

Docket 87-268

Rec'd 8/26/92

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**ADVISORY COMMITTEE ON  
ADVANCED TELEVISION SERVICE**

**IMPLEMENTATION SUBCOMMITTEE**

Minutes of the Eighteenth Meeting

1. The eighteenth meeting of the Implementation Subcommittee convened at 10:35 a.m. on June 30, 1992, in the Commission Meeting Room at the Federal Communications Commission, 1919 M Street, N.W., Washington, D.C. and adjourned at 12:15 p.m.

2. The following Subcommittee members were present:

George Vradenburg III, Co-Chair  
Brenda Fox, Vice Chair  
Valerie Schulte, representing Henry Baumann, Vice Chair  
Charles Jackson, Chair, Working Party 1, Policy & Regulation  
S. Merrill Weiss, Vice Chair,  
Working Party 2, Transition Scenarios

3. The designated federal employee attending was Gina Harrison, Staff Attorney, FCC Mass Media Bureau.

4. Chairman Vradenburg announced the appoint of Craig Tanner as Co-Chair of Working Party 2.

5. The minutes of the seventeenth meeting were adopted with one amendment.

6. Mr. Jackson summarized the activities of Working Party 1 since the last Subcommittee meeting. First, the Working Party's last Interim Report was revised to reflect that the group recommends a requirement that proponents disclose a description of their system, but that that submission need not include manufacturing know-how as originally suggested. The distinction is that manufacturing know-how might be interpreted as revealing manufacturing techniques that are not properly part of an ATV standard. Second, the Working Party is continuing its review of simulcasting matters. Because of the controversial nature of the simulcasting issue, Mr. Jackson said that the group is now planning to submit a list of issues surrounding simulcasting with "pro and con bullet points." He said that, despite the lack of consensus on simulcasting, the discussion has been fruitful in clarifying the available options. Third, noting the significant marketing ramifications of the call sign issue, Mr. Jackson said that Working Party 1 will examine the topic of appropriate call signs for ATV stations.

7. Mr. Weiss reviewed the activities of Working Party 2 (report attached). The definition of a minimal ATV system, as referred to in Mr. Weiss' report, was discussed. Mr. Weiss stated that the block diagram of a

minimal ATV station represented the minimum possible to pass through signals from a network or from a syndicated program source, delivered by satellite, common carrier, or tape. There would be minimum requirements, for example, the ability to do a station identification, the ability to provide services required by FCC regulation, such as emergency warning information, and the ability to play back commercials. In sum, Mr. Weiss said that a minimal ATV system would transmit material at the minimum possible cost, and assumes that commercials and other material for programming would arrive in fully compressed form. He said that this scenario would require fewer encoders, mainly for upconverting, and those encoders that are used might be less expensive than ones with an HDTV input because they would come from a lesser source, NTSC. Charles Heuer of Zenith asserted that the block diagram of Working Party of a minimal ATV station goes beyond just being on the air, the definition utilized by the FCC. For example, the FCC definition does not mention local commercial insertion equipment or local satellite reception. Mr. Weiss acknowledged that the definition reflected broadcaster input rather than just what was mention in the FCC's definition. Stanley Baron of NBC noted that the same piece of equipment used to fulfill FCC requirements for station identification could also be used to play back commercials, thus eliminating that extra equipment cost.

8. Chairman Vradenburg asked about the necessity of requiring ATV stations to provide station identification or emergency warning information until receiver penetration has reached a certain level. Mr. Heuer added that, in looking at the parts of the minimal stations, there are unanswered questions, such as what is simulcasting and whether ATV stations should be required to follow all or part of the current FCC rules directing television station operation. He indicated that, no matter how low receiver penetration might be, if a station receives, for instance, emergency warning information, the need of even that small audience to receive such information must be considered. Mr. Weiss stated that, in looking at the Working Party's definition of a minimal station, it should be recognized that some of the elements that may not be perceived as absolutely necessary, are just a fraction of the cost of some of the other transition equipment costs. Mr. Heuer commented that the purpose of the Working Party 2 definition was to formulate some conception of what some of the blocks included in the diagram might require technically, and when this equipment might become available, regardless of whether they are required by Commission rules. He noted that SS/WP3 is working on cost analysis of such equipment. Mr. Heuer said that the minimal block diagram allows elimination of those elements that are not necessary. It was noted that the station was characterized as an ATV station, which would include EDTV as well as HDTV, and that the diagrams are more properly labelled HDTV. It was suggested that the definition of simulcast might require a certain amount of HDTV programming. Finally, it was determined that there is a need to fully label the block diagrams of minimal and transitional systems and to clarify what assumptions were made in producing these documents.

9. Mr. Weiss next discussed his goal in surveying professional equipment manufacturers. He emphasized that they would be asked about production

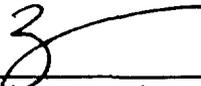
basic goal of the survey is to add validity to the basic assumptions which Working Party 2 has made in order to produce the PERT charts. Mr. Jackson raised the question of whether the right parties are being surveyed. In response to an inquiry, Mr. Weiss said that the Working Party members and the experts seem to believe that the transmitters and towers required for ATV will use the current technology, but that it will be optimized. Thus, the manufacturers' survey is asking, given current technology, how many transmitters or towers can be produced in a year, and whether they will be scaling up their production during the transition.

10. Mr. Weiss spoke about the responsibility of the successful system proponent to provide system documentation, and stated his understanding that all of the proponents under consideration signed an agreement setting out these responsibilities earlier in the selection process. Paul Misener representing Advisory Committee Chairman Richard Wiley stated that Chairman Wiley is currently looking into precisely what documents the proponents might have signed in this regard and will report back accordingly. Chairman Vradenburg, in response to Mr. Weiss's indication that Working Party 2 is drafting a White Paper on the subject of the documentation process, asked that Working Party 1 review what approach the FCC should take in writing transmission standards.

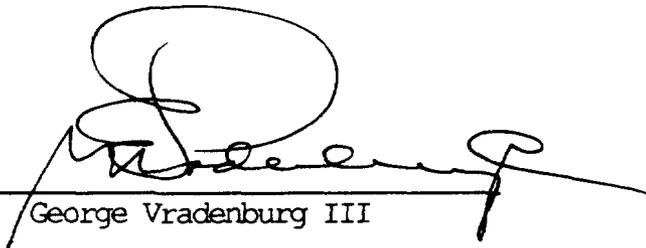
11. Chairman Vradenburg confirmed that the submissions for the Advisory Committee's final report should be to the Advisory Committee by December 1992. Thus, Chairman Vradenburg said that the Working Party reports should be submitted by Thanksgiving for review by the Implementation Subcommittee.

12. Chairman Vradenburg announced that the next Implementation Subcommittee meeting will be on August 25 at 10:30 a.m. in the Commission Meeting Room.

Submitted:

  
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Gina Harrison

Approved:

  
\_\_\_\_\_  
George Vradenburg III

ATV Advisory Committee

MEETING: Implementation Subcommittee - June 30, 1992

ATTENDEES

<u>Name</u>	<u>Representing</u>	<u>Phone Number</u>
Charles Heuer	Zenith	708 391 8531
R.M. FEAZEL	Comm DAILY	872-9200
DAVID L. HANNA	CONSULTANT/GTE TELOPS	917 656-1933
Jayne Roads	Hughes Aircraft Co.	703-284-4212
Joe Donahue	Thomson	202-872-0670
Don Walker	Motorola	202 371-6947
Jennifer Sore	FCC	202 632-9640
J KRAUSS	CONSULTANT/GT	301-309-3703
Q RODGERS	GT	
R RAST	GT	
Stephanie Stenger	FCC	202 6346530
Elizabeth Frady	FCC	202-432-6302
Robert Hopkins	ATSC	202-828-3130
PAUL MIZENER	WREY, REIN & FIELDING	202-828 7506
Kevin Fisher	Smith & Rowntree	202 293-7742
Mr. JOHNSON	CBS	202 457-4513
Sam Baron	NBC	212-664-7557
Art Hopmann	HDTV International	703 548-1423

**Report to Implementation Subcommittee**  
**from Working Party 2 on Transition Scenarios**

**June 29, 1992**

- 1. Analysis of System-Specific Implementation**
- 2. Survey of Professional Equipment Manufacturers**
- 3. Survey of Consumer Electronics Manufacturers**
- 4. Survey of Software Users and Providers**
- 5. Examination of Distributed Transmission Concept**
- 6. Follow-up with Local Area Groups**
- 7. Responsibilities of Selected Proponent**
- 8. Concern for Time Required for Documentation Process**
- 9. Final IS/WP-2 Activities**

## **Analysis of System-Specific Implementation**

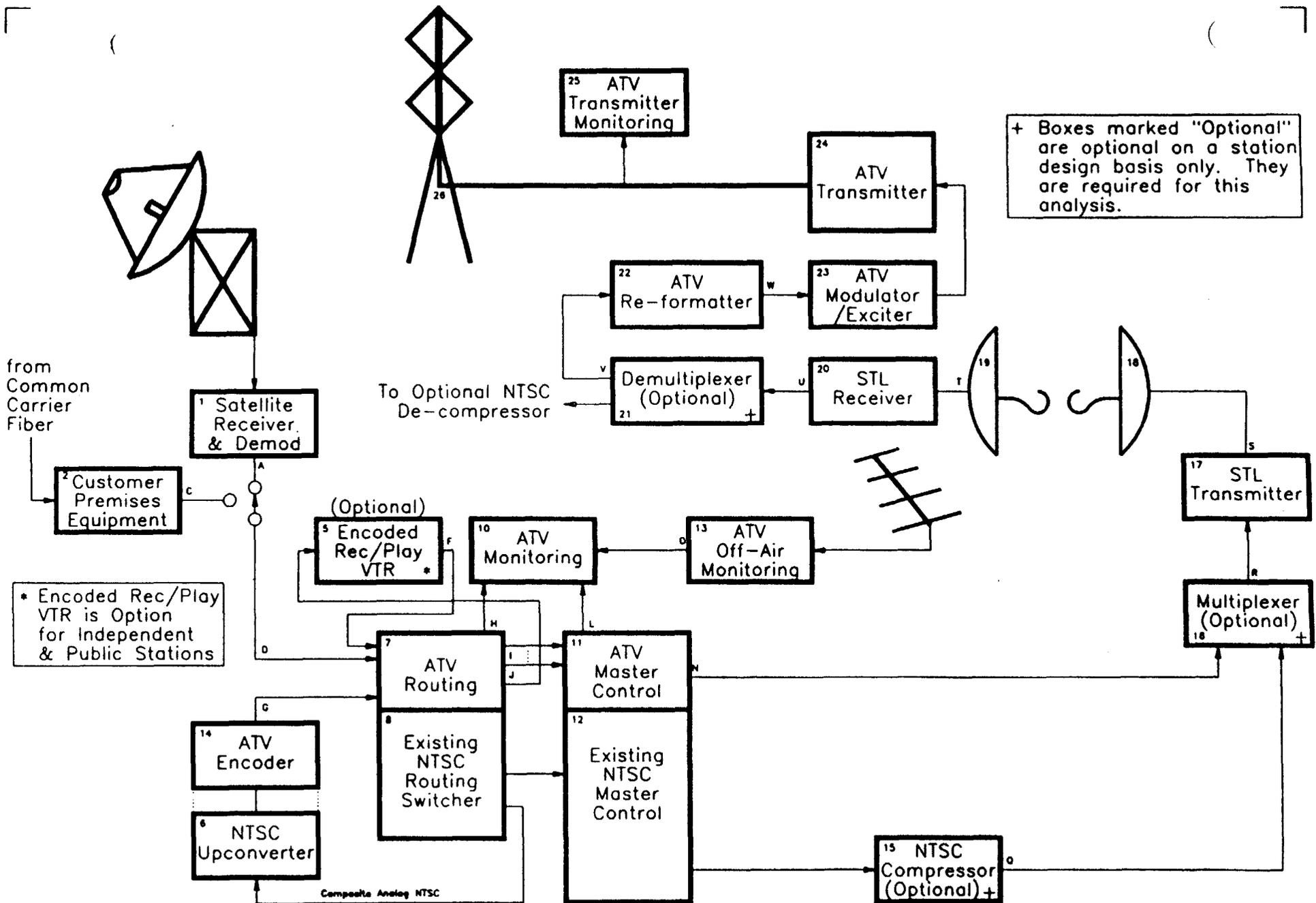
- **Proponent meetings – 1/13/92 & 3/25/92**
- **Questions for Proponents**
  - **Analysis of initial answers during multiple conference calls**
- **Follow-up Questions for Proponents**
  - **Requested for meeting of 3/25/92**
  - **Last written responses received for meeting of 6/24/92**
- **Summary tabulation of initial responses prepared**
  - **Next step is inclusion of follow-up responses in tabulation**

## Analysis of System-Specific Implementation - cont'd.(1)

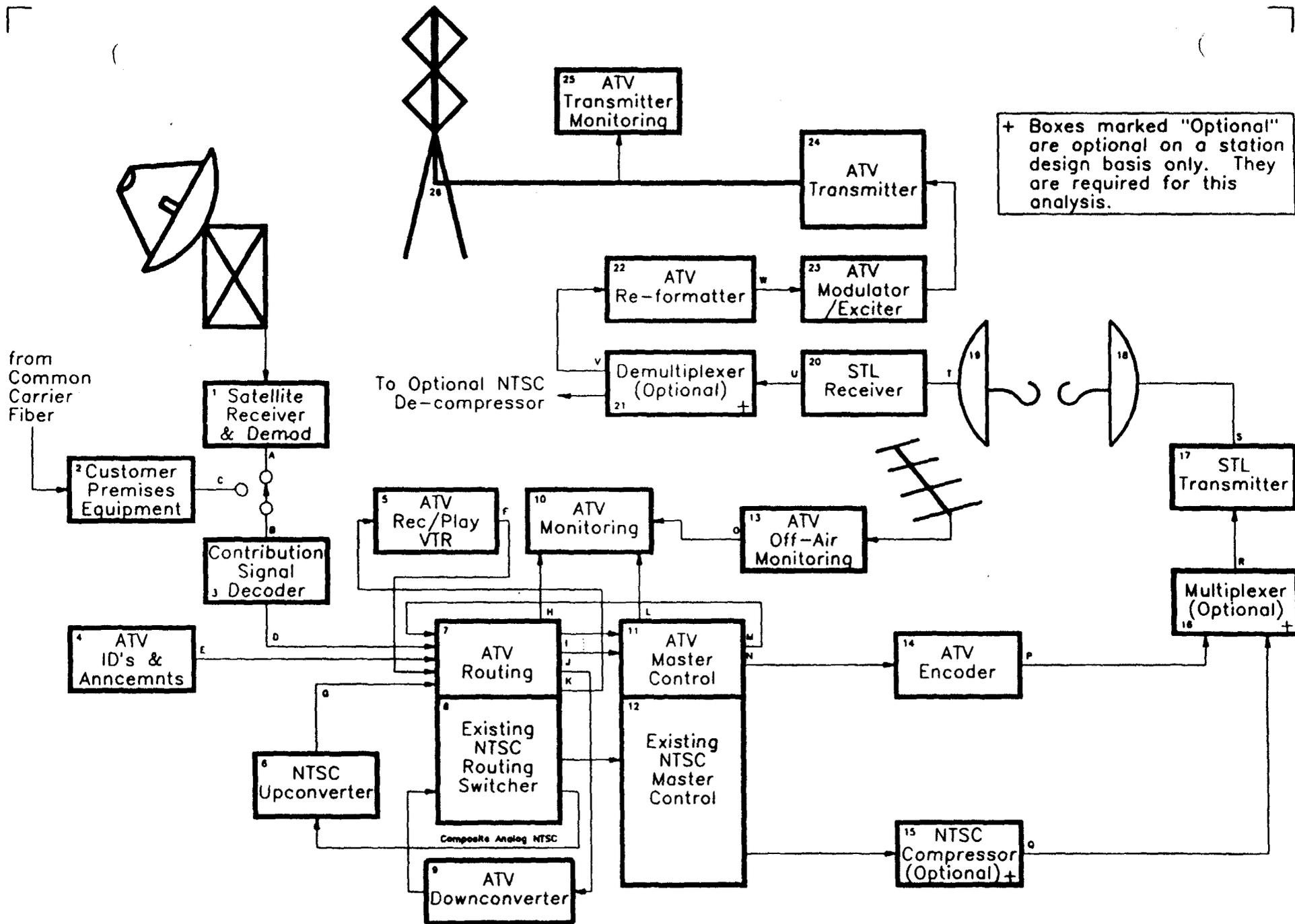
- **Other inputs from Proponents**
  - **Comments on PERT, Gantt charts, Lists of Assumptions**
  - **Block diagrams of ATV stations**
    - "Minimal"
    - "Transitional"
- **Block diagrams jointly developed with SS/WP-3**
  - **Common descriptive terminology generated**
  - **Charts provided for filling in descriptions of system elements**
- **Uses "pass-through" television station as a model**
  - **Representative of other applications**
  - **E.g., Cable Headend — commercial insertion**

## **Analysis of System-Specific Implementation - cont'd.(2)**

- **"Minimal" station assumes limitations in program release capability**
  - **Uses fully compressed signals throughout for minimum cost**
  - **Requires all transitions to be cuts - full screen material, no effects**
  - **Cuts may be less than perfect, depending upon system**
  
- **"Transitional" station provides upgrade path to full capability program release**
  - **Signals at higher data rate than full compression**
  - **Signals may be decoded for processing**
  - **With signal decoding, can provide effects and continuity transitions**
  
- **Review of all materials against current PERT/Gantt/Assumptions**
  - **Preparation of System-Specific versions, if required**
  - **Characteristics of interest included in last report**
  
- **"Minimal" television station block diagram**
  
- **"Transitional" television station block diagram**



ATV "Minimal" Television Station



ATV "Transitional" Television Station

## Survey of Professional Equipment Manufacturers

- Professional equipment manufacturers surveyed once at beginning of process
  - Survey based solely on different production standards
  - Only information available at the time
  - Apparent that many answers were given to influence the outcome of the process
  - Results of the initial survey were discarded as inconclusive
- Professional equipment manufacturers to be surveyed once again
  - Far more known about the system proposals
  - Fewer options for underlying raster specifications
  - Opportunities for other forms of compression must be explored
  - IS/WP-2 to concentrate on timing of availability of equipment
  - Will likely work in cooperation with SS/WP-3 handling the economic issues
- Analysis of Proponent responses a prerequisite
  - Will help identify nature of equipment that will be required
  - Will permit differentiation of systems
  - Survey design to be based upon responses

## Survey of Consumer Electronics Manufacturers

- **Findings by Consumer Electronics experts in IS/WP-2**
  - Receivers generally available 2½-3 years following FCC decision  
(and assumed availability of technical information)
  - Proponent might have 6-9 month advantage in start-up
  - General availability required to begin real consumer market
- **Survey of Consumer Electronics Manufacturers undertaken to validate findings**
  - Because of significance of receiver availability to entire implementation
  - Participants in IS/WP-2 represent 3 C.E. manufacturers
  - All three are members of proponent teams
- **Responses continue to confirm IS/WP-2 findings**
  - Survey covers total of 14 manufacturers
  - Ten responses returned so far + 2 participants in IS/WP-2
  - Over 85% of companies are represented
  - All confirm timing of receiver availability as determined by IS/WP-2 experts
  - Some suggestions received for improvements in PERT/Gantt/Assumptions
- **Press report quoting manufacturer as indicating 1 year to receiver availability**
  - Direct response from manufacturer supports IS/WP-2 analysis

## **Survey of Consumer Electronics Manufacturers - cont'd.**

- **IS/WP-2 documents modified based on inputs from C.E. manufacturers**
  - **Single set of PERT/Gantt/Assumptions split into three sets**
  - **Categorizes manufacturers by types**
    - **Proponent consumer electronics manufacturer**
    - **Non-proponent manufacturer that develops its own Integrated Circuits**
    - **Non-proponent manufacturer that purchases Integrated Circuits from a vendor**
  - **Differentiation will allow more careful examination of timing of receiver availability**
- **One (non-manufacturer) proponent indicates shorter time to receiver availability**
  - **Based on earlier IC availability to manufacturers from vendors**
  - **Accepts risk of starting IC development before ACATS/FCC selection**
  - **Difference might be six months from IS/WP-2 analysis**
  - **Efforts continuing to bring consistency to data**

## **Survey of Software Users and Providers**

- **Request from IS to determine expected availability of programming**
  - **Users' expectations of supply**
  - **Producers'/distributors' expectations of demand**
  - **Plans for production and distribution**
- **Decision by IS/WP-2 to conduct informal, mini-survey as start**
  - **Avoid full, complex, time consuming survey, if possible**
  - **Identify issues to be included in larger survey, if needed**
  - **Hope is that there will be consistency of responses**
- **Informal survey devised, first data taken**
  - **Dozen questions asked**
    - **First HDTV programming to be offered**
    - **Production formats to be used**
    - **Timing of initial program production/distribution, equipment installations**
- **10-20 answers sought**
  - **Broadcast/cable networks**
  - **Studios/distributors**
  - **Production/post production houses**

## Examination of Distributed Transmission Concept

- Idea discussed informally in industry for some time
  - Introduced formally to ACATS process by MIT submission to SS/WP-1
  - IS/WP-2 decided to look at implications for implementation (5/26/92)
  - Further discussions and plan for examination at last meeting (6/24/92)
- Concept similar to cellular television
  - Multiple transmitters serving smaller areas than single transmitter
  - Lower power, lower height
  - Unlike true cellular systems, all on a single frequency/channel
- Potential solution to two problems
  - Short spacing of co-channel stations
  - Limitations in capacity at main transmitter facility
- Potential operational & technical obstacles to be examined
  - Cost of installation/operation/maintenance of multiple sites vs. single
  - Characteristics required in transmission system
  - Characteristics required in receiver
  - Possibility to burden all receivers for sake of a few situations

**Examination of Distributed Transmission Concept - cont'd.**

- **Two-step examination devised**
  - **Develop broadcaster system requirements to make technique practical**
    - **Small group assigned to develop needs/systems**
    - **Input to be sought from existing Local Area Groups**
  - **Seek Proponent input on characteristics of their systems**
- **If match between requirements and characteristics, arrange further study**
  - **Local Area Groups for real world evaluation**
  - **SS/WP-1, SS/WP-2, Field Test Task Force, etc.**

## Follow-up with Local Area Groups

- **Local Area Groups established in five major cities**
- **Two-fold purpose**
  - **Gain implementation information for IS/WP-2 from potential problem cities**
  - **Instigate head start for broadcasters in some of the major markets**
- **Local Area Groups needed more information to proceed**
  - **Data on system power levels for coverage equivalent to NTSC**
  - **System transmitter linearity requirements and headroom capabilities**
  - **Availability and power handling of wideband antennas**
  - **Other antenna options**
- **Most of needed information now available**
  - **Local Area Groups to be asked to look at their situations again and report**
- **Decision to add five more cities**
  - **Coordinated with Broadcaster Caucus — no conflict**
  - **Cities to be decided by Local Area Group liason**
  - **Combination of top & mid markets**

## **Responsibilities of Selected Proponent**

- **Issue arose from original IS/WP-2 identification of documentation requirements**
  - **Significance of documentation covered in earlier reports**
  - **Handed off to IS/WP-1 for further examination**
  - **Came to include more than just the disclosure of the selected system**
- **Some controversy over language to express undertakings required**
  - **IS/WP-2 requested to provide wording to spell out details**
  - **Draft proposal submitted — discussed at IS/WP-1 & IS/WP-2**
  - **Decided to raise to higher level**
- **Current understanding**
  - **Issue covered by original agreement signed by proponents**
  - **No need for further work by IS/WP-2**

## Concern for Time Required for Documentation Process

- **Documentation of selected system is gating item for entire implementation**
  - **On the Critical Path in all scenarios**
  - **Seen as very complex standards writing process**
  - **Must be kept to minimum in any way possible**
  - **Assumed in IS/WP-2 studies to be completed at time of NPRM**
- **Concern expressed regarding perceived opportunity to "improve" selected system**
  - **Other proponents**
  - **Non-proponents**
  - **If allowed to happen, could significantly impact speed of implementation**
- **IS/WP-2 writing White Paper on the subject**
  - **Target audience is organization that will conduct documentation process**
  - **Small group assigned to provide inputs on subject**

## Final IS/WP-2 Activities

- **Integration of PERT/Gantt/Assumptions into single Implementation program**
  - **Currently done by industry segment**
  - **Plan is to provide unified structure for overall Implementation**
  - **Will work out inter-industry interactions**
  
- **Differentiation of system implementations, if possible**
  
- **Preparation of Report to SS/WP-4**
  - **Detailed description of document provided by SS/WP-4**
    - **One page summary (to be included in ACATS Final Report)**
    - **Approx. 25-page backup detail document as part of Appendix**
    - **Other documentation as necessary for communication to FCC**
  
- **Work on Report to SS/WP-4 already begun**
  - **Outline prepared of IS/WP-2 Fifth Interim Report**
  - **Will serve as starting point for preparation of Final Report**
  - **First draft of Executive Summary written**