

MM 87-268 /

RECEIVED

JUN 10 1992

ORIGINAL
FILE

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

IS/WP2-0201
28 MAY 92

**ADVISORY COMMITTEE ON ADVANCED TELEVISIONS SERVICE
IMPLEMENTATION SUBCOMMITTEE
WORKING PARTY 2 - TRANSITION SCENARIOS
MINUTES OF THIRTY-NINTH MEETING 5/19/92**

1. The meeting was called to order by Acting Chairman, Merrill Weiss, at 11:15 A.M. at NCTA in Washington, D.C.
2. The agenda was adopted as written.
3. A list of attendees is attached.
4. The minutes of the 4/21/92 meeting were approved with the following corrections:

Item 10, paragraph 2 - "... Jeff Krauss stated that the Field Test Task Force should be asked to provide more accurate Proponent characterization of power levels (i.e., peak to average power, etc.) and that this information can also be shared with the Local Area Groups."
5. Review of Action Items.
 - a),b) These action items will not be pursued since the FCC has already established a timetable for ATV conversion.
 - c) Complete.
 - d) Meeting discussion concluded that sufficient common carrier video information is now available except for consumer premises equipment which is not likely to be in the critical path. CPE will be included as a task in the overall PERT.
 - e) Complete. Covered under agenda item 4.
 - f) Carry as an action item.
 - g) Complete. Covered under agenda item 7.
 - h) Complete. Covered under agenda item 8.

No. of Copies rec'd
List A, D, C, E

0+1

i) Completed in conjunction with SS/WP3.

6. Consumer Electronics Survey.

Merrill Weiss distributed a survey response from Matsushita and copies of follow-up letters sent to nonrespondents. IS/WP2-0193 and IS/WP2-0194. Merrill stated that responses were requested by 6/18/92.

Dave Chilson asked whether or not set top converters have been considered in IS/WP2 PERT chart development. After a brief discussion, it was concluded that set top converter development would incur the same critical path limitations as TV receiver development.

7. Software Survey

This will be delayed until the next Working Party meeting.

8. Local Area Groups.

Dave Folsom reported that he has been in contact with all Local Area Groups and that each plans to meet within the next two weeks to discuss the new information that has been supplied by the Working Party. Dave stated that initial discussions indicate considerable concern over the new power level information - particularly with respect to antenna design.

Merrill Weiss indicated Ed Williams offered to provide information for the Local Area Groups based upon ATTC's experience from testing Proponent systems.

Merrill Weiss described a suggestion offered for consideration by Ed Williams to adaptively code the ATV signal to compensate peak power levels in order to reduce peak to average power ratios that must be handled by the transmitting antenna system. Merrill questioned the Working Party on whether or not this suggested enhancement should be presented to Proponents. Peter Symes stated that there is likely to be significant implementation differences among Proponent systems for such a scheme, but the suggestion should be pursued. Ralph Justus was of the opinion that the Working Party should not deal with this issue since system testing is in progress and such a modification would have major implementation impact. It was agreed that the Working Party would not pursue this suggestion with Proponents, but Jim Kutzner volunteered to raise the issue at an upcoming Field Test Task Force meeting.

Peter Symes recommended that the Working Party ask the Field Test Task Force to investigate the trade off of peak clipping in the transmitting antenna vs. the resulting bit error rate. Peter stated that this issue is extremely important since it impacts the investment required by broadcasters in antenna systems and that ultimately the tradeoff is between service area and tolerated errors. Merrill Weiss stated that in support of this analysis, the Proponents should be asked to provide information on 1) peak power vs. the percent of time the peak power occurs and 2) the bit error rate that occurs at various specified average power levels. Merrill will follow up on this task.

A discussion ensued on whether the average power level initially used by broadcasters would be driven by coverage area or minimization of investment. A related question was raised concerning the FCC legal requirements for minimum coverage area. No conclusions were reached on these questions.

Merrill Weiss described a cellular approach to ATV that has the potential to resolve issues in locations that are likely to have difficulties with antennas and towers. The basic approach is similar to the cellular telephone system and would include multiple low power transmitting antennas to cover the service area normally provided by a single high power transmitting antenna. Merrill Weiss then asked whether or not the concept should be presented to the Local Area Group for discussion and comment. Jeff Krauss stated that each of the Proponents should provide a statement on whether or not they believe their system could be used in a cellular fashion before the concept is presented to the Local Area Groups. After considerable discussion it was agreed that requests for comments on the cellular proposal would be added to the Proponent letter that asks for peak to average power information. Jeff Krauss stated that some redefinition of FCC rules would be needed to accommodate the cellular proposal. This issue will be raised with IS/WP1. It was also agreed that the Local Area Groups will be asked to comment on this concept once Proponents have responded.

Merrill Weiss posed the question of whether or not more Local Area Groups should be established. Jim Kutzner stated that the Broadcasters Caucus has initiated a similar effort and that WP2 should discuss with them before proceeding. Dave Folsom also agreed to discuss the issue with MST.

9. Proponent Follow-Up.

At the last SS/WP3 meeting held jointly with IS/WP2 on 5/20/92 an alternate ATV Television Station Block Diagram was created. This alternate implementation is for a minimal ATV television station and was included with the information provided to Proponents.

Merrill Weiss distributed the following documents:

- a) Updated ATV Television Station Block Diagrams & Tables. IS/WP2-0195.
- b) ATRC response to WP2 follow up questions. IS/WP2-0196.
- c) Letter to proponents who have not yet responded to IS/WP2 follow-up questions. IS/WP2-0197.
- d) Responses from ATRC and NHK on ATV Television Block Diagrams. IS/WP2-0198 & IS/WP2-0199.
- e) Collated responses from Proponents on WP2 questions. IS/WP2-0200.

10. Final Report Preparation

Jim Kutzner distributed a first pass of a final report draft based upon the previously developed outline. Jim stated that the draft mainly describes work that has been accomplished and does not yet present any conclusions. Jeff Knauss suggested that a section be added to the report that either specifies system implementation differences or concludes that there are no differences. The Working Party then devoted the remainder of the meeting to development of a one page summary of IS/WP2 objectives and conclusions. IS/WP2-0202.

11. **Summary of action items**

- a) **Contact networks on software survey. - Merrill Weiss**
- b) **Provide information relating to antennas, etc. to Local Area Groups based upon ATTC's experience. Information to be provided by Ed Williams. - Dave Folsom**
- c) **Review with Field Test Task Force Ed Williams' proposal to use adaptive signal coding to reduce peak to average power requirements. - Jim Kutzner**
- d) **Prepare Proponent inquiry on the following:**
 - 1. **Histograms of peak power vs. percent of time those peaks occur.**
 - 2. **Bit error rate that occurs at various specified levels above average power.**
 - 3. **Statement on whether or not system can be used in a cellular fashion.**
- Merrill Weiss
- e) **Raise issue with IS/WP1 on whether or not cellular television station operation requires redefinition of FCC rules. - Merrill Weiss**
- f) **Ask Local Area Groups for comment on cellular TV station operation after response has been received from Proponents. - Dave Folsom**
- g) **Coordinate with Broadcaster Caucus to see if additional Local Area Groups should be formulated. - Merrill Weiss**

12. **The next meeting is scheduled as follows:**

Wednesday, June 24, 1992
10:00 A.M.
NCTA
1st Floor Conference Room
1724 Massachusetts Avenue
Washington, D.C.

This meeting will be held in conjunction with SS/WP3. The SS/WP3 meeting will be held on June 23, 1992 and will include IS/WP2 participation.

13. **The meeting was adjourned at 5:00 P.M.**

TRANSITION SCENARIOS

WP-2

May 19, 1992

NAME	COMPANY	ADDRESS	PHONE
LARRY COCHRAN	THOMSON	600 N. SHERMAN INDIANAPOLIS, IN 46201	317-231-4226 317-267-5946
PETER SYMES	GRASS VALLEY GROUP	PO BOX 1114, GRASS VALLEY CA 95945	916 478 3437
DAVE FOLSOM	PROVIDENCE JOURNAL CORP	1001 WOODRIDGE CTR DR CHARLOTTE NC 28217	(704) 529-3633 (704) 357-4970
RALPH JUSTUS	EIA	2001 PA. AVE. WDC 20006	202-457-8716 FAX x 4985
JEFF KRAUSS	CONSULTANT/GI	17 W. JEFFERSON ST #106 ROCKVILLE MD 20850	301-309-3703 FAX 301-309-9323
WILFRED C. FAGOT	NBC	30 ROCKEFELLER PLAZA NY NY 10020	(212) 664-4550 (212) 664-5219 (FAX)
DAVID A. CHILSON	ABC	47 WEST 66TH ST. NY NY 10023	212-456-3663 (3852 FAX)
Keiichi Kubota	NHK	1 Rockefeller Plaza Room 1430 NY NY 10020	212-489-9550 (9559 FAX)
CHUCK WILK	CPB	901 E. ST., NW, WASHINGTON, DC 20004	(202) 879-9673 FAX: (202) 783-1019
S. Merrill Weiss	Consultant	25 Mulberry Lane - Edison, NJ 08820-2908	(908) 906-0907 Phone & FAX
James Kutner	PBS	1320 Braddock Place Alexandria VA 22314	(703) 739-5473 (Fax - 8938)
Gina Harrison	FCC	2025 M St NW WDC 20009	202 632 7792
Peter Lambert	Broadcasting	1705 DeSales St. NW	(202) 659-2340

**FCC ADVISORY COMMITTEE ON ADVANCED TELEVISION SERVICE
WORKING PARTY ON TRANSITION SCENARIOS
(WP2)**

**Tuesday, May 19, 1992
10:00 A.M.
NCTA
1st Floor Conference Room
1724 Massachusetts Avenue
Washington, D.C.**

AGENDA

- 1. Adoption of Agenda.**
- 2. Approval of 4/21/92 Minutes.**
- 3. Review of Action Items.**
- 4. Consumer Electronics Survey.**
- 5. Software Survey.**
- 6. Local Area Group Update.**
- 7. Proponent Meeting Follow-Up.**
- 8. Final Report Preparation.**
- 9. New Business.**
- 10. Conclusions and Action Items.**
- 11. Next Meeting.**

FCC Advisory Committee on Advanced Television Service

Implementation Subcommittee

Working Party 2 on Transition Scenarios (IS/WP-2)

Survey of Consumer Electronics Manufacturers

Name Ted Rzeszcwski

Company Matsushita Television Co.

Response will be provided by another person from this company.

Name of respondent: _____

Please examine the associated PERT and Gantt charts before answering the questions. The numbers in the blocks on the PERT chart are: the task number at the top left, the duration in days on the right side, the projected start date on the bottom left, and the projected finish date on the bottom right. The items in ellipses are milestones; they all have zero duration. The critical paths are shown as solid lines and the non-critical paths as dotted lines.

The durations shown in both the PERT and the Gantt charts are in calendar days, as opposed to work days. The durations have been adjusted to generally make events begin and end on the first, middle, or last days of a month. The bars on the Gantt chart sometimes extend slightly beyond the actual dates of their related tasks. This results from the time granularity of the computer program that generated the chart. For accurate determination of the dates, please use the PERT chart.

In answering the questions below, please remember that the study is targetted to modelling the general case of a non-proponent receiver manufacturer. Please apply what you know about your own company's development process to such a general case. If there are several products or product lines about which you could respond and for which there would be different answers, please consider the one(s) with the shortest time to market. Use the back of the page if you need more room for your answers.

1. Are the tasks shown on the PERT chart the right ones? Yes No

a. If "No," should tasks be added, deleted, or modified? Added Deleted
(Checking any combination is allowed.) Modified

b. If tasks should be added, please briefly describe the tasks and indicate the tasks that precede and follow them by task number.

c. If tasks should be deleted, please indicate the task numbers:

d. If tasks should be modified, please give the task number and briefly describe the changes required.

2. Do you agree with the durations given for the tasks? Yes No

a. If "No," which task numbers should be changed and what durations should they have?

3. Do you agree with the assumptions given? Yes No

a. If "No," what assumptions should be added? Which should be deleted? Which should be changed and how?

4. What can be done to shorten the time to production? Consider both the tasks themselves and any external factors or assumptions that might impact the development time.

A conservative receiver design approach is required for such a major new product. However, the proponents might start to work with IC manufacturers on common ICs so that the times for items 006, 009, 012 could be shortened. Together these critical path items require 1 year and 8 months. Another possibility is to start them in parallel with item 002, this requires investment by the proponent.

5. If your company also manufactures VCRs, would the development process and timing be about the same as for television receivers? Yes No

- a. If "No," how would they be different? What factors might influence the difference?

- b. What can be done to shorten the time to production for VCRs?

Please return this questionnaire no later than Friday, February 21, 1992. Thank You!

19 MAY 92

**FCC Advisory Committee on Advanced Television Service
Implementation Subcommittee Working Party 2 on Transition Scenarios**

May 6, 1992

Mr. Gregory L. DePriest, Vice President
Advanced Television Technology Center
Toshiba America Consumer Products, Inc.
202 Carnegie Center, Suite 102
Princeton, NJ 08540

Dear Mr. DePriest:

Further to our telephone conversation prior to the recent NAB Convention and per your request, I am sending you another copy of the Survey of Consumer Electronics Manufacturers sent to you originally in January by IS/WP-2. Since they are relatively few in number, it is most important that all major consumer electronics manufacturers respond to the survey. This is necessary to allow IS/WP-2 to provide the best possible information to the Federal Communications Commission regarding the expected timing of HDTV receiver availability in the marketplace. As a major consumer electronics manufacturer, Toshiba's input is essential.

A response from Toshiba is now absolutely imperative as a result of an article in Communications Daily for Friday, April 17, 1992, ascribing to Toshiba comments that a "receiver could be designed and ready to manufacture within one year after (the) FCC names (a) winning system." Such timing would be considerably faster than the timing developed by experts from the consumer electronics industry participating in IS/WP-2 and confirmed universally, so far, by other consumer electronics manufacturers who have responded to the survey.

Since one of the principal goals of IS/WP-2 is to find ways to shorten the time required to implement HDTV, the Working Party critically needs your input. The FCC has asked the Working Party to reconcile its work with the Toshiba comments as reported in the press. Thus we need to know whether the comments were accurately reported, and, if so, we need your help in understanding what it is you believe can be accomplished in what time frame. In any case, your responding to the survey will provide information indispensable to the committee's work. Please respond as soon as possible and, in any event, no later than June 19.

Thank you for your cooperation in providing Toshiba's response to IS/WP-2's request for information. If you have any questions about the survey or if I can be of help in any other way, please call me at (908) 906-0907.

Very truly yours,

S. Merrill Weiss, Acting Chairman
Implementation Subcommittee Working Party 2 on Transition Scenarios

**FCC Advisory Committee on Advanced Television Service
Implementation Subcommittee Working Party 2 on Transition Scenarios**

May 7, 1992

Mr. Koichi Sadashige
Samsung Advanced Media Laboratory
1009 Lenox Drive, Suite 207
Lawrenceville, NJ 08648

Dear Mr. Sadashige:

Further to my telephone conversations with Werner Wedam and you and per Werner's request, I am sending you another copy of the Survey of Consumer Electronics Manufacturers sent to Samsung originally in January by IS/WP-2. Since they are relatively few in number, it is most important that all major consumer electronics manufacturers respond to the survey. This is necessary to allow IS/WP-2 to provide the best possible information to the Federal Communications Commission regarding the expected timing of HDTV receiver availability in the marketplace. As a major consumer electronics manufacturer, Samsung's input is essential.

The FCC is basing much of its rulemaking work on its expectations regarding the timing of the implementation of HDTV by various industry segments. The availability of receivers is crucial to implementation by a number of those segments. Thus it is especially important that the FCC have good information on how long it will take the consumer electronics industry to make receivers generally available in the marketplace. It is looking to IS/WP-2 for that information. IS/WP-2, in turn, is looking to you, along with the other consumer electronics manufacturers, to help it develop the data the FCC requires. It is statistically very important that every company's input be included.

Please respond to the survey as soon as possible and, in any event, no later than June 19. Thank you for your cooperation in providing Samsung's response to IS/WP-2's request for information. If you have any questions about the survey or if I can be of help in any other way, please call me at (908) 906-0907.

Very truly yours,

S. Merrill Weiss, Acting Chairman
Implementation Subcommittee Working Party 2 on Transition Scenarios

**FCC Advisory Committee on Advanced Television Service
Implementation Subcommittee Working Party 2 on Transition Scenarios**

May 7, 1992

Mr. Takashi Kazo, Assistant Manager
Sharp Electronics Corporation
Sharp Plaza
P.O. Box 650
Mahwah, NJ 07430

Dear Mr. Sadashige:

Further to our telephone conversation prior to the recent NAB Convention and per your request, I am sending you another copy of the Survey of Consumer Electronics Manufacturers sent to Sharp originally in January by IS/WP-2. Since they are relatively few in number, it is most important that all major consumer electronics manufacturers respond to the survey. This is necessary to allow IS/WP-2 to provide the best possible information to the Federal Communications Commission regarding the expected timing of HDTV receiver availability in the marketplace. As a major consumer electronics manufacturer, Sharp's input is essential.

The FCC is basing much of its rulemaking work on its expectations regarding the timing of the implementation of HDTV by various industry segments. The availability of receivers is crucial to implementation by a number of those segments. Thus it is especially important that the FCC have good information on how long it will take the consumer electronics industry to make receivers generally available in the marketplace. It is looking to IS/WP-2 for that information. IS/WP-2, in turn, is looking to you, along with the other consumer electronics manufacturers, to help it develop the data the FCC requires. It is statistically very important that every company's input be included.

Please respond to the survey as soon as possible and, in any event, no later than June 19. Thank you for your cooperation in providing Sharp's response to IS/WP-2's request for information. If you have any questions about the survey or if I can be of help in any other way, please call me at (908) 906-0907.

Very truly yours,

S. Merrill Weiss, Acting Chairman
Implementation Subcommittee Working Party 2 on Transition Scenarios

**FCC Advisory Committee on Advanced Television Service
Implementation Subcommittee Working Party 2 on Transition Scenarios**

May 7, 1992

Mr. Robert M. Wiggins, Product Safety Engineer
Emerson Radio Corporation
One Emerson Lane
North Bergen, NJ 07047

Dear Mr. Wiggins

Further to our telephone conversation today, I am sending you another copy of the Survey of Consumer Electronics Manufacturers sent to Emerson originally in January by IS/WP-2. Since they are relatively few in number, it is most important that all major consumer electronics manufacturers respond to the survey. This is necessary to allow IS/WP-2 to provide the best possible information to the Federal Communications Commission regarding the expected timing of HDTV receiver availability in the marketplace. As a major consumer electronics manufacturer, Emerson's input is essential.

The FCC is basing much of its rulemaking work on its expectations regarding the timing of the implementation of HDTV by various industry segments. The availability of receivers is crucial to implementation by a number of those segments. Thus it is especially important that the FCC have good information on how long it will take the consumer electronics industry to make receivers generally available in the marketplace. It is looking to IS/WP-2 for that information. IS/WP-2, in turn, is looking to you, along with the other consumer electronics manufacturers, to help it develop the data the FCC requires. It is statistically very important that every company's input be included.

Please respond to the survey as soon as possible and, in any event, no later than June 19. Thank you for your cooperation in providing Emerson's response to IS/WP-2's request for information. If you have any questions about the survey or if I can be of help in any other way, please call me at (908) 906-0907.

Very truly yours,

S. Merrill Weiss, Acting Chairman
Implementation Subcommittee Working Party 2 on Transition Scenarios

**FCC Advisory Committee on Advanced Television Service
Implementation Subcommittee Working Party 2 on Transition Scenarios**

May 7, 1992

Mr. Bennett Norell, Marketing Manager - Video Products
Goldstar Electronics International, Inc.
1000 Sylvan Avenue
Englewood Cliffs, NJ 07632

Dear Mr. Norell:

Since there has been no response from Goldstar to its initial mailing, I am sending you another copy of the Survey of Consumer Electronics Manufacturers originally sent to Goldstar in January by Implementation Subcommittee Working Party 2 (IS/WP-2). Since they are relatively few in number, it is most important that all major consumer electronics manufacturers respond to the survey. This is necessary to allow IS/WP-2 to provide the best possible information to the Federal Communications Commission regarding the expected timing of HDTV receiver availability in the marketplace. As a major consumer electronics manufacturer, Goldstar's input is essential.

The FCC is basing much of its rulemaking work on its expectations regarding the timing of the implementation of HDTV by various industry segments. The availability of receivers is crucial to implementation by a number of those segments. Thus it is especially important that the FCC have good information on how long it will take the consumer electronics industry to make receivers generally available in the marketplace. It is looking to IS/WP-2 for that information. IS/WP-2, in turn, is looking to you, along with the other consumer electronics manufacturers, to help it develop the data the FCC requires. It is statistically very important that every company's input be included.

Please respond to the survey as soon as possible and, in any event, no later than June 19. Thank you for your cooperation in providing Goldstar's response to IS/WP-2's request for information. If you have any questions about the survey or if I can be of help in any other way, please call me at (908) 906-0907.

Very truly yours,

S. Merrill Weiss, Acting Chairman
Implementation Subcommittee Working Party 2 on Transition Scenarios

**FCC Advisory Committee on Advanced Television Service
Implementation Subcommittee Working Party 2 on Transition Scenarios**

May 7, 1992

Mr. Robert Wolff
Matsushita Television Company
9401 West Grand Avenue
Franklin Park, IL 60131

Dear Mr. Wolff:

Further to our telephone conversation today, I am sending you another copy of the Survey of Consumer Electronics Manufacturers sent to Matsushita originally in January by IS/WP-2. Since they are relatively few in number, it is most important that all major consumer electronics manufacturers respond to the survey. This is necessary to allow IS/WP-2 to provide the best possible information to the Federal Communications Commission regarding the expected timing of HDTV receiver availability in the marketplace. As a major consumer electronics manufacturer, Matsushita's input is essential.

The FCC is basing much of its rulemaking work on its expectations regarding the timing of the implementation of HDTV by various industry segments. The availability of receivers is crucial to implementation by a number of those segments. Thus it is especially important that the FCC have good information on how long it will take the consumer electronics industry to make receivers generally available in the marketplace. It is looking to IS/WP-2 for that information. IS/WP-2, in turn, is looking to you, along with the other consumer electronics manufacturers, to help it develop the data the FCC requires. It is statistically very important that every company's input be included.

Please respond to the survey as soon as possible and, in any event, no later than June 19. Thank you for your cooperation in providing Matsushita's response to IS/WP-2's request for information. If you have any questions about the survey or if I can be of help in any other way, please call me at (908) 906-0907.

Very truly yours,

S. Merrill Weiss, Acting Chairman
Implementation Subcommittee Working Party 2 on Transition Scenarios

**FCC Advisory Committee on Advanced Television Service
Implementation Subcommittee Working Party 2 on Transition Scenarios**

May 7, 1992

Mr. Julius Szakolczay, Manager - Engineering & Development
Mitsubishi Electric America, Incorporated
5757 Plaza Drive
Cypress, CA 90630-0007

Dear Mr. Szakolczay:

Further to our telephone conversation today, I am sending you another copy of the Survey of Consumer Electronics Manufacturers sent to Mitsubishi originally in January by IS/WP-2. Since they are relatively few in number, it is most important that all major consumer electronics manufacturers respond to the survey. This is necessary to allow IS/WP-2 to provide the best possible information to the Federal Communications Commission regarding the expected timing of HDTV receiver availability in the marketplace. As a major consumer electronics manufacturer, Mitsubishi's input is essential.

The FCC is basing much of its rulemaking work on its expectations regarding the timing of the implementation of HDTV by various industry segments. The availability of receivers is crucial to implementation by a number of those segments. Thus it is especially important that the FCC have good information on how long it will take the consumer electronics industry to make receivers generally available in the marketplace. It is looking to IS/WP-2 for that information. IS/WP-2, in turn, is looking to you, along with the other consumer electronics manufacturers, to help it develop the data the FCC requires. It is statistically very important that every company's input be included.

Please respond to the survey as soon as possible and, in any event, no later than June 19. Thank you for your cooperation in providing Mitsubishi's response to IS/WP-2's request for information. If you have any questions about the survey or if I can be of help in any other way, please call me at (908) 906-0907.

Very truly yours,

S. Merrill Weiss, Acting Chairman
Implementation Subcommittee Working Party 2 on Transition Scenarios

19 MAY 92

**FCC Advisory Committee on Advanced Television Service
Implementation Subcommittee Working Party 2 on Transition Scenarios (IS/WP-2)
Systems Subcommittee Working Party 3 on Economic Analysis (SS/WP-3)**

To: ATV System Proponent Representatives

From: Merrill Weiss

Date: April 30, 1992

Re: Updated Block Diagrams & Accompanying Tables

As agreed at the IS/WP-2 & SS/WP-3 meetings last week, the ATV Television Station block diagram has been updated and split into two related block diagrams. The accompanying tables have similarly been split into two sets, each connected with one of the block diagrams. The tables have also been supplemented with an additional table providing you with functional descriptions of the items in each of the block diagrams. Copies of the updated block diagrams and their related tables follow.

The two block diagrams now represent a "minimal" ATV television station and a "transitional" ATV television station. The "minimal" station is intended to represent the minimum a station could do and still meet the requirements of its license. It assumes that a substantial amount of programming comes by way of upconversion from NTSC. Similarly, commercials, ID's, emergency announcements, and the like are upconverted NTSC. The entire facility is assumed to operate on fully compressed ATV signals. A record/play VTR or VCR is shown as an option for stations such as independents or public stations that must accept programming on tape or do their own time shifting. The machine is assumed to have no "trick" modes (even to the extent of not including picture in shuttle, if necessary). Master Control continuity switching must provide clean cuts but no effects such as dissolves, wipes, or keys.

The "transitional" station represents a more sophisticated (and potentially more expensive) approach in which an infrastructure is built to allow the later inclusion of more complete production and processing of the signals. Again, a substantial amount of programming is assumed to initially be upconverted NTSC. But commercials are assumed to begin coming to the station in ATV form fairly quickly to accompany programs delivered in ATV form, and a VTR or VCR is provided in Phase 2 for them. ID's, emergency announcements, and such are generated in ATV form for higher quality than upconversion yields. Although not shown because they arrive in Phase 3, record/play VTR's or VCR's are certainly anticipated for inclusion in the system at a relatively early time. Master Control continuity switching must provide clean cuts initially, and the infrastructure chosen must support use of effects later on.

There are now two sets of tables for you to fill in — one for each block diagram. Since the "minimal" system has fewer elements than the "transitional" system, the letters and numbers representing the missing lines and blocks have been deleted from its tables. The corresponding letters and numbers in the two diagrams and tables represent similar functions, although often located at different points in the two systems. The internal functionalities of the various items of equipment and their interfaces are expected to be quite different between the two sets, however, because of the different underlying assumptions made for the two approaches.

Now part of each set of tables is one already filled in, giving you a functional description of each equipment element in each system. These have been provided to help those not familiar with broadcast station practice to understand what is required of the systems. The descriptions provided define the generic functionality. When you fill in the "Requirements for Equipment and Descriptions" tables, you are expected to provide a much more detailed description of the internal functionality required of each device based upon its use with your particular system.

The next meeting of IS/WP-2 is Tuesday, May 19, with SS/WP-3 meeting the following day. Consequently, the following tables must be returned filled in by Thursday, May 14, to permit advance distribution to participants in the two Working Parties. Please send copies of your responses both to Larry Thorpe and to me. If you have any questions regarding the needs of the Working Parties in relation to your responses, please call either or us. If there are questions regarding the operation of any items in the block diagrams, again please call either of us.

This material will be sent to you both by FAX and by Priority Mail today. The FAX copy is to get you started. Please use the cleaner, mailed copy for your responses. As before, if you need copies of the tables with more space in the blocks, please let me know; they will be easy to supply.

**FCC Advisory Committee on Advanced Television Service
Implementation Subcommittee Working Party 2 on Transition Scenarios (IS/WP-2)
Systems Subcommittee Working Party 3 on Economic Analysis (SS/WP-3)**

ATV "Minimal" & "Transitional" Television Station Block Diagrams and Tables

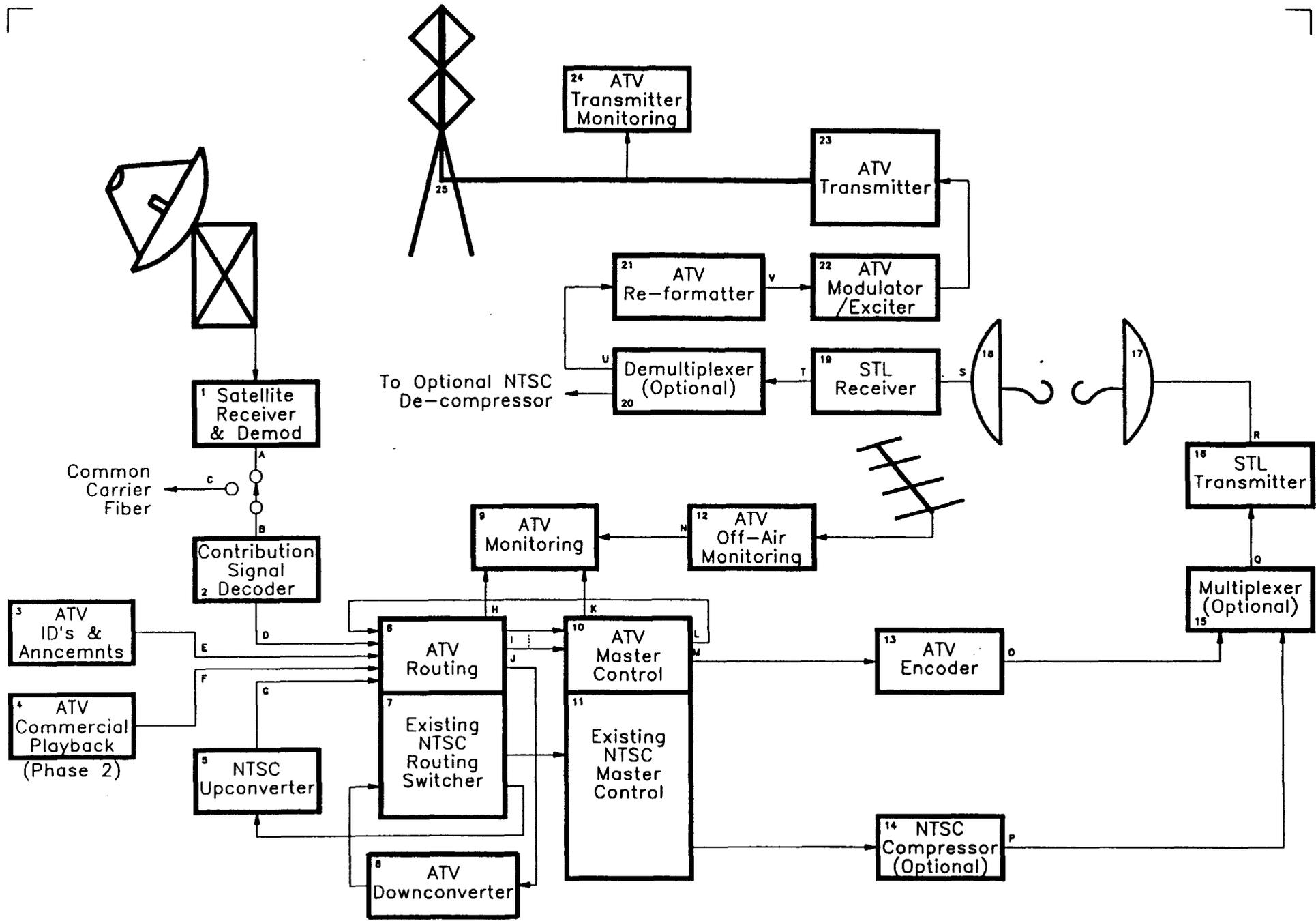
Key to Signal Format Categories and Related Data

Organization of Data in this Key:

- Cat. # Category Description**
- A. Data for Column A
 - B. Data for Column B
 - C. Data for Column C

Categories and Related Data:

1. Component Video (Uncompressed/3 components)
 - A. Analog, Digital
 - B. Raster Format (#lines/ F_V /Interlace ratio)
 - C. Component Set (GBR, $Y_P P_R$)
2. Intra-Plant Compression
 - A. Bit Rate (serial digital assumed)
 - B. Intra-field, Inter-field
 - C. Sub-sampling (H & V, by component)
3. Inter-Plant Distribution/Contribution Compression
 - A. Bit Rate
 - B. Intra-field, Inter-field
 - C. Sub-sampling (H & V, by component)
4. ATV Final Compression
 - A. Bit Rate
5. ATV Signal Processed for Terrestrial Broadcast Transmission
 - A. Analog, Digital
 - B. Bandwidth or Bit Rate (as appropriate)
6. ATV Signal Processed for Studio-to-Transmitter Link (STL) Transmission
 - A. Analog, Digital
 - B. Bandwidth or Bit Rate (as appropriate)
7. Modulated STL Signal
 - A. Modulation Technique
 - B. Bandwidth
8. Modulated Terrestrial Broadcast Signal
 - A. System Name



ATV "Transitional" Television Station

**ATV "Transitional" Television Station
Signal Format Categories and Related Data**

Signal	Cat.#	Data A	Data B	Data C
A				
B				
C				
D				
E				
F				
G				
H				
I				
J				
K				
L				
M				
N				
O				
P				
Q				
R				
S				
T				
U				
V				
W				

See associated "Key to Signal Format Categories and Related Data" for the information required in each column

**ATV "Transitional" Television Station
Requirement for Equipment and Descriptions**

Unit #	Req. ¹	Description
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

¹ Requirement for each Unit indicated by: X = Required, O = Optional, N = Not Needed

**ATV "Transitional" Television Station
Equipment Functional Descriptions**

NOTE: Assumes facilities to permit growth from minimal ATV implementation to normal television station operations. May involve use of interfaces with other than fully compressed ATV signals.

Unit #	Description
1	Satellite Receiver & Demodulator - Delivers ATV partially or fully compressed signal from satellite for further processing and transmission. If signal is partially compressed, further source coding is assumed to be required.
2	Contribution Signal Decoder - Decodes incoming satellite or fiber delivered signals into form used throughout station for further processing.
3	ATV ID's & Announcements - Provides signals for doing Station Identification and making emergency announcements. May be some form of character generator. Output is in signal form used throughout station (possibly compressed).
4	ATV Commercial Playback - VTR's or VCR's that play back tapes in signal form used throughout station. Signal form on tape may or may not be the same as station distribution/processing form.
5	NTSC Upconverter - Decodes NTSC input signals to components & converts raster structure to that matching signal form used throughout station. Encoding/compression may be also be required to match signal form used elsewhere.
6	ATV Routing - Permits distribution & switching of signals around facility. Delivers multiple signals to ATV Master Control for clean on-air switching. May be as simple as a patch panel. Eventually likely to be an electronic switch.
7	Existing NTSC Routing Switcher - Used to distribute & switch signals in the existing NTSC plant. Signals carried may range from analog encoded NTSC to serial digital components, depending upon station technical sophistication.
8	ATV Downconverter - Decodes ATV input signals, converts raster structure to 525 lines/2:1, encodes NTSC.
9	ATV Monitoring - Provides picture monitoring for signals distributed internally, for Master Control output, and for off-the-air signals.

10	ATV Master Control - Provides continuity switching of on-air signals. May include effects (wipes, dissolves, keys, etc.). Control may be linked to NTSC Master Control switcher.
11	Existing NTSC Master Control - Provides on-air continuity switching of NTSC signals for existing station. Uses analog encoded NTSC in the near term. May provide automated control for ATV Master Control switcher.
12	ATV Off-Air Monitoring - Provides off-air reception & demodulation of ATV signals for remote control purposes. Includes special test equipment necessary to maintain & certify proper transmitter operation. Picture monitoring handled by ATV Monitoring block.
13	ATV Encoder - Encodes ATV Master Control output for transmission. Input may be uncompressed or partially compressed signals, depending upon choice made for station internal operation. Output is in form suitable for STL transmission, which may be different from actual broadcast signal format.
14	NTSC Compressor - Optional device to permit combination of NTSC signal with ATV signal for transmission over single Studio-to-Transmitter Link (STL).
15	Multiplexer - Optional unit to combine compressed ATV and compressed NTSC signals into single signal for STL transmission.
16	STL Transmitter - Microwave transmitter for either compressed ATV signal alone or combined compressed ATV & NTSC signals.
17	Transmit Dish Antenna for Microwave STL
18	Receive Dish Antenna for Microwave STL
19	STL Receiver - Microwave receiver for either compressed ATV signal alone or combined compressed ATV & NTSC signals.
20	Demultiplexer - Optional unit to separate multiplexed compressed ATV and NTSC signals into individual signals after STL transmission.
21	ATV Re-formatter - Converts compressed ATV signal from form used for STL transmission to form needed to modulate ATV broadcast transmitter.
22	ATV Modulator/Exciter - Generates modulated ATV signal and converts to broadcast channel frequency for input to transmitter.
23	ATV Transmitter - High power amplifier for on-channel signals from exciter.

24	ATV Transmitter Monitoring - Combines necessary RF conversion, demodulation, decoding, picture monitoring, and special test equipment for certification & maintenance of proper transmitter operation.
25	ATV Broadcast Antenna