

for three content types (documentary, drama and sports), and the MOS quality values were measured with video evaluation cycles of 2, 5, 10, and 30 minutes.

To obtain our experimental results, the video evaluation cycles appropriate for an actual IPTV viewing environment were selected. The averages for each content type and for entire videos were then calculated for analyzing the correlation of values measured by ACR methods and video evaluation cycles. This method was used to prove the validity of the selected evaluation cycle.

This experiment compared the evaluation cycle of 10 seconds, which was the standard method of ACR, with the changed evaluation cycle. It showed that the correlation between the measured MOS values was the largest in the evaluation method using a 10-minute cycle. The evaluator discomfort measurement and occurrence of experimental errors can be reduced by replacing the evaluation cycle that was found to have the greatest issues (when ACR was applied in an actual home environment) with a practical cycle that considers and applies evaluation in home environments. In addition, even if supplemented cycles were applied, the evaluation values of the entire MOS showed the same result value pattern obtained in a laboratory environment of the existing ACR. Based on this information, the high reliability of our experiment was confirmed. Therefore, an efficient and practical assessment was made in a real home environment by adhering to an actual evaluation cycle using evaluation techniques with existing ACR standards (e.g., absolute evaluation, rating evaluation)

3 Conclusion

To compensate for the evaluation cycle that is regarded as the drawback of the ACR standard, an evaluation cycle applicable to an actual evaluation environment was derived and verified. The findings showed that the correlation with the measurement result from the ACR method, which was standard in its cycle of 10 minutes, was the highest. This result implied that the result had the same reliability as measurements with a 10-second cycle, even if it was completed with a 10-minute cycle and users comfortably measured it. Finally, it was found that the drawback of the ACR could be complemented and utilized to measure QoE for video in real time.

References

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