



# Typical Workflow Feature Film

- ◆ **Pre-Production**
  - ◆ Preparation : Planning, Gear Selection
- ◆ **Production**
  - ◆ Recording on set : Field- or Studio Recording
- ◆ **Post-Production** (some parts do run simultaneous)
  - ◆ Video Editing
  - ◆ Dialogue Editing
  - ◆ ADR (Additional Dialogue Recording)
  - ◆ Foley
  - ◆ Sound Design (Ambience, FX)
  - ◆ Mixings
- ◆ **Authoring** (creation of DCP & Analogue Film Masters)
- ◆ **Distribution**

# *Influences of Auro-3D on the Workflow ???*

# 2 Different Concepts

- ◆ **Auro-3D “FINAL MIX ONLY”**
  - ◆ Standard Workflow as for 5.1 or 7.1 Surround till Final Mix
  - ◆ Auro-3D Mix = Substantial enhancement of the mix compared with Surround Sound
- ◆ **Auro-3D in mind “FROM THE START”**
  - ◆ The final Auro-3D Mix = much better if started from the Auro-3D recordings on set
    - ◆ *Certain very typical 3D-reflections of a location are impossible to reproduce “as natural” in Post.*
  - ◆ Makes Sound Design in 3D easier
    - ◆ *The extra cost of Auro-3D recordings on set can easy be recovered -> much less work in post)*
  - ◆ Much easier to make international compatible-sounding versions

# Pre-Production

- ◆ **What “TYPE of ENVIRONMENT” will the recording be done in ?**
  - ◆ Recording in Studio : Size ?
  - ◆ Location Recordings : Outside ? Inside ? Size Inside ?
- ◆ **What “EFFECT” should be achieved ?**
  - ◆ Life-like Ambient Sound ?
  - ◆ Effects flying around and above the listener ?
  - ◆ Unusual soundscapes to emphasize the film’s atmosphere even further ?
- ◆ **Is “Auro-3D recording on set” necessary to achieve this effect ?**
  - ◆ Does the real ambience of the venue need to be captured ?
  - ◆ Can creative 3D Panning be used ? Reverbs ?
  - ◆ What kind of sound-libraries are available ? (Stereo, 5.1, Auro-3D ?)
- ◆ **Cost estimation (One time investment in equipment, Labour cost)**

# Technical Choices to be made

- ◆ **“Number & Type” of microphones**
  - ◆ Auro-3D recording has typically 8 till 12 microphones
- ◆ **“SIZE” of the microphone Rig**
  - ◆ Depends on the size of the recording venue
  - ◆ Large Rig (uncorrelated sounds in the lower frequencies)
  - ◆ Medium Rig
  - ◆ Small Rig (where lower frequencies become mono)
  - ◆ Microphone placement (fixed floor plan / Mobile > camera moves)
- ◆ **“Number” of recorded tracks ?** (Boom mic, Clip mics, Auro-3D Rig etc..)
- ◆ **“Recording System”**
  - ◆ Depending on the mobility requirements
  - ◆ Depending on number of simultaneously recorded tracks

# PRODUCTION

- ◆ **“ON SET” Recordings**
  - ◆ Boom-operator : does his normal job
  - ◆ Auro-3D operator : 1 engineer is able to hold rig + mobile rec equipment
- ◆ **“RECORDINGS” on set are especially useful for ;**
  - ◆ Ambiances, FX, Music & Scoring
  - ◆ “Acoustical Fingerprint” of the location -> impulse response !
    - ◆ *This can be imported in the Auro-Verb (and be used as an auxiliary)*
    - ◆ *Very useful for ADR as well for international releases*
  - ◆ Wild Tracks
    - ◆ *background recordings of the location*
  - ◆ Dialogue
    - ◆ *underestimated how much real and immersive suddenly dialogue sounds*

# PRODUCTION

## ◆ *Microphone Setups*







# POST - PRODUCTION

- ◆ **Microphone Setups -> Scoring (Orchestral Recordings)**
  - ◆ *Height Microphones are very often already used ... just position correctly*



# POST - PRODUCTION

- ◆ **“Dialogue” Editing**
  - ◆ Similar as normal workflow
    - ◆ *Just synchronize all recorded tracks in groups*
  - ◆ Only difference => number of tracks
    - ◆ *But enough available in Protools nowadays, does not cost extra time or money*
- ◆ **“FOLEY” recordings**
  - ◆ Soft Sounds (clothes of actors etc..)
    - ◆ *not necessary to have in Auro-3D*
  - ◆ Loud sounds :
    - ◆ *Interesting to have in Auro-3D*
    - ◆ *Or use Acoustical Fingerprint “AuroVerb”*

# POST - PRODUCTION

- ◆ **“Sound Design”**
  - ◆ Much easier & better final quality if Auro-3D recordings made on set !
  - ◆ Recorded Wild Tracks can be more useful than tracks in sync with picture
  - ◆ TOOLS (one time investment)
    - ◆ **AuroMatic Plugin**
      - ◆ *Mono, Stereo and 5.1 Sources can be upmixed to every Auro-3D Format*
    - ◆ **AuroVerb Plugin**
      - ◆ *Based on importing Acoustical Fingerprints from set*
      - ◆ *Extra parameters help to easy recreate the original acoustics*
    - ◆ **AuroPan Plugin**
      - ◆ *Allows Spatial Panning in Protools over Auro-3D bus (from 9 till 14 channel bus)*
  - ◆ COSTS (Probably the only place where some extra time is needed)

# POST - PRODUCTION

## ◆ “FINAL MIXINGS”

### ◆ IN THE BOX <-> ON CONSOLES

- ◆ Better “summing” -> better audio quality on Large Consoles like DFC (AMS-Neve)
- ◆ For Practical Reasons, sometimes in the box is more efficient (action film with complex sounds)

### ◆ PRE- MIXINGS

#### Auro-3D 11.1

#### Auro-3D 13.1

- |                |                      |                      |
|----------------|----------------------|----------------------|
| ◆ DIALOGUE     | 5.1+4                | 6.1+4                |
| ◆ FOLEY        | 5.1+4                | 6.1+4                |
| ◆ MUSIC        | 5.1+4 (VOG optional) | 5.1+4 (VOG optional) |
| ◆ SOUND DESIGN | 5.1+5+VOG            | 6.1+6+VOG            |

### ◆ FINAL MIX

- ◆ AURO-CODEC Plugin -> to be “inserted in final mix bus”
- ◆ Allow simultaneously artistic mixing of 2 main formats : Auro-3D & Surround

# AUTHORING

- ◆ **“AUTHORING”**
  - ◆ Creation of DCP
    - ◆ Picture & Auro-encoded 5.1 Tracks will be embedded
    - ◆ Unique ID code will be received for each DCP with Auro-3D track (IP Protection)
    - ◆ Loudness Parameters will be automatically put in the metadata
  - ◆ Quality Check



# DISTRIBUTION

- ◆ **“DISTRIBUTION”**
  - ◆ **“ONE SINGLE INVENTORY DISTRIBUTION”**
    - ◆ Theatres which do not have Auro-3D installed, do here just the artistic 5.1 PCM mix
    - ◆ Theatres which do have Auro-3D -> will here the original artistic Auro-3D 11.1 PCM mix
    - ◆ NO MISTAKES can be made anymore by operators !!!
    - ◆ Substantial Cost Reduction on Distribution & Authoring

# CONCLUSION : AURO-3D has ..

- ◆ Best offer about **price & quality** for “Sound in 3D”- experience
  - => Everage around 0,1% extra cost to make a Feature Film in Auro-3D !
  - => NO Quality compromise, PCM uncompressed audio Quality
- ◆ Best offer about **backwards & future compatibility** due to new technical solutions
- ◆ Easy to implement **in existing distribution formats** on the market => **1 SINGLE INVENTORY**
- ◆ Auro-3D is the **ONLY DCI COMPLIANT solution** on the market

**=> BEST TOTAL OFFER & SOLUTION FOR “3-Dimensional SOUND” EXPERIENCE !!**



# THANKS

◆ Have fun with AURO-3D !



[www.auro-3D.com](http://www.auro-3D.com)