

Anticipated Questions at NAB re Formats

1. **Can the GA system (or Why doesn't the GA system) support a digital Standard Definition TV?**

Technically, the GA system can encode, transport and decode an almost arbitrary range of video formats, since it is based on the MPEG-2 standard. The real answer depends on commercial and even political considerations beyond the purview of the Grand Alliance.

2. **Why include 720-line film modes?**

They can be included with virtually no additional cost or complexity. More important, the reduced number of pixels per frame can be encoded in fewer bits per second than the progressive-scan 1080-line film modes, so that less than the full channel capacity can suffice for one HDTV program; the surplus could be used for an additional video channel or for ancillary data.

3. **Will every HDTV receiver be able to receive and display all of the announced Grand Alliance HDTV formats?**

Yes.

4. **How much additional cost will be incurred for receivers to handle multiple formats?**

About 2.5%, according to some estimates. If the receivers have a sufficiently large frame store, and processing to handle the most demanding formats, then additional formats involve relatively minor conversions. Note that marketable HDTV receivers may need to include NTSC inputs, as a practical matter, and multiple formats and attendant conversions are therefore desirable even if there were a single HDTV format.

5. **Why is interlaced scanning included?**

Tests show that both interlaced scan systems and progressive scan systems can deliver excellent pictures. Only interlaced cameras are currently available, and interlaced displays are believed by some to be equivalent in picture quality and more cost-effective for entertainment applications. For a scenario using interlaced cameras and interlaced displays, retaining that format for transmission can simplify the overall system. Note that the low-rate film modes are all sent in progressive scan formats, even if presented to the encoder using 3:2 pull-down at 60 Hz.

6. **Why include progressive scan, since first-round tests indicated better performance from the interlaced systems?**

Performance of the progressive-scan prototypes was hampered by inadequate

source material that wasted compression processing on camera noise and artifacts. Simulations and hardware experiments indicate both 720-line progressive and 1080-line interlaced 60 Hz source material can be compressed so that excellent quality can be recovered after decompression.

Including progressive scan formats meets the needs of important potential users and constituents with computer and multimedia applications.