

Developing the Final Report and How a New Broadcast Television Standard Will Be Selected

IEEE Broadcast Symposium

September 18, 1992

Robert Hopkins

DEVELOPING THE FINAL REPORT AND HOW A NEW BROADCAST TELEVISION STANDARD WILL BE SELECTED

Key Dates — ATV Broadcasting Standard

Advisory Committee on Advanced Television Service

Recommendation Process

Selection Criteria

Final Report

Formulation of Recommendation — Special Panel

Advisory Committee Recommendation

Documentation and Adoption of Standard

KEY DATES — ATV BROADCASTING STANDARD

- 1987 FCC Establishes Advisory Committee**
- 1989 Twenty-one Systems Proposed**
- 1990 FCC Announces Schedule — Decision in 1993**
- 1990 Digital**
- 1990 FCC Report and Order — Simulcast HDTV**
- 1991 Laboratory Testing Begins**
- 1992 Laboratory Testing Ends**
- 1993 Advisory Committee Recommendation and Field Test**
- 1993 FCC Decision**

ADVISORY COMMITTEE ON ADVANCED TELEVISION SERVICE

Objective: The Committee will advise the Federal Communications Commission on the facts and circumstances regarding advanced television systems for Commission consideration of the technical and public policy issues. In the event that the Commission decides that adoption of some form of advanced television is in the public interest, the Committee would also recommend policies, standards and regulations that would facilitate the orderly and timely introduction of advanced television services in the United States.

Scope of Activity: All steps necessary to assemble information, analyze information, deliberate upon appropriate policies and actions, and develop recommendations regarding the introduction of terrestrial advanced television service. Includes technical, economic, legal and regulatory issues.

Structure: Three Subcommittees, Steering Committee, and Special Panel.

ADVISORY COMMITTEE ON ADVANCED TELEVISION SERVICE

Planning Subcommittee

Objective: To plan the attributes of advanced television service in the United States.

Scope of Activity: All steps necessary to provide advice on desired features of terrestrial advanced television service.

(a) Define the desirable characteristics of advanced television service; for example, in terms such as picture quality, population served, costs to broadcasters/consumers/manufacturers, relationship to existing broadcast service, relationship to non-broadcast services.

(b) Review the technical planning factors for the existing television service and recommend planning factors for advanced television service, including consideration of factors such as coverage area, quality of service, frequency reuse criteria, receiver quality, spectrum allocations.

Structure: Seven Working Parties and two Advisory Groups.

ADVISORY COMMITTEE ON ADVANCED TELEVISION SERVICE

Systems Subcommittee

Objective: To specify the transmission/reception facilities appropriate for providing advanced television service in the United States.

Scope of Activity: All steps necessary to provide advice on the parameters of systems to provide terrestrial advanced television service.

(a) Evaluate, on technical and economic bases, advanced television systems now under development for the purpose of determining feasibility for implementation in the United States.

(b) Recommend advanced television system(s) now under development as candidate(s) for implementation, or specify the design of an appropriate system.

(c) Advise on the appropriate transmission/reception technical standards and spectrum requirements for the recommended system(s).

Structure: Four Working Parties.

ADVISORY COMMITTEE ON ADVANCED TELEVISION SERVICE Implementation Subcommittee

Objective: To establish a scheme for implementation of advanced television service in the United States.

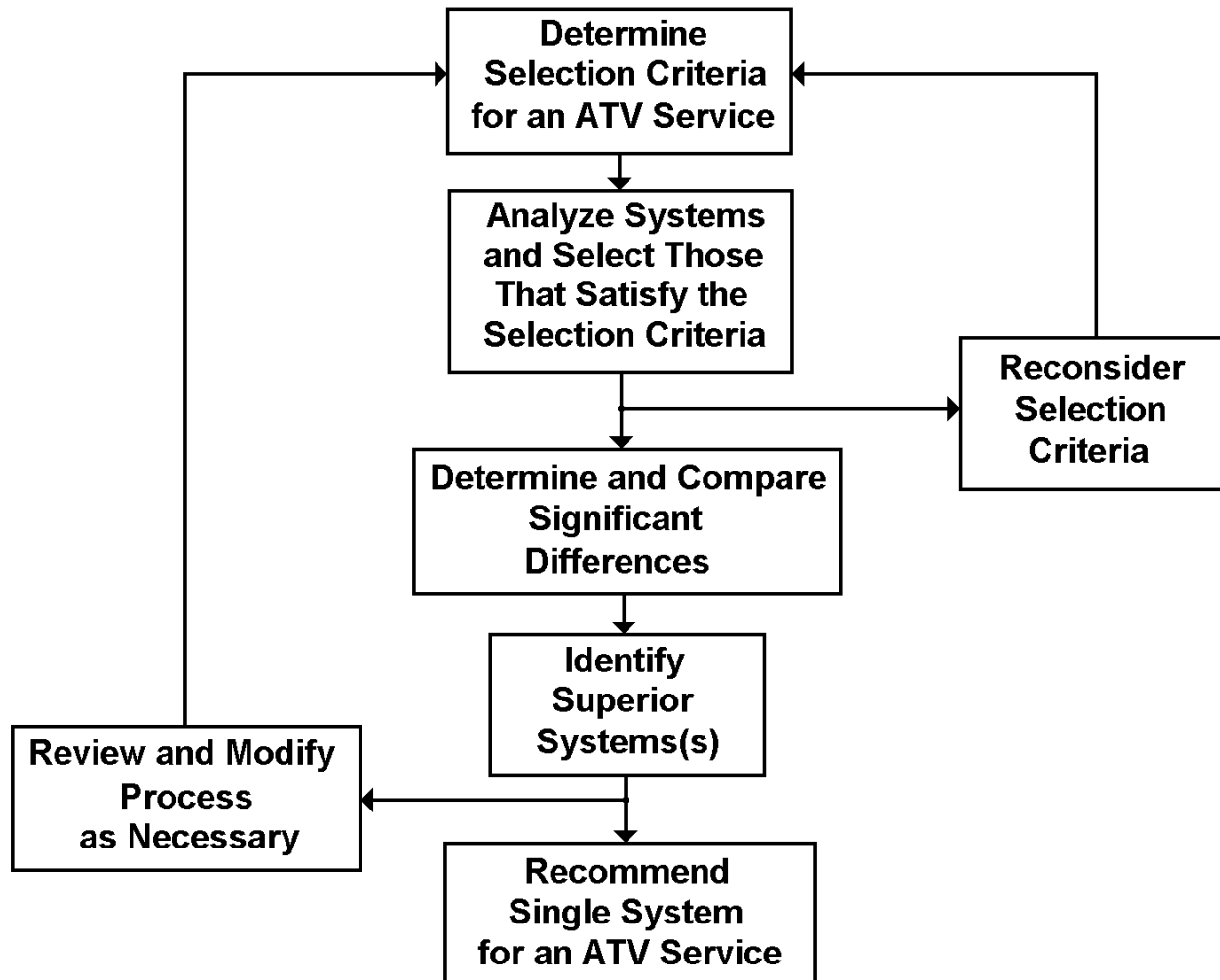
Scope of Activity: All steps necessary to provide advice on policies, regulations and standards for implementation of terrestrial advanced television service.

(a) Develop a transition scheme for implementation of advanced television service in the United States.

(b) Recommend appropriate FCC policies and regulations to oversee implementation of advanced television service and develop guidelines for industry activities.

Structure: Two Working Parties.

RECOMMENDATION PROCESS



SELECTION CRITERIA

SPECTRUM UTILIZATION

**Service Area Compared to NTSC
Accommodation Percentage**

ECONOMICS

**Cost to Broadcasters
Cost to Alternative Media
Cost to Consumers**

TECHNOLOGY

**Audio/Video Quality
Transmission Robustness
Scope of Services and Features
Extensibility
Interoperability Considerations**

SELECTION CRITERIA

Analyze Systems

Tests are conducted at ATTC, CableLabs, and ATEL using procedures developed by the Working Party on Systems Evaluation and Testing (S/WP2).

Information (data analysis) on Spectrum Utilization will be provided by the Working Party on Spectrum Utilization and Alternatives (PS/WP3).

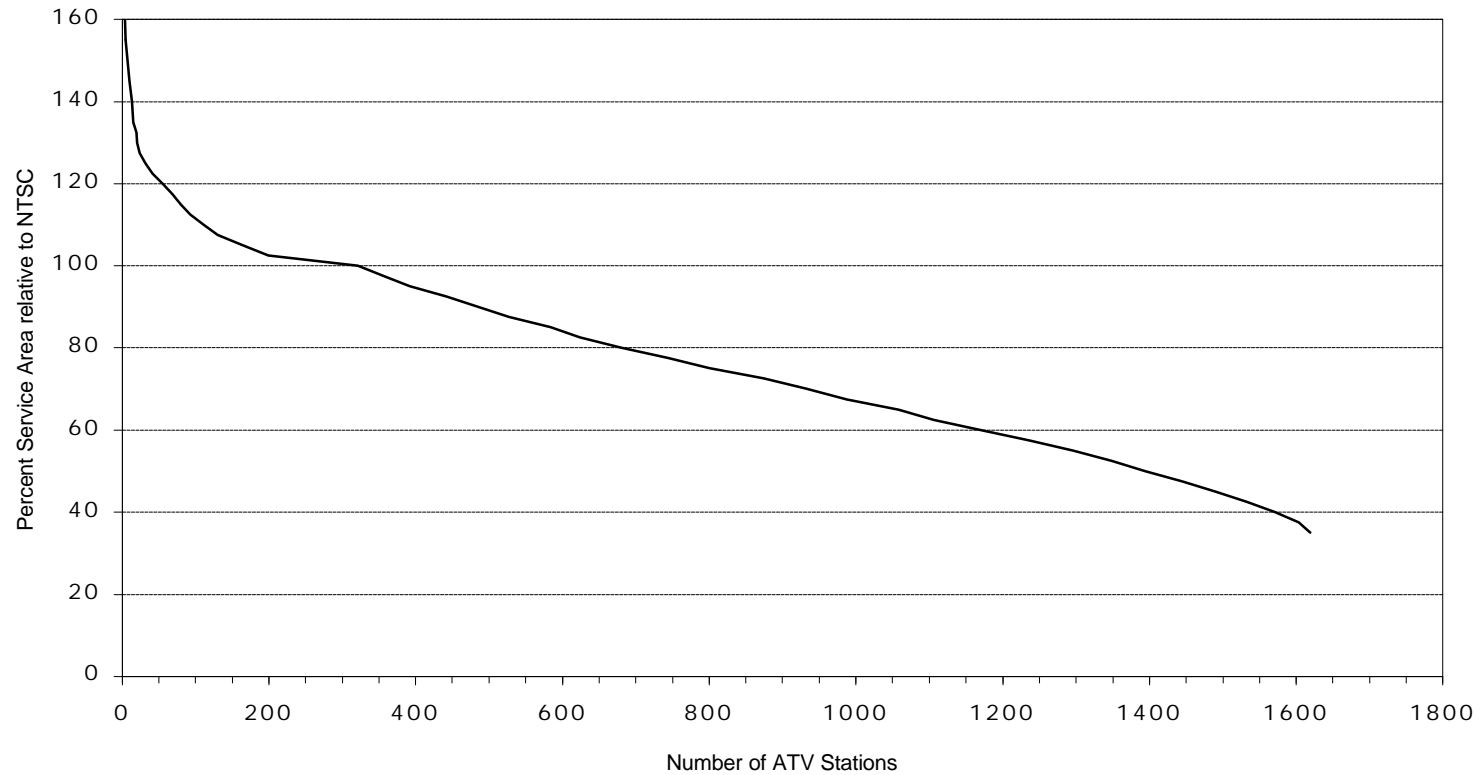
Information (data analysis) on Audio/Video Quality and Transmission Robustness will be provided by the Working Party on Systems Standard (SS/WP4).

Information on Economics will be provided by the Working Party on System Economics Assessment (SS/WP3).

Information on Scope of Services and Features, Extensibility, and Interoperability Considerations will be provided by the Working Party on Alternative Media Technology and Broadcast Interface (PS/WP4).

SELECTION CRITERIA

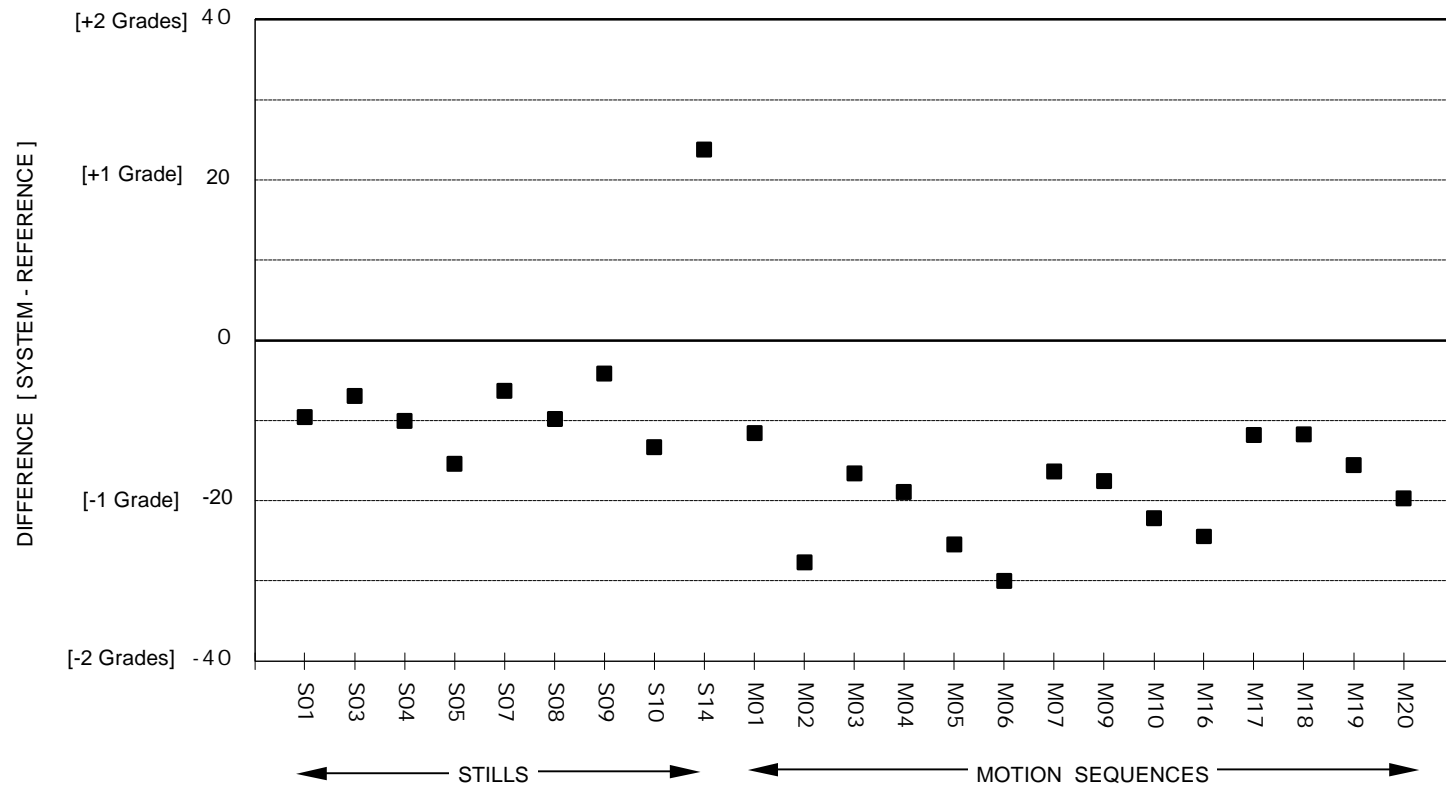
Service Area



Interference-limited service areas of ATV stations relative to interference-limited areas of NTSC stations.

SELECTION CRITERIA

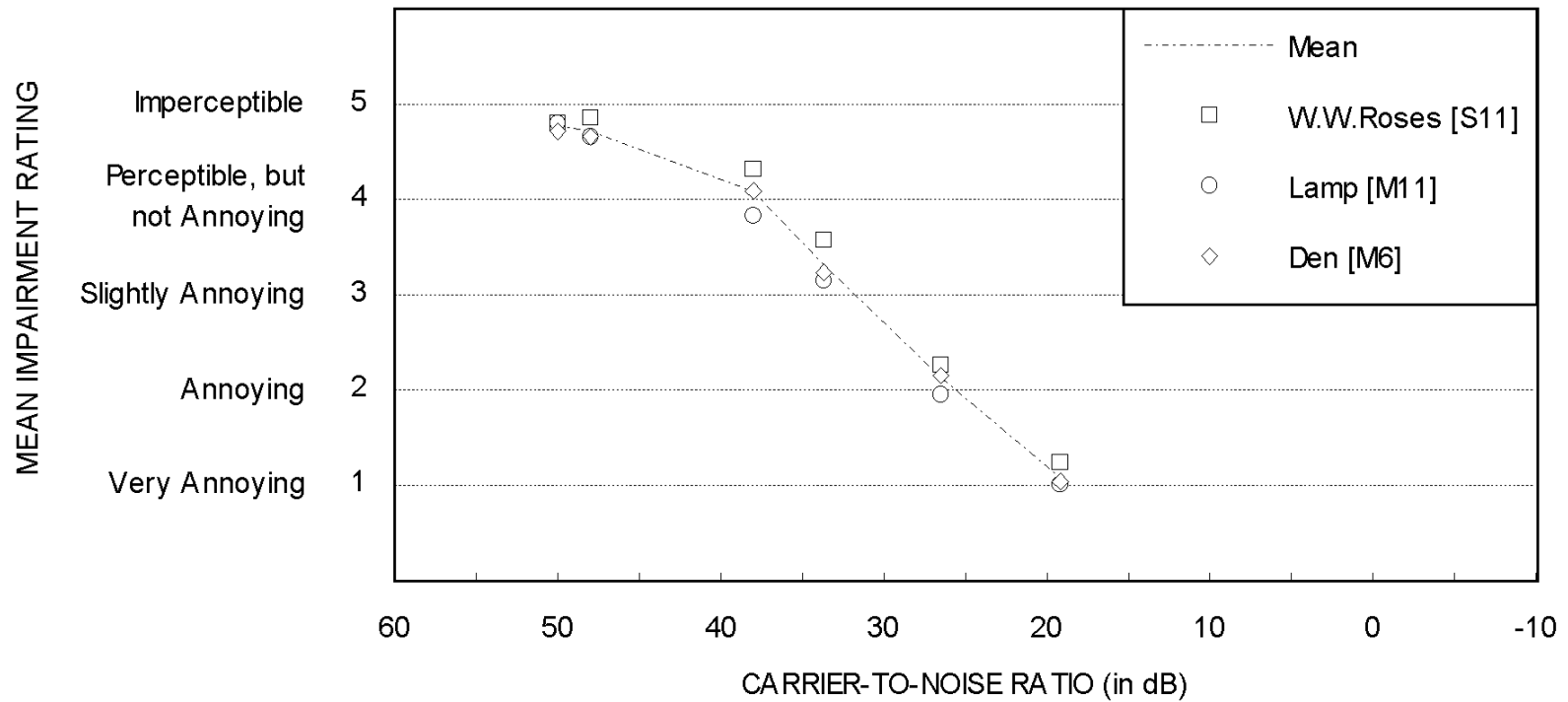
Audio/Video Quality



Average differences between quality judgements for the 1125-line studio quality reference and for the ATV system.

SELECTION CRITERIA

Transmission Robustness



The performance of the ATV system when subjected to random noise.

FINAL REPORT

An outline for the final report has been adopted by the Advisory Committee. SS/WP4 is responsible for drafting the report.

- 1. Executive Summary**
 - 2. Introduction**
 - 3. Background and History**
 - 4. Contributions from the Planning Subcommittee**
 - 5. Contributions from the Systems Subcommittee**
 - 6. Contributions from the Implementation Subcommittee**
 - 7. Selection Criteria**
 - 8. Analysis of System Data**
 - 9. Comparisons and Recommendations (Special Panel responsibility)**
 - 10. Implementation Plan**
 - 11. Future Work**
 - 12. Conclusions**
 - 13. Notes and Comment**
 - 14. Bibliography**
 - 15. Acknowledgements**
- Appendices**

FINAL REPORT

Preparation of Text

The first six Chapters will be background information. The Selection Criteria will be defined in Chapter 7. That text is complete. The systems will be analyzed in Chapter 8 according to the Selection Criteria.

As systems are tested, data will be analyzed and text written on Spectrum Utilization, Audio/Video Quality, and Transmission Robustness by PS/WP3 and SS/WP4.

During September, PS/WP4 will conduct a three day meeting to review the proposals with regard to Scope of Services and Features, Extensibility, and Interoperability Considerations. Text for the final report will be prepared following the meeting.

During September, SS/WP3 will conclude its economic analysis of the proposed systems and begin the preparation of text for the final report.

During November and December a Technical Subgroup of the Special Panel will review possible system improvements proposed by the proponents

FORMULATION OF RECOMMENDATION — SPECIAL PANEL

During February 1993 a Special Panel will meet to formulate a recommendation for the Advisory Committee.

The Special Panel is composed of Subcommittee and Working Party Chairs supplemented by other experts.

The Special Panel will compare the proposed systems and identify the best one for the recommendation.

The Special Panel will complete the final report begun by SS/WP4.

ADVISORY COMMITTEE RECOMMENDATION

The Advisory Committee will meet two weeks after the Special Panel to agree on a recommendation.

The recommendation will be forwarded to the FCC.

Field test of the recommended system will begin.

DOCUMENTATION AND ADOPTION OF STANDARD

The field test will be conducted during the spring of 1993.

The Advisory Committee will meet to approve a report on the field test.

ATSC will document the recommended system in three categories:

FCC Rules

Industry Voluntary Technical Standards

Industry Guidelines

FCC will adopt a Final Report and Order.