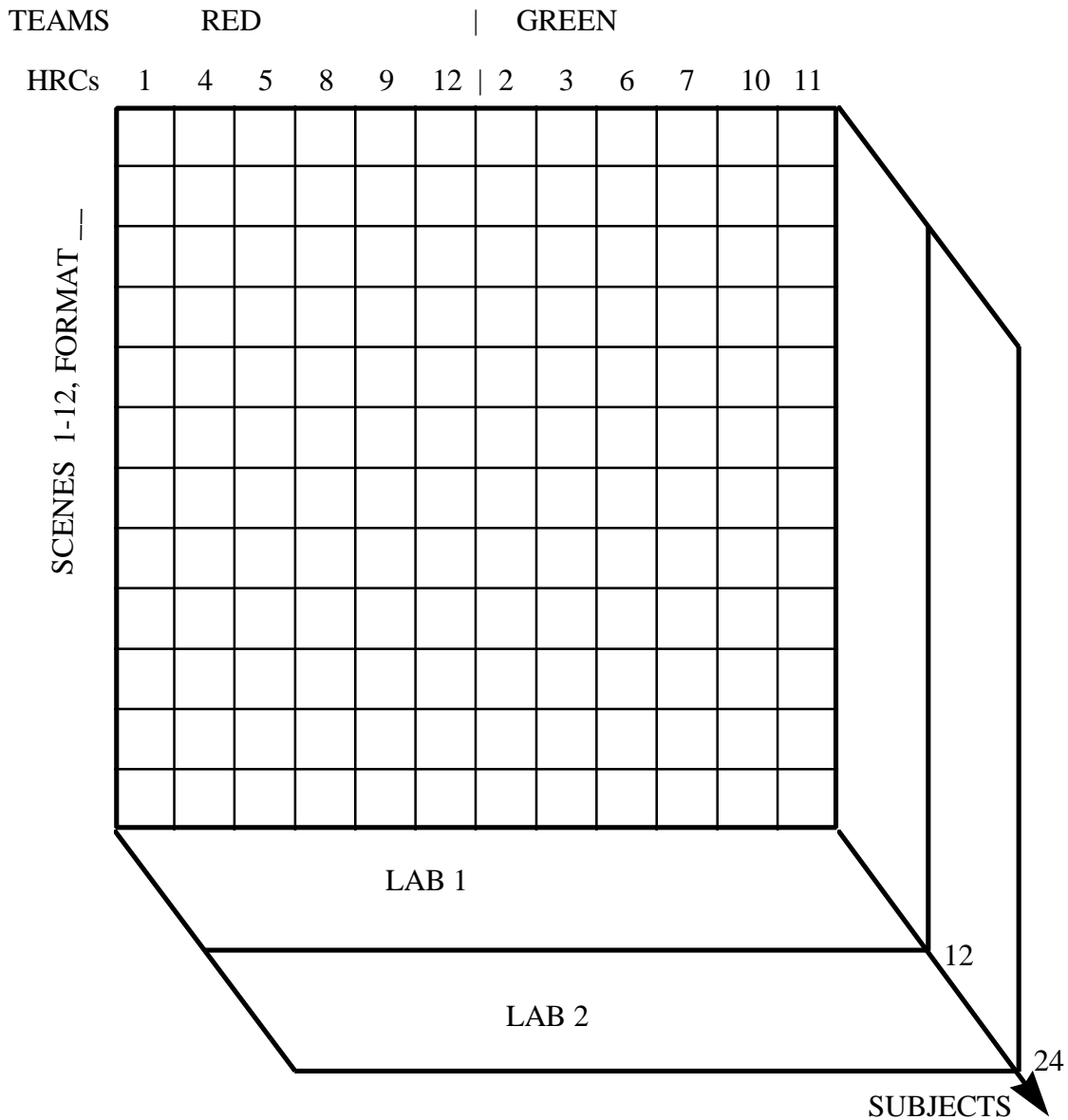


ALTERNATIVE ASSIGNMENT OF SCENES to LABS and VIEWERS -
 Multiple Team Proposal (acm 2/3/98)

The figure below is a test design for one HRC range and one video format (12x12). The viewers at each lab are divided into teams, with each team seeing all scenes combined with a subset of HRCs. The HRCs are numbered by increasing quality, and divided among the Teams. A two-team design could be implemented as follows:



(or some other fair assignment of the HRCs to teams. At this point I'm just trying to illustrate the team concept in our experiment).

Each Lab randomly assigns viewers to teams as they are enrolled for the test, supplying 12 viewers per team. Each viewer would rate 72 scene-HRC combinations. This is close to

the 88 combinations given in section 2.4 of the current subjective test plan. As far as I can tell, this doesn't violate any of the ANOVA design criteria, but I encourage others to determine if this is true.

This team-lab design could be repeated in each quadrant of the overall 24x24 HRC-Scene Matrix.

The main advantage of this approach is that any bias among ratings collected at a particular lab is distributed evenly over all combinations.

Another advantage is the wide range of combinations over which the lab-to-lab comparisons may be evaluated.

If HRCs are divided among labs instead of teams, any lab bias affects a subset of the results. Since the common conditions or HRCs used by all labs would be limited, they may not provide an adequate basis to identify or compensate for lab bias.

Administration of two different teams may be slightly more difficult for the labs, and possibly require production of more test tapes, but I believe the advantages outweigh these issues.

The teams could have overlap (e.g., common HRCs), but I'm not sure this is necessary.

The division of combinations among teams could also be along the dimension of scenes, instead of HRCs (if someone offers a reason to prefer this).

(Note that there are many ways to extend this proposal of multi-lab teams. For example, there could be 3 teams dividing the 12x12 matrix, each assigned 4 HRCs. The subjects could be supplied by 3 different labs, with 8 viewers per lab-team and 24 total viewers from each lab. This design reduces the number of combinations for each viewer to 48, and further limits the effect of single lab bias in the overall DMOS. However, some of the key features of this one are not evenly divisible by 6.)