

# MPEG-H 3D Audio - Cheat Sheet

The three audio types, profiles and levels, MPEG-H vs AC-4, and where it ships.

## Three kinds of sound in one stream

|                          |                                            |
|--------------------------|--------------------------------------------|
| <b>Channel-based</b>     | fixed mix to fixed speakers (5.1, 7.1.4)   |
| <b>Object-based</b>      | single sounds + position metadata, movable |
| <b>Scene-based (HOA)</b> | the whole recorded sound field, rotatable  |

## Main profile - five levels (max core / max speakers)

|                |                        |
|----------------|------------------------|
| <b>Level 1</b> | 8 core / 8 speakers    |
| <b>Level 2</b> | 16 core / 16 speakers  |
| <b>Level 3</b> | 32 core / 24 speakers  |
| <b>Level 4</b> | 64 core / 24 speakers  |
| <b>Level 5</b> | 128 core / 64 speakers |

*Broadcast/streaming devices use the Low Complexity or Baseline profile, not full Main.*

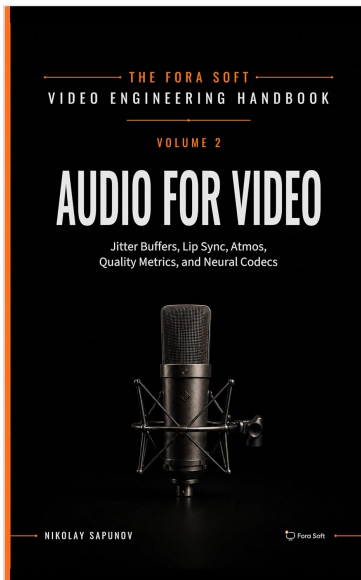
## MPEG-H 3D Audio vs Dolby AC-4

| Criterion     | MPEG-H                      | AC-4            |
|---------------|-----------------------------|-----------------|
| Body          | <b>ISO/IEC MPEG (open)</b>  | Dolby / ETSI    |
| Spec          | <b>ISO/IEC 23008-3</b>      | ETSI TS 103 190 |
| Audio types   | <b>channel+object+scene</b> | channel+object  |
| ATSC 3.0 role | <b>A/342 Part 3</b>         | A/342 Part 2    |
| Anchor market | <b>South Korea</b>          | United States   |

Deployed: sole codec in S. Korea terrestrial 4K (since 2017); Sony 360 Reality Audio; one of two ATSC 3.0 codecs.

### Pitfall: 'ATSC 3.0 audio' is NOT one codec

ATSC 3.0 standardizes two systems: MPEG-H and AC-4. A device may decode one, the other, or both. Detect which system a stream carries and route to the matching decoder; keep an AAC/Dolby fallback.



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This sheet compares the three MPEG-H sound types, its levels and AC-4 for ATSC 3.0. Volume 5 goes deeper into immersive and next-generation audio: spatial audio and Atmos, synchronisation and lip sync, quality metrics such as PESQ and POLQA, and neural codecs.

### WHAT YOU WILL FIND INSIDE

- Spatial audio, objects and Atmos rendering
- Audio quality metrics: PESQ, POLQA, ViSQOL
- Lip sync and timestamps across audio streams
- Neural audio codecs and where they fit

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