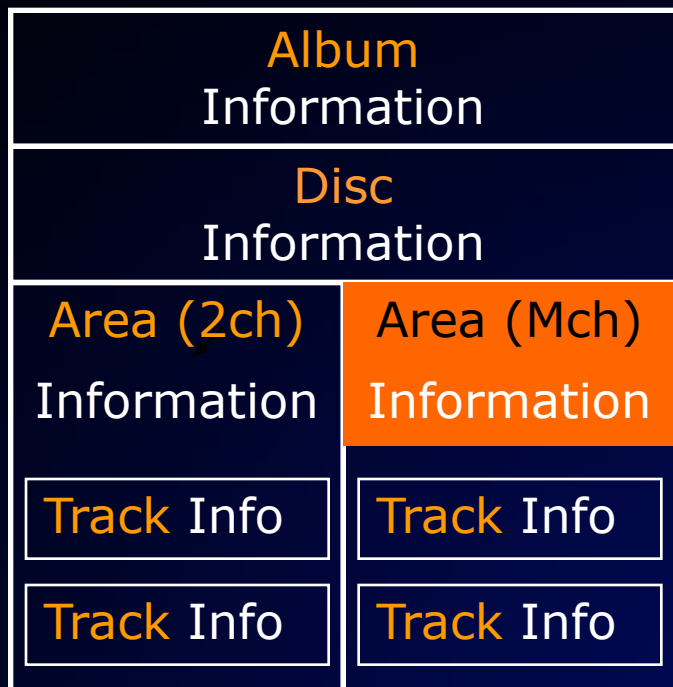
- **Full SACD Text implementation (4)**
 - 4 levels of information: Album, Disc, Area, Track



The screenshot shows a software interface for editing SACD metadata. The left pane displays a tree view of the project structure, including 'CD Album', '<New Disc>', 'SACDAlbum', 'Disc 1', 'Stereo Area', 'Multi-Channel Area', and '<New Disc>'. The right pane shows the 'SACD Disc Info' section with the following fields and values:

SACD Disc Info	
Disc Type	> Hybrid
Layer 0 Size (MB)	> 0
Text Channel for CD T...	
Genre #	> 1
Table	> General Genre
Index	> Country
Text Channel #	
Text Channel #	> 1
Character Set	> Latin (ISO 8859-1)
Language	> French
SACD-Text Title	
SACD-Text Title	> DiscTitle
SACD-Text Artist	
SACD-Text Artist	> DiscArtist
SACD-Text Publisher	
SACD-Text Publisher	> DiscPublisher
SACD-Text Copyright	
SACD-Text Copyright	> DiscCopyright
SACD-Text Title (Phon...	
SACD-Text Title (Phon...	>
SACD-Text Artist (Pho...	
SACD-Text Artist (Pho...	>
SACD-Text Publisher (...)	
SACD-Text Publisher (...)	>
SACD-Text Copyright ...	
SACD-Text Copyright ...	>

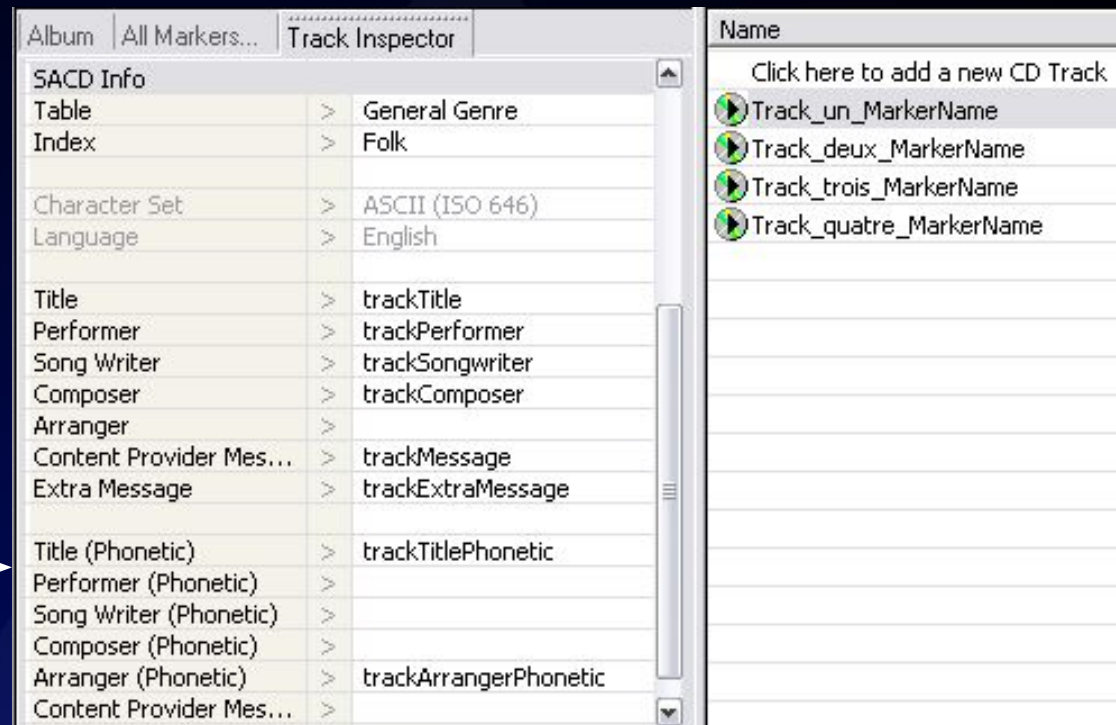
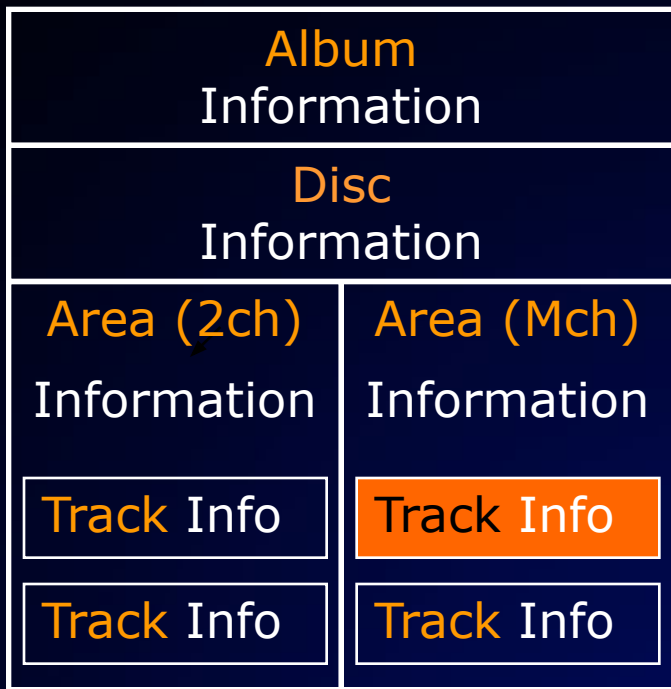
- **Full SACD Text implementation (5)**
 - 4 levels of information: Album, Disc, Area, Track



The screenshot shows a software interface with a tree view on the left and a detailed view on the right. The tree view shows a hierarchy: CD Album > <New Disc> > SACDAlbum > Disc 1 > Stereo Area (selected). The detailed view on the right shows the following information:

SACD Area Info	
Area Type	> Stereo + extra data
Track Offset	> 0
Postroll	> 2
EM Title	> TestAuthoring_ST_EM...
EM Artist	> TestAuthoring_ST_EM...
EM ID	> TestAuthoring_ST_EM...
Area Text	
Text Channel #	> 1
Character Set	> ASCII (ISO 646)
Language	> English
Name	> areaDescription
Copyright	> areaCopyright
Name (Phonetic)	> areaDescriptionPh
Copyright (Phonetic)	> areaCopyrightPh
Markers/Tracks Relation	
Markers are linked to	> Any Track

- **Full SACD Text implementation (6)**
 - 4 levels of information: Album, Disc, Area, Track

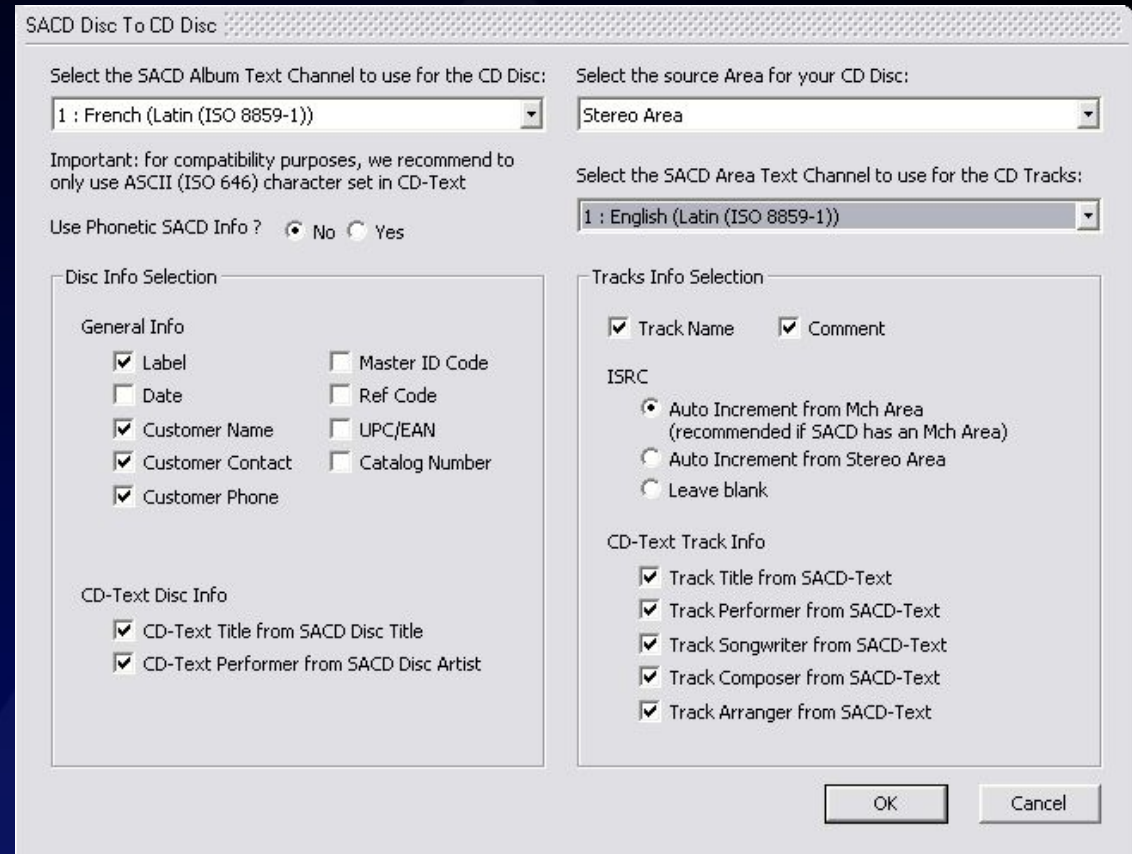


- **Full SACD Text implementation (7)**

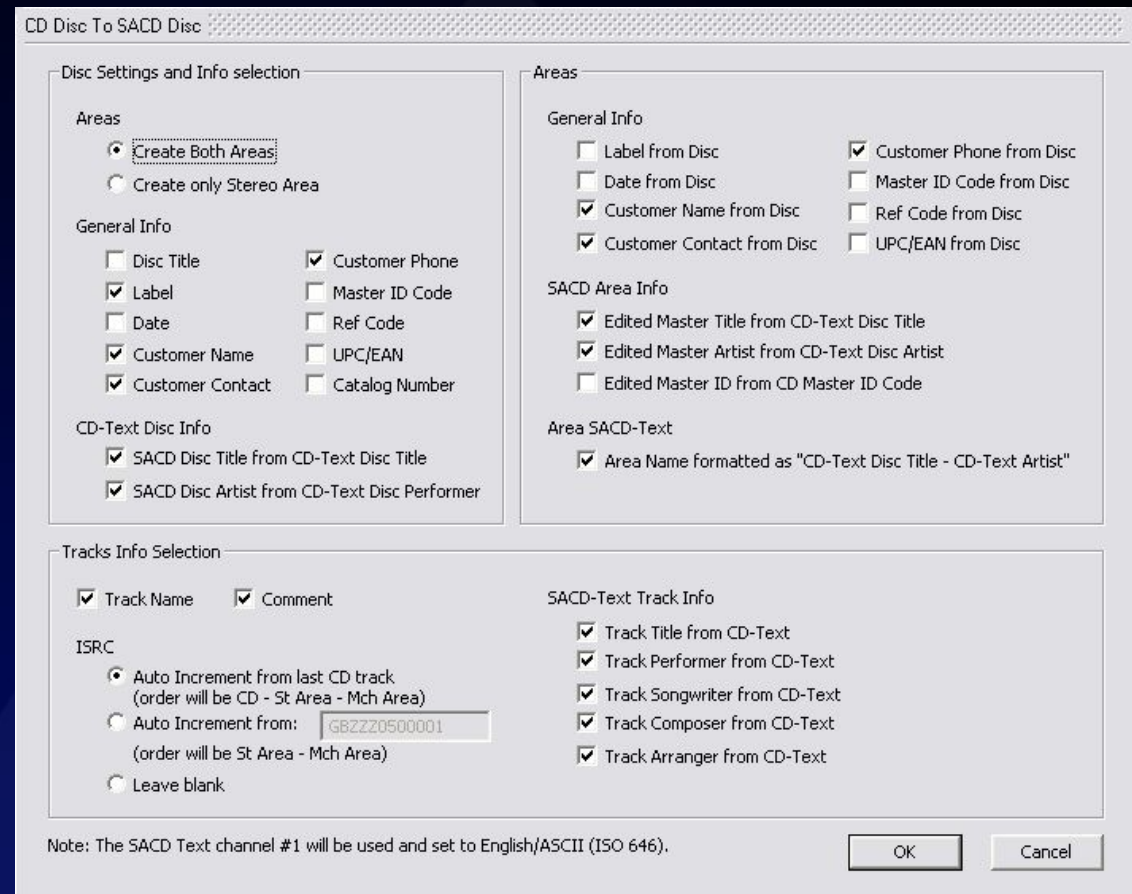
- Multilingual text:

- Text channels definition (for Album and Areas):
 - language code (ex: French)
 - Character set code (ex: Latin (ISO 8859-1))
- Up to 8 Text channels (at least 1 must be defined for text information)
- Affects:
 - Title, Artist/Performer, Songwriter, Composer, Arranger, Message, Extra message, Area Name, Copyright, Publisher.

• Easy creation of CD disc from SACD or SACD disc from CD



- Easy creation of CD disc from SACD or SACD disc from CD



- **Cutting Master Wizard (1): Batch generation of EM**

SACD Cutting Master Wizard - DSD Edited Master Generation

Table of Content

Track #	Index #	Time [Offset]	ISRC/Name
001	00	00:00:00 [0]	FRFRE0123400
	01	00:04:00 [-150]	Track_un_Marke
	02	00:12:49 [0]	Track-un_Index
	03	00:14:54 [25]	Track-un_Index
Length		01:04:62 [0]	Track-un_Index
Length		02:47:06	
002	00	02:49:16 [-10]	FRFRE0123401
	01	02:49:16 [-10]	Track_deux_Mar
	02	03:12:40 [0]	Track-deux_Ind
	03	04:20:41 [0]	Track-deux_Ind
Length		03:04:10	
003	00	05:52:66 [25]	FRFRE0123402
	01	05:54:66 [0]	Track_trois_Ma
Length		05:17:04	
004	00	11:11:74 [-4]	FRFRE0123403
	01	11:11:74 [-4]	Track_quatre_M
	02	12:13:10 [0]	Track-quatre_I
	03	17:03:09 [0]	Track-quatre_I
Length		07:26:54	
AA	01	18:38:49	

Selected Area Settings (Stereo Loudspeakers Configuration)

File Name
TestArea1

Location
I:\Maquette_Clips\clips_in_vegas-nuendo2\

Mixer Sources

- Srnd#1-L
- Srnd#1-C
- Srnd#1-R
- Srnd#1-Ls
- Srnd#1-Rs
- Srnd#1-Lfe
- St#1-L
- St#1-R

Note: Only Bus channels with channel types are displayed

Common Settings

DSD IFF Settings

Sampling Rate Conversion Quality

- Very High
- High

Generate all DSD files (mixing Mode)

Abort

< Back Next > Cancel

□ A single button to generate all the edited masters of an Album

- **Cutting Master Wizard (2):**

The screenshot shows the 'SACD Cutting Master Wizard - SACD Annex D Verifying and DST Encoding' dialog box. It is divided into several sections:

- SACDAlbum:** A tree view on the left showing a hierarchy of Disc 1, Disc 2, and Disc 3, each containing Stereo Area and Multi-Channel Area.
- Selected Disc:** A section with fields for 'Image Name' (set to 'DISC_1'), 'Extra Data Folder', 'Intermediate Folder', and 'Image Folder'. Each field has a 'Browse' button. A note states: 'Note: Disc Image names are limited to 32 characters and restricted to the use of A-Z, 0-9 and '_' characters.' Another note says: 'Note: Not used for now' for the Extra Data Folder. A third note says: 'Note: During the CM Generation, SACD Disc Builder will write temporary data in this folder' for the Intermediate Folder. A final note says: 'Note: Specify the Destination Folder of the Cutting Master Image files' for the Image Folder.
- Selected Area:** A section with fields for 'Area Info' (set to 'Stereo Area, 4 tracks'), 'Input DSD audio file' (with a 'Browse' button), 'Encoding Strategy' (set to '00' with a 'DST Estimator' button), 'Output DST encoded file' (set to 'TestDST'), and 'Location' (set to 'I:\PmxMedia').

At the bottom, there are three buttons: 'Verify all DSD audio files' (labeled '1st Step'), 'Generate all DST files' (labeled '2nd Step'), and 'Write Album File for SACD Disc Builder' (labeled 'Final Step'). At the very bottom, there are '< Back', 'Next >', and 'Cancel' buttons.

- DSD Annex D3 Verification of all Edited Masters
- DST Encoding of all Edited Masters at once
- Generation of the Script file for Cutting Master generation

- **DSD Annex D3 verification**

- What is it?

- a specification on DSD Maximum peak level for SACD.

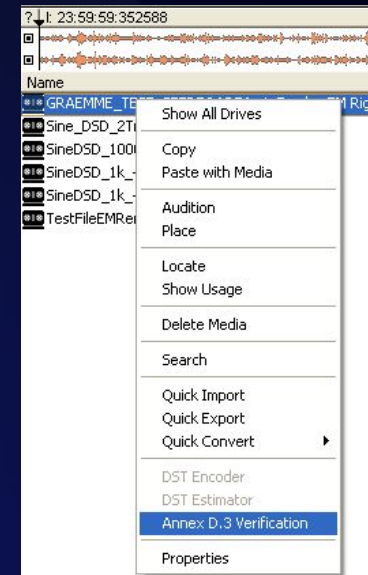
- «Peak signal levels above +3.10 dB SA-CD are not allowed. »

- This is equivalent to: the number of bits set to '1' within any 28 consecutive bits of the DSD Stream must fit in the [4 - 24] range.

- A necessary compliance for safe playback on SACD players

- Available from the Media Manager

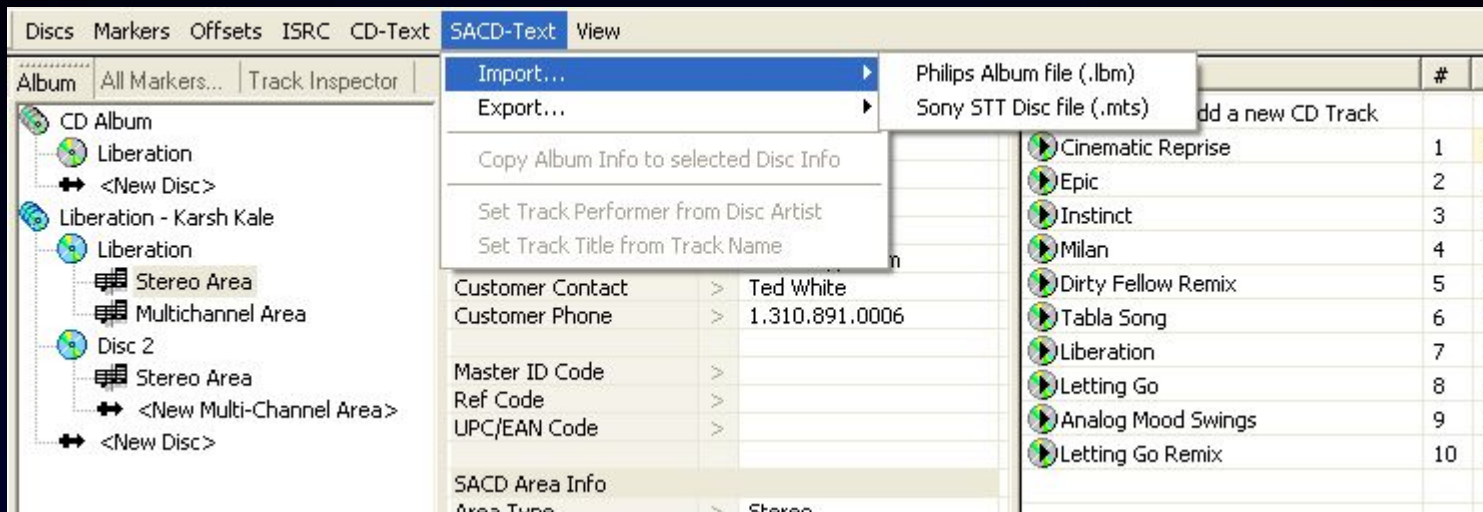
- Report (TXT file) showing Excessive DSD Modulation Levels if found



- **Import/Export of LBM and STT Authoring file format (1)**
 - LBM: SACD Authoring format introduced by Philips in Superauthor
 - STT: Sony SACD Text format (.mts extension)

	LBM format	STT format
Album Info	X	X
Disc Info	X	X
Track Info	X	X
Multiple discs	X	-
Markers Timecode	X	-
Disc Image Info	X	-

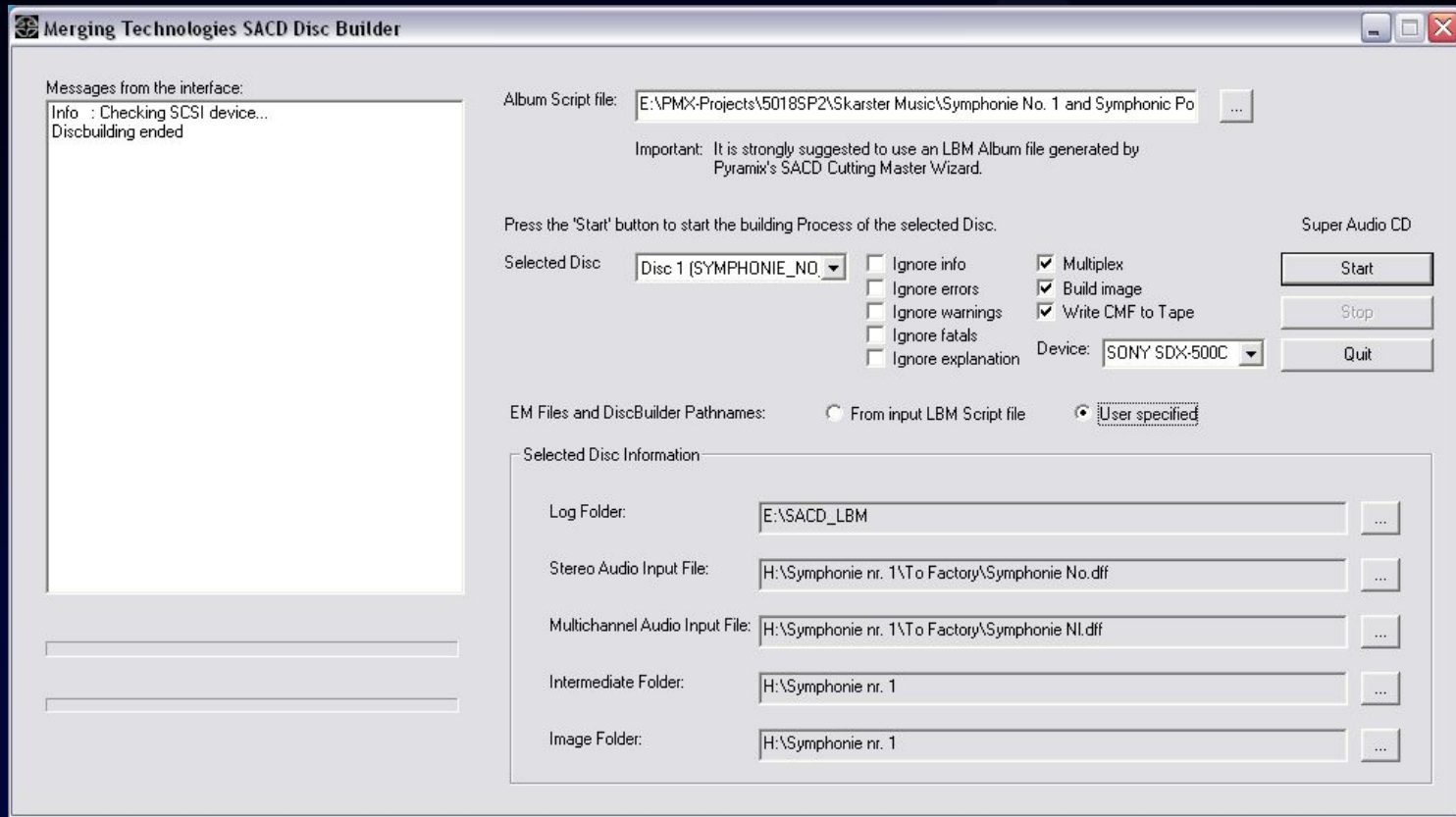
- **Import/Export of LBM and STT Authoring file format (2)**



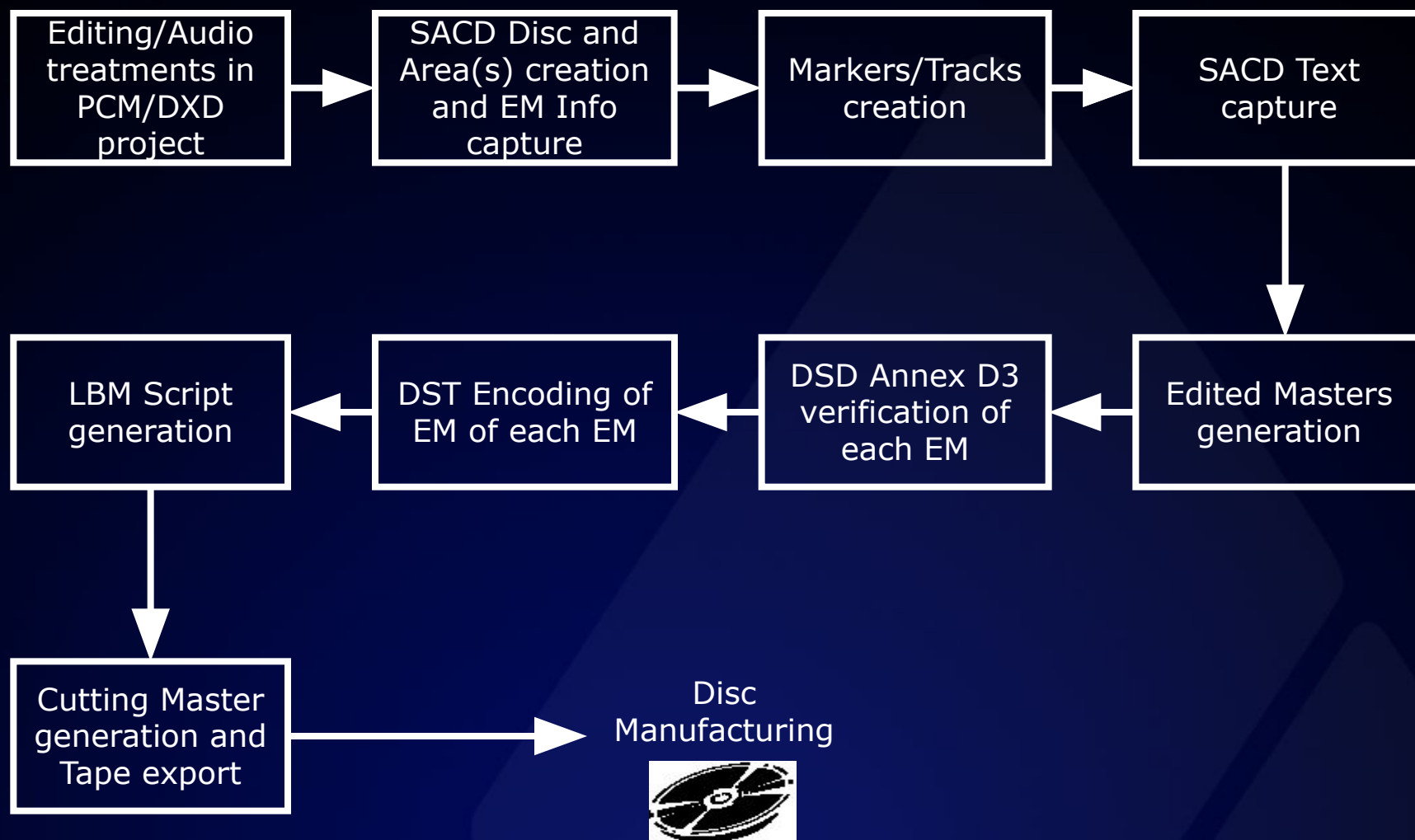
- Exchange with SuperAuthor/SonicStudio SACD Authoring software and Sony SACD Text Editor
- Script Generation (LBM only) for SACD Disc Builder

- **SACD Cutting Master generation including Tape export and verification (1)**
 - The very last step before Disc Manufacturing
 - A Cutting Master or Disc Image contains either:
 - 1 Stereo Area
 - 1 Stereo Area + 1 Mch Area
 - ...bundled with all TOC and SACD-Text information
 - **Input:**
 - LBM Script file
 - Stereo DST Edited Master and/or MCh DST Edited Master
 - **Output:**
 - A Disc Image on Hard disk (can be directly sent to Philips plants)
 - Optionally, if AIT SCSI drive connected, a Philips SACD Tape Cutting Master (can be converted with the Sony tool for delivery to Sony plants or directly sent to Philips plants)
 - Log files for each step of the process, including verification.

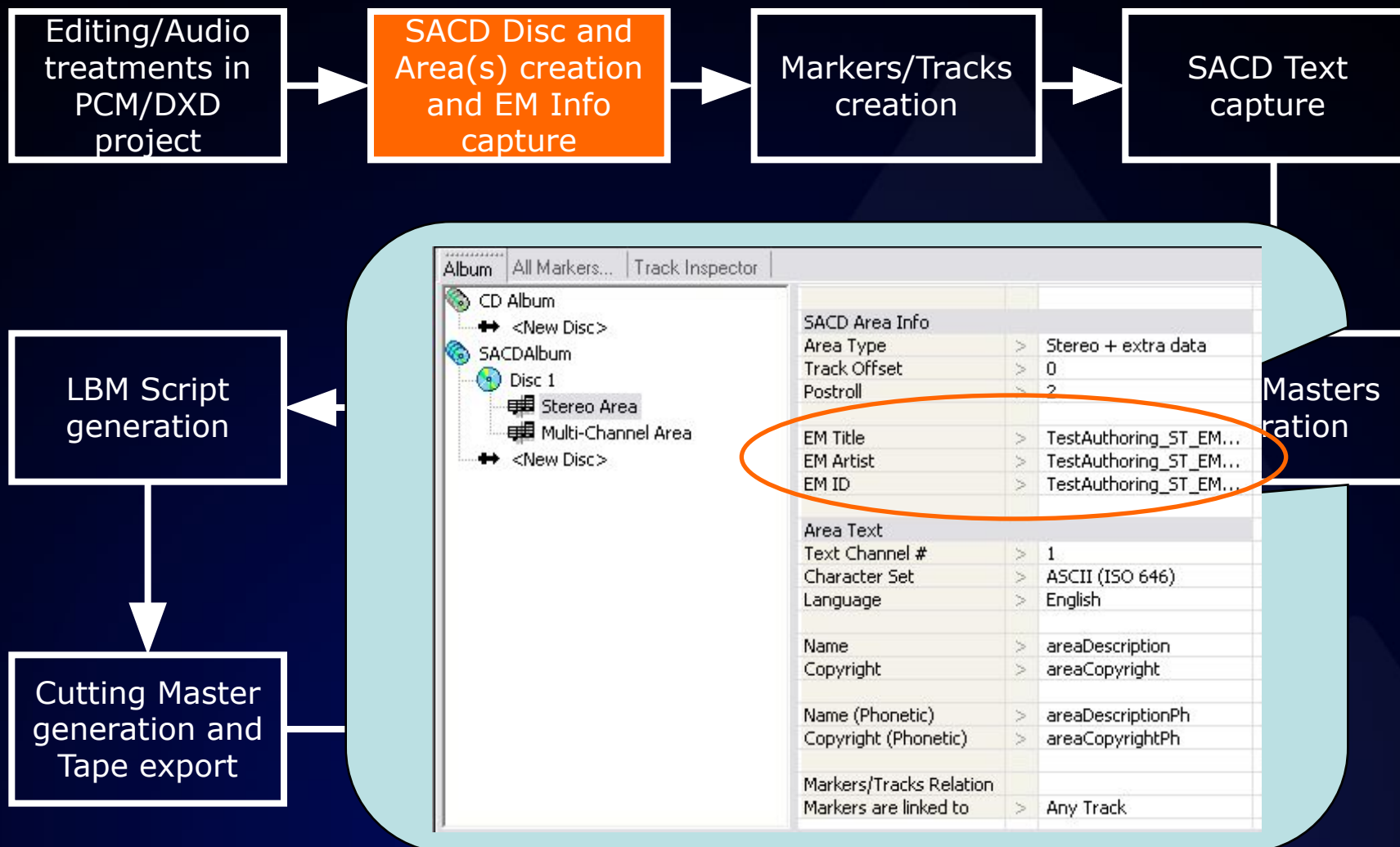
- **SACD Cutting Master generation including Tape export and verification (2)**



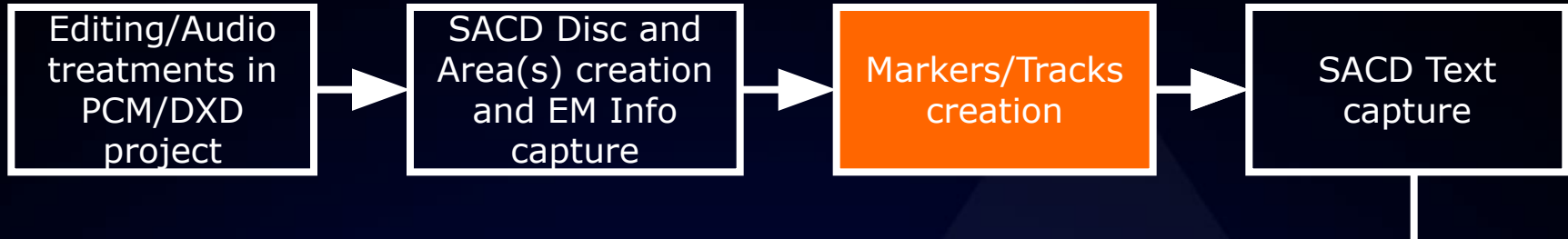
- Mastering/Authoring workflow in Pyramix 5



• **Mastering/Authoring workflow in Pyramix 5**



• **Mastering/Authoring workflow in Pyramix 5**



-Automatic Tracks creation from clips boundaries using 'CD Mark groups' or manually set markers in All Markers tab
 -Check the SACD Marker List in View>TOC Display

Track #	Index #	Time[Offset]	ISRC/Name
001	00	00:00:00[0]	
	01	00:03:00[-75]	Cinematic Repr
Length			
		02:55:41	
002	00	02:57:41[0]	
	01	02:57:41[0]	Epic
Length			
		05:25:33	
003	00	08:22:74[0]	
	01	08:24:74[0]	Instinct
Length			
		05:42:11	
004	00	14:07:10[0]	
	01	14:08:36[0]	Milan
Length			
		08:55:52	
005	00	23:04:13[0]	
	01	23:04:13[0]	Dirty Fellow R
Length			
		06:00:09	
006	00	29:04:22[0]	
	01	29:04:22[0]	Tabla Song
Length			
		02:57:19	
007	00	32:01:41[0]	
	01	32:01:41[0]	

LBM Script generation

Masters generation

Cutting Master generation and Tape export

• **Mastering/Authoring workflow in Pyramix 5**



-Define 1 to 8 Text Channels (Character Set and Language) for album and each Area
 -Enter all Disc Info Area and Track SACD Text Info.

Album	All Markers...	Track Inspector	Name
SACD Info			Click here to add a new CD Track
Table	>	General Genre	▶ Track_un_MarkerName
Index	>	Folk	▶ Track_deux_MarkerName
Character Set	>	ASCII (ISO 646)	▶ Track_trois_MarkerName
Language	>	English	▶ Track_quatre_MarkerName
Title	>	trackTitle	
Performer	>	trackPerformer	
Song Writer	>	trackSongwriter	
Composer	>	trackComposer	
Arranger	>		
Content Provider Mes...	>	trackMessage	
Extra Message	>	trackExtraMessage	
Title (Phonetic)	>	trackTitlePhonetic	
Performer (Phonetic)	>		
Song Writer (Phonetic)	>		
Composer (Phonetic)	>		
Arranger (Phonetic)	>	trackArrangerPhonetic	
Content Provider Mes...	>		

LBM Script generation

Cutting Master generation and Tape export

• Mastering/Authoring workflow in Pyramix 5



-Use Generate CD/SACD Image or Cutting Master Wizard

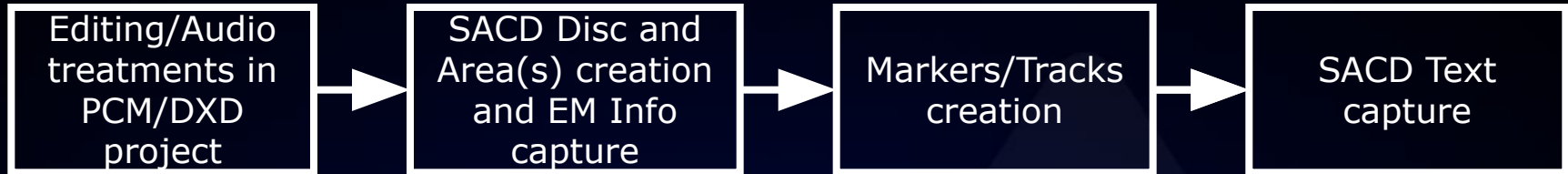
Track #	Index #	Time[Offset]	ISRC/Name
001	00	00:00:00[0]	FRFR0123400
	01	00:04:00[-150]	Track_un_Marke
	02	00:12:49[0]	Track-un_Index
	03	00:14:54[25]	Track-un_Index
	04	01:04:52[0]	Track-un_Index
Length			
		02:47:06	
002	00	02:49:16[-10]	FRFR0123401
	01	02:49:16[-10]	Track_deux_Mar
	02	03:12:40[0]	Track-deux_Ind
	03	04:20:41[0]	Track-deux_Ind
Length			
		03:04:10	
003	00	05:52:66[25]	FRFR0123402
	01	05:54:66[0]	Track_trois_Ma
Length			
		05:17:04	
004	00	11:11:74[-4]	FRFR0123403
	01	11:11:74[-4]	Track_quatre_M
	02	12:13:10[0]	Track-quatre_I
	03	17:03:09[0]	Track-quatre_I
Length			
		07:26:54	
AA	01	18:38:49	

Edited Masters generation

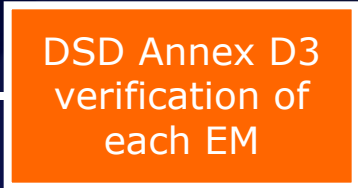
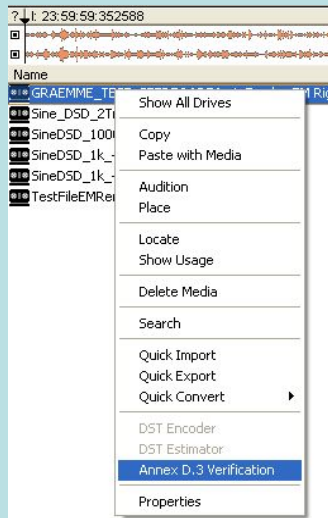
Tape export



• **Mastering/Authoring workflow in Pyramix 5**



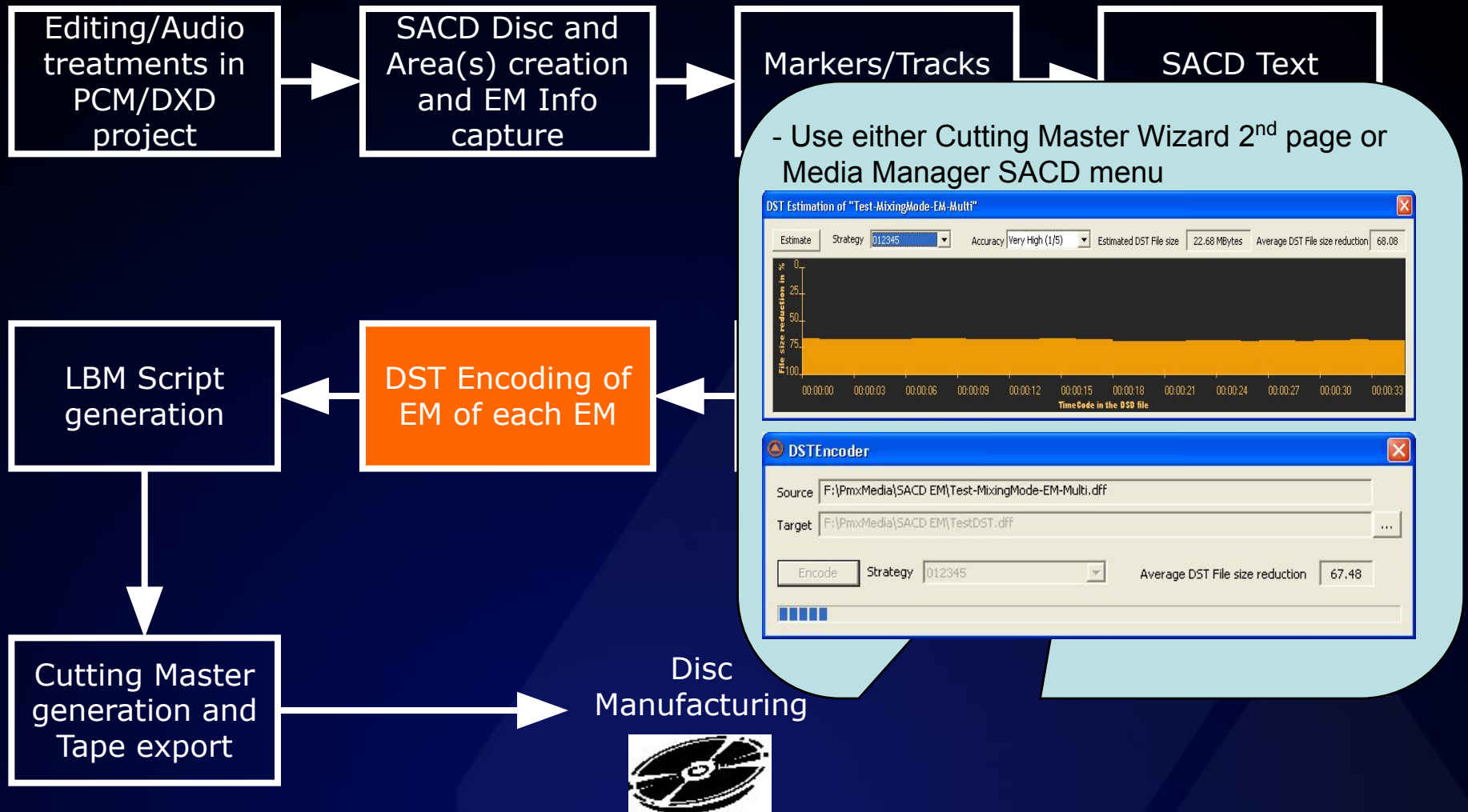
- Use either Cutting Master Wizard 2nd page or Media Manager contextual menu



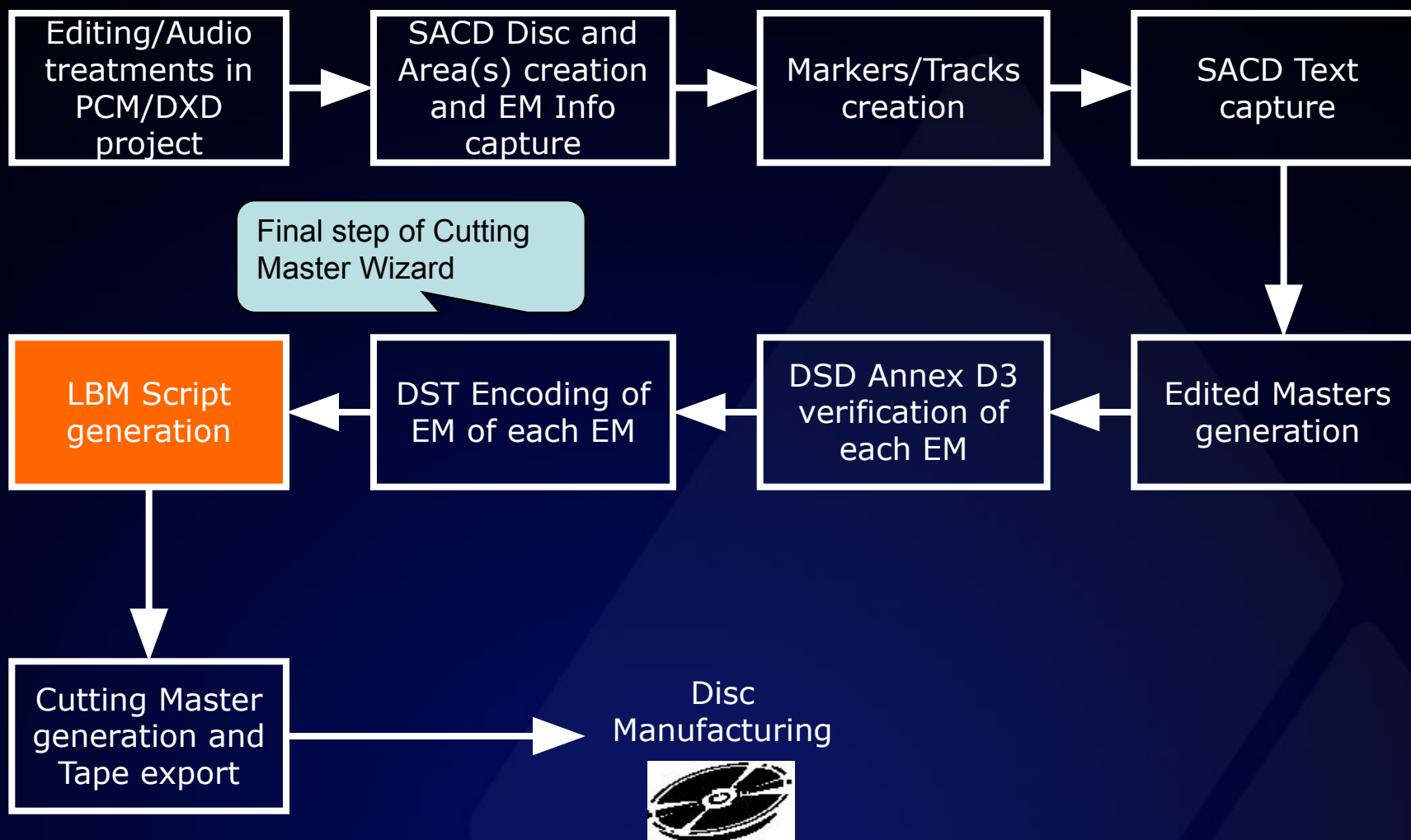
Disc manufacturing



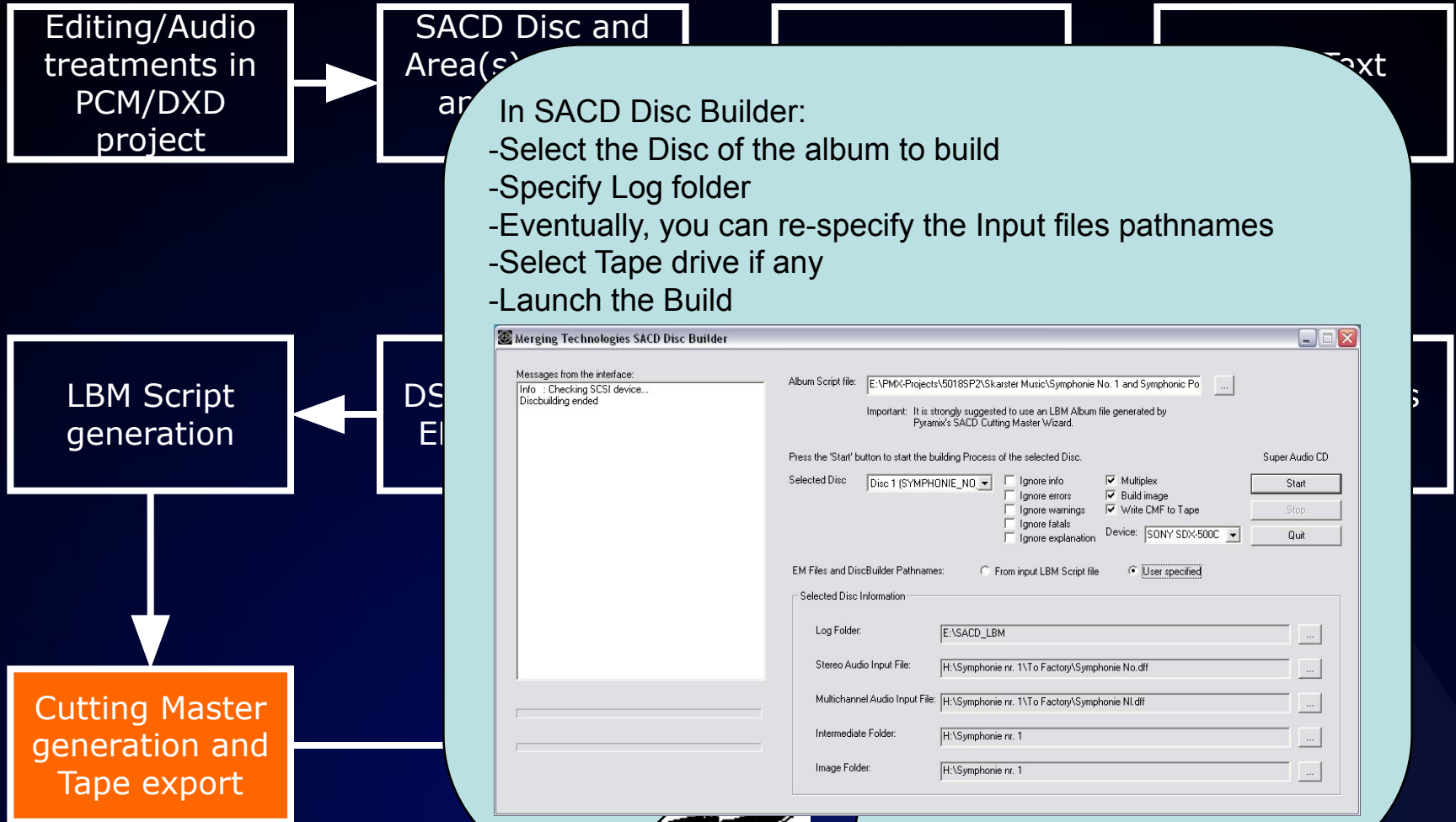
• Mastering/Authoring workflow in Pyramix 5



- Mastering/Authoring workflow in Pyramix 5



• Mastering/Authoring workflow in Pyramix 5



- Features and Software options**

	HSR	DSD-SACD Support	SACD Authoring & Disc Builder
DSD/DXD Recording	Required	Required	-
DSD/DXD Editing	Required	Required	-
SACD Album Creation and SACD Text input	-	Required	-
Edited Master Generation	Required	Required	-
LBM Export	-	Required	Partially Required*
LBM Import, STT Import/Export	Required	Required	-
Cutting Master Generation	-	Required	Required

*LBM Export won't export PQ timecodes nor Disc builder information without SAA key (only SACD Text)

- **Future**

- Optimized Authoring interface ergonomics for fluent authoring workflow
- SACD Text full Verifier module
- DSD Annex D4 compliancy verification for DSD files
- UCMF support
- Native Authoring solution