RECOMMENDATION ITU-R BR.1290

USE OF TELEVISION DISK RECORDING IN BROADCASTERS' OPERATIONS

(Question ITU-R 242/11)

(1997)

The ITU Radiocommunication Assembly,

considering

a)   that digital television disk recording is being increasingly used for some applications in broadcasters' operations;

b)   that such technology provides operational benefits in television post-production, mid-term archival storage and on-air playout;

c)   that it presently offers reduced storage capacity when compared to magnetic tape-recording; consequently recourse is often made to heavy bit-rate reduction when digital television disk recording is used for broadcasters' applications;

d)   that the reduction factor can often be varied in a wide range to strike a balance between quality and recording time;

e)   that it has been shown that heavy bit-rate reduction must be used with great caution in television programme production, to avoid the risk that the concatenation of several such processes on the production chain may adversely affect programme picture and sound quality;

f)   that potential of improvements offered by disk based applications in television production can only be fully exploited if new interconnections between system elements will be utilized;

g)   that the software control of such systems is complex and still not adequately fail-proven,

recommends

1   that for applications where the full signal quality and post-processing quality of the processed digital studio signal must be maintained, e.g. graphics, disk systems providing transparent 4:2:2 recording and playout should be used;

2   that for applications with less stringent requirements, e.g. sports, features, documentaries etc., disk systems using intra-frame based bit-rate reduction schemes not exceeding a factor of 3 should be used;

3   that for applications in news, disk systems using intra-frame based bit-rate reduction schemes with a reduction factor not exceeding 5 or for disk systems using bit-rate reduction schemes based on a Group of Pictures (GOP) of 2 with a reduction factor not exceeding 10 should be used;

4   that the use of higher reduction factors offered by some disk systems should be confined to off-line editing and browsing applications;

5   that for time critical applications and for applications where programme content mandates a high degree of data security, the disk systems used should be configured as a RAID array;

6   that in the case of multi-user configuration of disk arrays, proper care must be taken in the system design to prevent overload of the network interconnecting the users;

7   that system design should allow piecemeal upgrading with components of other manufacturers;

8   that the overall system design incorporating disk systems in time critical application should provide adequate redundancy to cope with possible software failures.