

MM Dkt. 87-268

ORIGINAL
FILE

SSWP2-0124
REV 25 SEP 90

RECEIVED

NOV 20 1991

Federal Communications Commission
Office of the Secretary

**ATV Test Procedures
Test Management Plan**

	Page
1. OVERVIEW	
1.1. Purpose of This Document.	1-1
1.2. Changes to This Document.	1-1
1.3. Introduction	1-1
2. PROPONENTS, SYSTEMS	
2.1. Determining Which Systems Are Tested	2-1
2.2. Scheduling Systems for Test	2-1
2.3. What Is To Be Supplied by the Proponent	2-2
2.3.1. For the Selection Process	2-2
2.3.2. For System Testing, the Proponent Will Provide	2-2
2.3.2.1. A System Which Meets the Description Below:	2-2
2.3.2.2. System Documentation	2-2
2.3.2.3. Staff	2-3
2.4. Scheduling Systems for Subjective and Field Tests	2-3
2.5. Scheduling Field Tests	2-3
3. TEST FACILITIES	
3.1. Identifying Possible Test Facilities	3-1
3.2. Facility Proposals	3-1
3.3. Laboratory Test Management Plan	3-2
3.4. Bonds and Fees for Testing	3-2
3.5. Development of Test Procedures	3-2
3.6. Eligibility to Conduct Tests	3-2
3.7. Access by Committee Members	3-3
3.8. Provisions for ABSOC Representatives	3-3
4. TESTING	
4.1. Test Documents	4-1
4.2. Test Procedure Development and Modification.	4-2

	Page
4.3. Test Descriptions	4-2
4.4. Test Contingencies	4-3
4.5. Voluntary Withdrawal of System	4-3
4.6. Verifying System Performance	4-4
4.7. Conditions for Involuntary Suspension or Termination of Tests	4-5
5. TEST DATA	
5.1. What Constitutes Test Data	5-1
5.1.1. Field Test Data	5-1
5.1.2. Restricted Test Data	5-1
5.1.3. Invalid Data	5-2
5.2. Procedures for Taking Data	5-2
5.2.1. Designated Responsible Persons	5-2
5.3. Storage of Records	5-2
5.4. Conditions of Release of Data	5-2
5.4.1. To Proponent	5-2
5.4.2. To Test Facility Management, Owners, et al.	5-2
5.4.3. To FCC Advisory Committee SS WP2, ABSOC	5-3
5.4.4. To Public	5-3

1. Overview

1.1. Purpose of This Document

This document sets forth the policies and procedures by which the Systems Subcommittee Working Party 2 will conduct tests of ATV systems. It is intended to provide guidance for working party members, other working parties, laboratories, proponents, and others; and it should be used as a common reference by all concerned.

Technical details of the tests and the procedures for conducting them are contained in the following, related documents. (See also Section 4.1, 4.3, Test Descriptions.)

1. ATV Test Procedures Manual - Subjective Video Tests (SSWP2-0390).
2. ATV Test Procedures Manual - Audio Subjective Tests (SSWP2-0533).
3. ATV Test Procedures Manual - Objective and Transmission Tests (SSWP2-0189).
4. ATV Test Procedures Manual - Cable Television Transmission Tests (SSWP2-0357).

1.2. Changes to This Document

It may be necessary to change provisions of this document as the testing process develops. Any proposed changes will be distributed to SS WP2, testing laboratories, and proponents and subjected to the same process of public review and discussion by which the original document was produced. See also Section 3.3, 3.4, Test Management Plan.

1.3. Introduction

The Systems Subcommittee Working Party 2 (SS WP2), ATV System Evaluation and Testing, is responsible for conducting objective and subjective systems tests and providing data to be used by the FCC Advisory Committee in making recommendations on advanced television services. The character of this group is as follows:

"This group shall evaluate the transmission performance of various ATV systems based on objectives developed by the Planning Subcommittee Extensive subjective and objective performance testing shall be conducted."

SS WP2 will conduct tests based on the attributes and test parameter guidelines developed by the Planning Subcommittee Working Parties 2, 4 and 6 -- covering, respectively, terrestrial broadcast objective tests, alternative media objective tests, and subjective tests appropriate to the media.

Steps necessary to carry out this mission include:

- o Obtain commitments of resources: laboratory facilities, special test equipment, technical assistance;**
- o Develop a test plan and arrange for propagation tests;**
- o Develop detailed management and test procedures for implementing Planning Subcommittee test guidelines, including rules and conditions for fair and independent testing;**
- o Arrange a test schedule for proponents and facilities;**
- o Supervise tests;**
- o Analyze data and present results to the Advisory Committee.**

As its primary input, SS WP2 began with documents produced by the Planning Subcommittee listing the system attributes and guidelines for testing them. The form of which is that of guidelines for a conceptual framework of tests to be conducted and parameters of measurements to be taken. In most cases, these tests have never been run on an ATV system, so there is no extant body of experience on which to draw in developing actual procedures and implementing the tests. Therefore, SS WP2 is developing practical test procedures in cooperation with those test facilities which will conduct the test programs. See Section 1.1, above, for identification of these documents.

2. PROPONENTS, SYSTEMS.

This section describes how proposed systems are to be selected and scheduled for testing.

2.1. Determining Which Systems Are Tested.

SS WP2 will test ATV systems which meet the following eligibility criteria.

- o The system must be certified by SS WP1 as being of sufficient technical merit and at a state of development to warrant testing. In certifying a system, SS WP1 will supply to SS WP2 the system information and data on which certification was based, including a completed attribute list.
- o The proponent must actually offer the system for testing and must agree to be tested according to the test plans and conditions described in the FCC Advisory Committee Test and Management Plans.
- o The system offered by the proponent for testing must be a complete, testable television system. It must accept video, audio and data signals and provide a modulated radio frequency (RF) output (or outputs). More information on system requirements is provided under Section 2.3, What Is To Be Supplied by the Proponent.
- o SS WP2 believes that it is in the interest of the public and the television industry that technologies employed in the system or systems recommended to the FCC be available on some reasonable terms to all who wish to use the systems or manufacture related equipment. Prior to the beginning of testing, each proponent must submit to SS WP2 a written statement of its policy concerning patents and licensing. This statement should take the form of that described in the Patent Policy of the American National Standards Institute. (See Appendix A.)

2.2. Scheduling Systems for Test.

Final arrangements for scheduling will depend on the actual availability of test facilities to conduct the tests. The Committee, relying on the resources of the industry, cannot directly control when laboratory facilities, personnel, or equipment will be available; however, it is expected that the various organizations supporting the work of the Committee will cooperate to ensure that the Committee can meet its obligation to provide timely advice and recommendations to the FCC.

The following procedure is proposed as a means of establishing a test schedule:

- o Establish a schedule of test "slots" (approximate dates within a given quarter) starting in the fourth quarter of 1990.
- o If a proponent drops out for any reason, upon reasonable notice, the other proponents scheduled to be tested in later slots may be required to move up in the test schedule. Given the many variables, it is not practical to anticipate every possibility; hence any conflicts arising from this approach will be decided by discussions among members of SS WP2, the proponents involved, and the operators of the test facilities.

2.3. What Is To Be Supplied by the Proponent

2.3.1. For the Selection Process.

In accordance with the schedule prescribed by SSWP1, the proponent shall provide to SSWP1 no later than 120 days prior to the scheduled date for system delivery to the test laboratory, as complete data as feasible to permit commencement of the detailed analysis required for the certification process. No later than 90 days prior to the scheduled date for system delivery to the test laboratory, the proponent shall provide to SSWP1 pertinent changes in previously supplied information and any additional details needed for an independent and comprehensive analysis of the proponent's system. No later than 60 days prior to the scheduled date for system delivery to the test laboratory, SSWP1 shall provide to SSWP2 a report approving or disapproving the appropriateness of proceeding with testing. The report shall include documentation in support of the conclusion reached and shall provide recommendations as to whether any weaknesses particular to the system need to be explored.

Some proponents may request retesting, either because they have corrected a deficiency in their system or because new features have been introduced. In such instances, the proponent will then submit the system to SS WP1 for further consideration and possible retesting, according to the procedures of that Working Party and the availability of time and laboratory resources.

2.3.2. For System Testing, the Proponent Will Provide.

2.3.2.1. A system which meets the description below:

The video, sync, audio and any ancillary signals will be encoded in such a form that they can be transmitted through an RF channel of the kind for which the system is intended. The test channel shall consist of an actual modulator driving an actual demodulator, with the spectrum of the transmitted signal (or signals) corresponding to the specifications of the systems. Each proponent shall provide an encoder and a decoder that can form to the interface specifications described in the test procedure documents.

The system must be capable of delivering a segment of continuous, non-repetitive program material over a test transmission path. No signal processing will be permitted off-line or off-site.

The proponent will be responsible for supplying any special equipment such as standards converter, modulator, or demodulator, which is unique to the testing of that proponent's system.

2.3.2.2. System documentation.

Documentation of the system shall consist of (at minimum) a block diagram and a written system description, including the most recent version of information supplied to SS WP1, updated as appropriate. This may consist of the documentation supplied to SS WP1 along with specific descriptions of any modifications which have been made to the system since its analysis by SS WP1.

All system information and documentation submitted to SS WP2 is part of the public record of the Working Party. Members of SS WP2 will not be party to any non-disclosure agreements as part of ATV system testing for the FCC Advisory Committee.

2.3.2.3. Staff

The proponent will be responsible for supplying all technical and other personnel needed to deliver the system to the test facility, setup, operate, and maintain it. This will include a person authorized to certify in writing that the system is ready for testing before the beginning of testing and at any other time during testing when such authorization is requested.

2.4. Scheduling Systems for Subjective and Field Tests.

The basic picture and sound quality and the effects of impairments on subjective test material will be evaluated after completion of objective tests on the system. Subjective tests will be conducted as soon as practical after completion of objective tests.

Objective tests will be conducted in the designated laboratory and the subjective materials for quality and interference tests will be transmitted through the system under test. The test facility technical project director will review ranging and objective data (See Section 4.1, 4.3, Test Descriptions.) with the proponent. The proponent will then have the choice of continuing with the subjective tests or withdrawing from the testing process. (See Section 4.5, Voluntary Withdrawal of System.) The proponent shall notify the test facility technical project directors and SS WP2 of its decision in writing.

If the proponent elects to proceed, subjective (impairment) tests will be conducted and all data will be released, as provided in Section 5. Once subjective testing begins, the proponent will still be permitted to withdraw; however, all test data collected thus far would be released.

2.5. Scheduling Field Tests.

Field tests will follow evaluation of objective and subjective test results and selection of systems for field testing. SSWP2 does not expect that every system tested in the laboratory will be tested in the field. Proponents must supply the number of encoders and receivers determined to be necessary for field testing. Details of field tests will be developed by SSWP2.

3. TEST FACILITIES.

Neither the FCC nor its Advisory Committee has the resources to conduct tests of proposed ATV systems. They must rely on the television industry to provide personnel, equipment, facilities, and software. Laboratories which conduct tests may impose reasonable fees for testing systems.

3.1. Identifying Possible Test Facilities.

Potentially, the FCC Advisory Committee has available to it the vast resources of the television industry in the United States. In addition, discussion on resource sharing with Canadian interests are underway, giving the possibility of further broadening the resource base.

It is expected that much of the testing will be done by two test facilities established by the television industry, the Advanced Television Test Center, sponsored by terrestrial broadcasters, and Cable Labs, sponsored by cable system operators, and by the ABSTC of Canada.

3.2. Facility Proposals.

All facilities which have indicated an interest in supporting and participating in the testing process for the FCC Advisory Committee will be asked to submit proposals based on the test management plan developed by SS WP2 and the objective and subjective test plans developed by PSWP2, -4, and -6. All interested parties are encouraged to cooperate and pool resources to the maximum extent possible.

The interests of all concerned, including the public, the media and the proponents, can best be served if all laboratory testing of any one type could be done at one location. This would keep the effort, costs and time to a minimum, compared with having to move systems or test equipment or both from one location to another. SS WP2 is concerned about comparability of test results obtained at different facilities.

In submitting proposals, test facilities should describe in detail the resources they will devote to the effort. These proposals should take the form of Test Management Plans and should include:

- o Technical and support staff,
- o Test and measurement equipment, and
- o Facilities for proponent's equipment, including space, power and air conditioning, security, fire control, etc.

In submitting proposals, test facilities should also describe in detail the laboratory procedures for the following.

- o Applying to be tested, the data to be supplied by the proponent and other terms and conditions;
- o System monitoring to avoid changes, intentional and unintentional;
- o Laboratory handling and protection of data.

3.3. Laboratory Test Management Plan.

When the laboratories and SS WP2 have agreed on the contents, terms, and conditions set forth in the Test Management Plans, the laboratories are expected to adhere carefully to them. The laboratories will also make copies of their plans available to all proponents and other interested parties.

Since much of the testing process is new or unique, SS WP2 recognizes that changes may be needed in laboratory plans (See also Section 1.2, Changes to This Document). If a laboratory wishes to change its Plan, it must notify the chairman of SS WP2 (or designee) who will determine the best course of action to respond in a timely manner. This need not apply to minor changes in such areas as administrative procedures, but SS WP2 must be notified, in any event.

It is possible, that while conducting tests of a proponent system, a laboratory may observe characteristics of the system which leads it to believe that additional tests, not covered by the test procedures or system specific tests, should be conducted. In this event, the laboratory shall contact the chairman of SS WP2 who will determine the best course of action.

In addition to notifying SS WP2 of a proposed change in its Test Management Plans, the laboratory shall, at the same time, notify all proponents certified for testing.

3.4. Bonds and Fees for Testing.

SS WP2 recognizes that performing the tests described here and detailed in the test procedures will involve considerable expense. Not only will personnel, space, and equipment be tied up for extended periods of time, but specialized equipment and software will have to be developed just for these tests as well. The laboratories may, therefore, impose nominal fees for testing and related services.

Fees may be required in advance of testing, either as a payment or a bond, to reserve a specific time slot. The laboratory may require forfeiture of all or part of the fee in the event that a proponent does not deliver a system within the scheduled time slot.

Proposed fees, terms, and conditions should be included with the Test Management Plans, described above.

3.5. Development of Test Procedures.

Proposals should address how the facility will develop detailed test procedures, based on test guidelines provided by the Planning Subcommittee. A full set of procedures must be developed for each set of tests, describing in detail what equipment is used, how it is connected, what data are taken, and how the data are recorded.

3.6. Eligibility to Conduct Tests.

To conduct tests as part of the FCC Advisory Committee process, a test facility must meet the following criteria.

- o SS WP2 must be satisfied that the test facility is able to conduct tests in a fair and neutral manner.
- o The facility must agree in writing to conduct the tests according to the test plans and conditions described in the FCC Advisory Committee Test and Management Plans or notify the FCC Advisory Committee if this cannot be done. Release of data according to conditions agreed upon by the facility and the FCC Advisory Committee is essential.

3.7. Access by Committee Members.

The facility must also agree to permit representatives of SS WP2, the ABSOC, and the FCC to observe tests; however, the test facility will observe reasonable precautions to prevent premature disclosure of test data and to protect both its own test equipment and the proponent's equipment from accidental or intentional damage or misadjustment by observers. It is recognized that the test facility may impose limits on observers due to space, safety or other practical considerations and may request anyone whose actions interfere with its work to leave the site.

3.8. Provisions for ABSOC Representatives.

The FCC Advisory Committee is cooperating with the Advanced Broadcast Systems of Canada (ABSOC) in their mutual efforts to recommend ATV systems to their respective regulatory bodies. Both groups have stated that it is important to arrive at a single system which will serve both countries.

SS WP2 requests that U.S. test facilities cooperate with their Canadian counterparts. Canadian technical personnel should be permitted to work with test facility staff in conducting ATV system tests. These designated technical personnel should be considered part of the test facility staff with regard to the policies and procedures governing security and data handling.

Test data will be released to the ABSOC on the same basis as it will be released to the FCC Advisory Committee.

If several test facilities make separate and overlapping proposals, members of SS WP2 will endeavor to arrange cooperation between them. There is concern that if two or more laboratories were conducting nominally the same tests on different systems, the test results may not permit a fair comparison of the systems. SS WP2 feels that all system tests related to a medium must be conducted by the same laboratory. The exception would be subjective testing. If the process of digitally recording system outputs, described elsewhere, is feasible, there appears to be no reason why viewing and listening tests cannot be conducted in locations different from where objective tests are conducted and the system output tapes recorded.

4. TESTING.

The Systems Subcommittee has stated that its purpose is to recommend the best ATV delivery system for the U.S. It may be that no single proposed system will meet all the needs of the public, broadcasters and other media, other users of the RF spectrum, and the government. Therefore, the Systems Subcommittee has stated that the objective of its testing program is not necessarily to provide data on which to base a recommendation of one system out of all those proposed. The overall testing process should facilitate combining the best features of several systems.

The charter of SS WP2 calls for "extensive subjective and objective testing." In general, plans call for proposed systems to be tested initially in the laboratory. This is intended to permit gathering of uniform data under controlled conditions. Subsequently, systems will be tested in the field and through actual cable systems, satellite and microwave relays, to assess performance in real distribution environments and to validate the results of laboratory testing.

4.1. Test Documents.

Test parameter plans have been developed by the Planning Subcommittee to serve as guidelines for detailed test procedures developed by the Systems Subcommittee Working Party 2, working with test laboratories. Planning Subcommittee documents are as follows:

- o Objective tests and tests for terrestrial broadcast performance of ATV systems have been designed by the Planning Subcommittee Working Party 2, ATV Test Objectives, and are contained in that group's Report, dated 4/21/88, with later amendments. The version currently being used by SS WP2 is that attached to the Advisory Committee's Second Interim Report (4/26/89).
- o Tests for CATV, satellite and other media performance of ATV systems have been designed by the Planning Subcommittee Working Party 4, Alternative Media and Broadcast Interface and are contained in that group's report attached to the Advisory Committee's Second Interim Report (4/26/89).
- o Subjective tests of system quality and interference and impairment performance have been designed by Planning Subcommittee Working Party 6, Subjective Testing and are contained in that group's documents attached to the Advisory Committee's Second Interim Report (4/26/89).

Systems Subcommittee documents to be used in conducting tests are as follows:

- o **ATV Test Procedures Manual - Video Subjective Tests (Doc. SSWP2-0390).** This document contains detailed procedures for conducting subjective assessments of ATV system picture quality and the effects of the interferences experienced in transmission channels. Tests will be conducted using digital tape recordings of system outputs.

- o **ATV Test Procedures Manual - Audio Subjective Tests (SSWP2- 0533).** This document contains detailed procedures for conducting subjective assessments of ATV system sound quality and the effects of the interferences experienced in transmission channels. Tests will be conducted using digital tape recordings of system outputs.
- o **ATV Test Procedures Manual - Objective and Transmission Tests (SSWP2-0189).** This document contains detailed procedures for conducting objective tests and transmission tests. The transmission tests will consist of preparing digital tape recordings of system outputs for subjective tests.
- o **ATV Test Procedures Manual - Cable Television Transmission Tests (SSWP2-0357).** This document contains detailed procedures for conducting the assessments of key technical and operating parameters required for planning and implementation of ATV systems in the existing cable television system environment.

4.2. Test Procedure Development and Modification.

Some of the tests described in the Test Procedures are unusual if not unique. The whole nature and scale of the testing process is much greater and more difficult than any television testing conducted heretofore. This is required by the nature of the new approaches to television embodied in the many different proponents now before the FCC Advisory Committee. Others may yet appear.

The test procedures specify such details as what equipment will be used and provide step-by-step procedures on how it will be connected, what data will be taken, how the data will be recorded and stored, and how it will be reduced and analyzed. These plans are reviewed by SS WP2 to ensure that implementation will result in gathering the data needed in a fair, accurate, and timely manner. Ideally, test procedures will not be changed once SS WP2 and the laboratories have agreed on them. These procedures were developed before many of the technical details of proposed systems were available, and it may be necessary to develop alternate approaches in some testing situations. The Test Procedures describe how this will be done.

4.3. Test Descriptions.

The FCC Advisory Committee identified over 180 system attributes that could be tested or checked in some way. This list was used to develop a set of recommended tests to be performed on proposed systems. The tests are categorized as follows:

RANGING TESTS.

Because of the widely different technologies employed, it is expected that each system may perform differently under the same impairment condition. It will be necessary to conduct certain preliminary tests on each system to find the approximate levels at which a given impairment becomes visible and at which the system fails. These levels will establish the range over which the system is tested for the given impairment and the value of the incremental steps by which the impairment is varied.

OBJECTIVE TESTS.

Objective tests are described in the Test Procedures Plan of this Manual. These tests will, in general, yield specific measurements of system parametric values, including, but not limited to, resolution, noise, channel crosstalk, and others.

SUBJECTIVE TESTS.

Subjective tests are described in the Test Procedures Plan of this Manual. These tests will include evaluation of both Interference and Quality.

While the system is set up in the laboratory for objective testing, the subjective test signals will be transmitted through the system under test and subjected to interferences. Digital video tape recordings will be made of the output signals. These recordings will be edited in an appropriate fashion and sent to the laboratory designated to conduct subjective testing.

SYSTEM SPECIFIC TESTS.

While it is desirable to maintain comprehensive and uniform test procedures for all systems, system specific tests may be conducted. These tests shall be based upon analysis of the system by SSWP1, which if appropriate, will identify specific areas of concern not addressed by the test plans. SS/WP-2 will produce detailed test procedures to evaluate each identified area of concern.

FIELD TESTS.

Field tests are intended to confirm laboratory testing and demonstrate the selected system in actual use.

Field tests will be done under actual conditions of terrestrial broadcast and cable television system carriage. Signals of a proposed system will be broadcast and carried on cable systems in one or more locations, to be determined later, and measurements will be taken at various receiving locations.

4.4. Test Contingencies.

SS WP2 recognizes that a proponent may be delayed in delivering a system for testing or may fail to deliver a system during the allotted period. Since the details of, and constraints on, scheduling will depend on the individual laboratories responsible for testing as well as cooperative arrangements between them, SS WP2 and the laboratories shall determine appropriate procedures for handling such contingencies.

Laboratory recommendations may include posting of bonds, as noted in 3.3, 3.4, Bonds and Fees for Testing.

4.5. Voluntary Withdrawal of System.

The ATV system testing process is entirely voluntary. No one may be required to submit a system to the FCC Advisory Committee for testing or to keep it in the testing process once that process has started. It is possible that some systems may not perform as expected when they are connected to the laboratory test system and tests are begun. Accordingly, a system may be withdrawn from testing by the

proponent at any time. To allow proponents to measure their system's performance, following completion of the ranging tests, the test facility's project technical director will review the results with the proponent's designated representative. If the system under test does not perform at a level consistent with the expectations of the proponent, the proponent may request to withdraw its system at that time.

A request for such a voluntary withdrawal should be submitted in writing to each test facility's project technical director and SS WP2.

When a proponent voluntarily withdraws a system from testing, he may return the system for testing during the initial test cycle only if space becomes available.

4.6. Verifying System Performance.

When testing has begun, the system under test shall not be modified. The proponent may repair and adjust the system only to the extent necessary to maintain its performance at the level equal to that at the start of testing.

The following definitions and rules apply.

- o **Initial Certification of Performance.** When a proponent has delivered its system to the test center and has setup the system, the proponent shall certify to the test center project technical director in writing that its system is performing properly and ready to be tested.
- o **Modification.** After certifying that the system is ready, the proponent shall not modify the system in any manner.
- o **Interruption of Testing.** The proponent shall verify that its system is operating properly after any interruption of testing for any reason. Interruptions may include overnight and weekend shut downs, shut downs for maintenance, power outages, or other interruptions. After any such interruption, the proponent shall certify in writing that its system is operating as it was when initially certified after delivery to the test facility.
- o **Certification at the Conclusion of Testing.** The proponent shall certify, prior to shutting down the system at the end of a day or for any other reason, that its system is performing as when initially certified.
- o **Adjustment and Repair.** After initial certification or certification after interruption, the proponent shall make no adjustments to the system other than those necessary to maintain operation at the same level as when the system was originally certified as ready. Any adjustment or repair shall be considered an interruption.
- o **Verification Tests.** The test facility is expected to conduct any and all tests considered necessary to verify that the system under test is performing as it was when initially certified by the proponent.
- o The proponent may request that the test facility conduct tests to verify that its system is operating as it was when initially certified by the proponent.

- o If the system is determined not to be performing as when initially certified, the test facility project technical director shall designate as invalid data (see section 5.1.3, Invalid Data), all data taken between that time and the next most recent certification.
- o The test facility may interrupt testing at any time to conduct any and all tests necessary to verify performance of its equipment and to perform such adjustments and repairs as it considers necessary to restore its system to proper operation. If the test facility technical project director determines that test facility equipment was not operating properly, he may designate as Invalid Data (See Section V.A.4, Invalid Data), all data taken between that time and the next most recent certification.

4.7. Conditions for Involuntary Suspension or Termination of Tests.

SS WP2 recognizes that system testing may be suspended or terminated by the test facility due to circumstances beyond the control of the test facility, SS WP2 or the proponents. Tests or operations may be suspended or terminated due to fire or other threatened or actual damage to the building or facilities, including long term power failure, heating or cooling problems, or other events or conditions which cannot be anticipated. In such event, SS WP2 will make every effort to ensure that testing begins again as soon as possible at the same or another facility.

5 TEST DATA.

The end product of all testing work is the ATV system data. This section describes what is considered data and how data are handled. SS WP2 recognizes that laboratories which conduct the tests will own the data; however, release of data according to conditions set forth here and agreed upon by the test facility and the FCC Advisory Committee is essential. Please see Section 3.6, Eligibility to Conduct Tests.

5.1. What Constitutes Test Data.

The term "test data" is defined as all test results in any form, intermediate and final, whether written or recorded on any medium. Test data include, but are not limited to, the following:

- o Numerical measurements or readings taken from test instruments or other measuring devices;
- o Written or spoken measurements or observations by technical personnel or test subjects;
- o Tape recordings, motion picture films or still photographs of instrument readings, or spoken observations;
- o Tape recordings, motion picture films or still photographs of monitor screen images, oscilloscope traces of test signals, test pictures, or test sounds; and
- o Tapes, discs, or printouts of measurements recorded by computers, recording oscilloscopes, or any other measuring or recording instruments.

Data taken during tests conducted only to verify system performance (See Section 4.6, Verifying system performance) should not be considered "test data."

5.1.1. Field Test Data.

Field tests will be planned by SS/WP-2. Details for handling field test data will depend on the nature and extent of these tests.

5.1.2. Restricted Test Data.

Any test data which have not been released under the conditions specified in this Manual are considered Restricted Test Data.

Should questions arise concerning test data which would otherwise be released, those data are also considered to be restricted. The test facility should restrict the release of test data until such questions have been affirmatively resolved. If the questions are resolved by determining that the test data are invalid, they shall be dealt with in accordance with the procedures described in the next subsection.

5.1.3. Invalid Data.

Any test data which are determined to contain errors for which no adequate correction can be made are to be considered Invalid Data. Also, data which have been falsified are considered to be Invalid Data.

5.2. Procedures for Taking Data.

Test data will be taken according to the procedures and specifications of the detailed test procedures. The facility's technical project director(s) will review these procedures and specifications with the proponent's designated representative prior to the start of testing. Proponent's staff must cooperate with test facility staff to ensure accuracy and validity of test data. Any deviation may invalidate the data.

5.2.1. Designated Responsible Persons.

The test facility's technical project director will designate the employee(s) responsible for collecting and recording all test data. Representatives of both the test facility and the proponent will certify data on a schedule to be agreed upon. All data will be accompanied by a chain of custody record which must be signed by all persons handling such data.

5.3. Storage of Records.

All original records, including raw data, intermediate results, and final results, in any form, will be stored by the test facility for a time period that will be specified by the test facility, taking into account the completion of the Advisory Committee process and pertinent FCC proceedings, including a possible standard setting process.

5.4. Conditions of Release of Data.

Only Complete Test Data as defined in Section 5.1.1, above, will be released to the government, the FCC Advisory Committee, the ABSOC, and the public.

5.4.1. To Proponent.

Test data will be released to the proponent immediately upon successful completion of objective tests and transmission of subjective test materials through the system under test.

5.4.2. To Test Facility Management, Owners, et al.

Management and owners of test facilities conducting tests for the FCC Advisory Committee must assure that they will respect the confidentiality of all data and records related to these tests. Data and results which have not been released to the Committee and public will not be accessible to anyone connected with the test facility except those staff members identified as part of the testing process.

5.4.3. To FCC Advisory Committee SS WP2, ABSOC.

Test data taken during tests conducted in support of the work of the FCC Advisory Committee on Advanced Television Services will be released to the Committee and to the Commission and the ABSOC under the following conditions:

- o The test facility technical project director(s) will perform such reductions and analyses as needed to produce objective or subjective test results which can be used by the FCC Advisory Committee, SS WP2, and the ABSOC.**
- o The test facility technical project director(s) will then review these data with the proponent. In the event the proponent disagrees with any results, the proponent will be given the opportunity to prepare comments which will be included with the data.**
- o The data and proponent comments, if any, will be released.**
- o If a proponent withdraws a system prior to the beginning of subjective rating tests, no data will be released. If a proponent withdraws a system after subjective rating tests have started, all test data gathered up to that point will be released.**
- o The chairman of The Systems Subcommittee may release test data, prior to the completion of tests, to experts involved in FCC Advisory Committee work. Data will be released for the sole purpose of technical analysis relating to the work of the Advisory Committee.**
- o Test data must be analyzed, reviewed, and released in a timely manner.**

5.4.4. To Public.

The FCC Advisory Committee and its working parties, the FCC and the ABSOC are public bodies. Any information released to them will be in the public domain. Accordingly, at the time it releases test data for these organizations, the test facility may release the data to the public.

APPENDIX A

Test Management Plan

D1. Inclusion of Patents in American National Standards

There is no objection in principle to drafting a proposed American National Standard in terms that include the use of a patented item, if it is considered that technical reasons justify this approach.

If the Institute receives a notice that a proposed American National Standard may require the use of a patented invention, the procedures in Sections D2 through D5 shall be followed.

D2. Statement from Patent Holder

Prior to approval of such a proposed American National Standard, the Institute shall receive from the patent holder (in a form approved by the Institute) either: assurance in the form of a general disclaimer to the effect that the patentee does not hold and does not anticipate holding any invention whose use would be required for compliance with the proposed American National Standard or assurance that:

(1) A license will be made available without compensation to applicants desiring to utilize the license for the purpose of implementing the standard, or

(2) A license will be made available to applicants under reasonable terms and conditions that are demonstrably free of any unfair discrimination

The terms and conditions of any license shall be submitted to ANSI for review by its counsel, together with a statement of the number of independent licensees, if any, which have accepted or indicated their acceptance of terms and conditions of the license.

D3. Record of Statement

A record of the patent holder's statement (and a statement of the basis for considering such terms and conditions free of any unfair discrimination) shall be placed and retained in the files of the Institute.

D4. Notice

When the Institute receives from a patent holder the assurance set forth in D2(1) or D2(2), the standard shall include a note as follows:

NOTE: The user's attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights.

By publication of this standard, no position is taken with respect to the validity of this claim or of any patent rights in connection therewith. The patent holder has, however, filed a statement of willingness to grant a license under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license. Details may be obtained from the publisher.

D5. Responsibility for Identifying Patents

The Institute shall not be responsible for identifying all patents for which a license may be required by an American National Standard or for conducting inquiries into the legal validity or scope of those patents which are brought to its attention.