

Docket 87-268

ADVISORY COMMITTEE ON
ADVANCED TELEVISION SERVICE
IMPLEMENTATION SUBCOMMITTEE

Minutes of the Fifteenth Meeting

1. The fifteenth meeting of the Implementation Subcommittee convened at 10:10 a.m. on November 19, 1991, in the Commission Meeting Room at the Federal Communications Commission, 1919 M Street, N.W., Washington, D.C. and adjourned at 12:00 p.m.

2. The following Subcommittee members were present:

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

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3. The designated federal employee attending was Gina Harrison, Staff Attorney, FCC Mass Media Bureau. Richard Wiley, Chair of the Advisory Committee on Advanced Television Service was also in attendance.

4. The minutes of the fourteenth meeting were adopted with one change.

5. Chairman Wiley recognized the ongoing accomplishments of the Implementation Subcommittee and welcomed Chairman Vradenburg to his new assignment as Co-Chair of the Subcommittee.

6. Chairman Wiley reported that despite persistent problems with the testing process and accompanying delays in the test schedule, the Advisory Committee continues to plan on submitting a final report to the Federal Communications Commission (the Commission) in September 1992. Chairman Wiley announced that the next Advisory Committee meeting would be held on March 24, 1992, at 2:00 p.m. in the Commission meeting room. At that time, the members will review the Advisory Committee's fifth (and presumably final) interim report. Thus, the subcommittees and their working parties should keep that date in mind in preparing their submissions for the fifth interim report. Chairman Wiley stated that the fifth interim report will, in effect, serve as the Advisory Committee's comments in response to the Commission's recent Notice of Proposed Rule Making.

7. Chairman Wiley described the schedule of events to follow the submission of the Advisory Committee's final report expected in September. The final report, if possible, will recommend a winning ATV proponent system, which would, in early 1993, undergo field testing in Charlotte, North Carolina. Chairman Wiley characterized the field tests as a validation, not a comparison, of the laboratory tests. Therefore, only the winning proponent system and

possibly the runner-up system would participate in the field testing. The Advisory Committee would, accordingly to Chairman Wiley, remain in existence long enough to prepare a supplement to its final report, reflecting the results of the field tests. The Public Broadcasting Service, would serve as manager of the field test program, subject to an oversight committee headed by Chairman Wiley, and with the Commission also overseeing the project.

8. Chairman Vradenburg asked that the Implementation Subcommittee working parties submit their interim reports to the Subcommittee Co-Chairs by January 15, 1992. This would allow time for the Co-Chairs to merge these documents into a single report for incorporation into the Advisory Committee's fifth interim report in time to comply with Chairman Wiley's plan to mail the fifth interim report to the Advisory Committee members by March 1, 1992.

9. Mr. Jackson summarized Working Party 1's activities. Although the group has not met since the last Subcommittee meeting in September 1991, the revised outline of the report on simulcasting was mailed out to active Working Party 1 members as well as other interested parties. That mailing also included a request for volunteers to work on composing the simulcasting report, but no volunteers came forward as a result of that request. Mr. Jackson remarked that prospective authors may be put off by the prospect of becoming identified with a position on a sensitive issue, which might eventually be in conflict with the position held by their sponsoring company. In that regard, Mr. Jackson and Chairman Vradenburg raised the issue of the cost to participating companies of implementing advanced television service. Mr. Jackson suggested that Working Party 1 research appropriate policy alternatives which the Commission might enact to reduce these implementation costs without sacrificing public interest concerns.

10. In response to a question from Ms. Harrison, Mr. Jackson indicated that the central issues to be reviewed are whether there are factors in the definition of simulcasting which vary the cost of implementing advanced television service, and whether there are alternatives which would reduce the financial burden on broadcasters while accommodating advanced television service implementation. Chairman Vradenburg stated that factors do exist within the definition of simulcasting, which might effect implementation costs, and said, for example, that a requirement for identical content might increase implementation costs. If a broadcaster has to produce everything in HDTV, in order to have built an HDTV facility, implementation costs would seemingly be higher, Chairman Vradenburg said. He indicated that the whole process of what it means to build an ATV facility inherently involves potential conversion cost issues. Mr. Jackson noted that any existing Commission rules which would unnecessarily increase the cost to broadcasters of implementing advanced television service should be revised. The specific scope of such a study, according to Mr. Jackson, should be determined by the ideas which come up from the working party members participating in the review.

11. Mr. Weiss indicated that surveys of broadcast group owners taken by Working Party 2 prior to the release of the Commission's Notice of Proposed

Rule Making, reflect that many of the respondents plan to stagger implementation of ATV service by their stations. This would spread out the owners' implementation costs. However, Mr. Weiss noted that the Commission's proposal to set a deadline by which ATV service must be implemented would hinder group owner's ability to stagger implementation costs. Mr. Weiss said that the study of the economic impact of this proposal might be a joint research project of the two Implementation Subcommittee working parties and Systems Subcommittee Working Party Working Party 3 (Economic Assessment).

12. Chairman Vradenburg suggested that professional and consumer equipment costs could be reduced by increasing the number of equipment suppliers, thus creating a more competitive environment and encouraging improved equipment quality and lower costs. Chairman Vradenburg added that such competition might be heightened by full, fair, and timely disclosure of the technical specifications of the transmission system. The greater and the more rapid the disclosure of such specifications, the faster equipment production will progress. Mr. Vradenburg further indicated that an open license policy, such as proposed in the Commission's Notice of Proposed Rule Making could be used to increase competition among equipment manufacturers and thus reduce implementation costs. Mr. Jackson noted that Working Party 1 issued a paper about a year and a half ago, on proprietary technical standards, which generally concluded that the proprietary standards issue is not as great a problem as originally thought. A major reason its importance was found to be less significant was that most of the "players" have already got cross license agreements.

13. It was noted that, although most of the manufacturers have cross licensing agreements, such is not always the case with ATV system proponents. A fear was also raised concerning whether, as happened in the Commission's proceeding on television stereo, proponents believe there is a "free-field" on patents, but a party belatedly surfaces with an invention that they claim bears on all of the proponents' technology, asking for high royalties, and adding to the costs. Chairman Vradenburg suggested that perhaps the Commission, as a condition of selecting a particular transmission scheme as single standard for broadcasting, could require those with patents that bear on that transmission scheme make them generally available on reasonable, non-discriminatory terms. He said that it was unlikely that the Commission had the authority to override the patent laws, but that the Commission, in dealing with proponents, might use discretion in persuading them to voluntarily support a reasonable, non-discriminatory licensing scheme.

14. Chairman Vradenburg identified another possible method of reducing implementation costs for broadcasters: establishment of a central pool of technical personnel to assist broadcasters in converting to ATV service. This would alleviate the potential shortage of personnel as reflected in the PERT charts of Implementation Subcommittee 2. However, Chairman Vradenburg said that such a pool might be more appropriately sponsored by the private sector rather than by the Commission.

15. Mr. Weiss recommended that, to help lower implementation costs, Implementation Subcommittee Working Party 1 prepare documentation opposing a requirement that broadcasters run full HDTV programming at all times or that mandates that broadcasters put material over their HDTV transmitters which fills the entire bandwidth. This would allow broadcasters to use less costly equipment which may not be HDTV but which is vastly improved over current equipment. Mr. Weiss reported that Implementation Subcommittee Working Party 2, Systems Subcommittee Working Party 3, the Society of Motion Picture and Television Engineers, and other organizations have been reviewing such alternatives which would use the 525 lines (employed today as a studio production standard) on an up-converted basis, but with wider bandwidth and internal digital transmission. Such an alternative would allow broadcasters to implement the ATV transmission standard more quickly and economically. Additionally, the benefits of the ATV transmission system are myriad even without changing what is used for production today, because, in the end, you would get a noise-free, ghost-free picture, not available from the current transmission systems.

16. Ms. Harrison asked why another channel would be necessary if 525 lines are used, and Mr. Weiss explained that the 525 line ATV transmission technique cannot be used on the existing channel because many of the existing problems inherent in NTSC transmission (such as noise and ghosts) would be retained. Chairman Vradenburg remarked that currently, it is assumed that conversion to HDTV will be staggered, with programming produced on film, which tends to be prime time programming, syndicated programming, or feature films, converted first to the full HDTV production standard because it would be relatively less expensive and easier to convert. Other types of programming, such as local news gathered with electronic news gathering (ENG) cameras, would be more expensive to convert to full HDTV and would be converted later.

17. Chairman Vradenburg said that broadcasters transmitting prime time programming produced on film in a new HDTV production mode and getting the full benefit of the new standard may simultaneously just have black holes for what might otherwise be local news. This could be remedied with an up-converted 525 line product which can take advantage of the transmission improvements associated with the simulcast channel but will not necessarily from the start take advantage of all the HDTV production capabilities. Chairman Vradenburg thus emphasized that while all programming from the moment HDTV is implemented does not necessarily have to utilize full HDTV, it is equally important to keep in mind the goal of converting everything to HDTV. He said that a scheme permitting a phased introduction of HDTV programming using the ATV transmission standard would reduce implementation costs and should thus be investigated. Chairman Wiley added that it would also be worth reviewing whether such alternatives would enhance or retard the introduction of HDTV.

18. Charles Heuer of Zenith commented that the operational costs, not just the implementation costs, should be of concern to broadcasters. He said that how these costs are to be supported depends largely on audience. Anything that accelerates product availability, anything that keeps a channel full,

regardless of whether it is wholly HDTV all the time, and anything that permits at least some broadcasters to come in later to a more established audience, will make the operating costs more palatable to broadcasters.

19. Mr. Jackson stressed the importance of implementation costs, and said that Working Party 1 would meet shortly to discuss how to proceed on the study.

20. Chairman Vradenburg said that another area which might warrant review by Working Party 1 relates to the potential delays in ATV implementation emerging from Working Party 2's research. Of particular note are delays in assignment of particular channels to existing broadcasters, and delays inherent in prospective litigation of the Commission's decision on an ATV standard. Working Party 1 might consider what short-term policies the Commission might adopt to shorten or eliminate such delays. For example, Chairman Vradenburg suggested the group might study: (1) whether the choice among various assignment schemes would impact on delays, so that assignments could be adopted at the same time as allotment schemes, thus eliminating one of the steps generating delays; (2) whether the output of the Report and Order resulting from the Commission's Notice of Proposed Rule Making, which may choose the assignment scheme that the FCC intends to adopt, can be the final Report and Order on that subject such that parties who feel aggrieved by the assignment scheme can litigate now rather waiting until after the Commission's Final Report and Order on ATV in 1993; and (3) whether the Commission should consider establishing a liaison now, with other regulatory agencies, both Federal and local, like the Federal Aviation Administration and local zoning bodies, to speed approvals necessary from these bodies in the future.

21. Also, Chairman Vradenburg suggested that Working Party 1 might want to look into whether there is any need for cable carriage rules with respect to the ATV service. If cable chooses, for some reason, to carry only the NTSC signal, not the ATV signal, implementation might be seriously hindered, said Chairman Vradenburg. Vice Chair Fox stated that the issue of cable carriage regulation was one the Commission needs to consider, but it is not a topic that the Subcommittee should try to reach a consensus on. Vice Chair Fox stated that she would oppose any effort to reach such a consensus. She added that the issues are very complex and will probably attract comment in the Commission's proceeding on ATV. Thus, it would be inappropriate for the Advisory Committee to recommend a position on a controversial policy issue. Chairman Vradenburg said that the Working Party may choose to detail two positions. However, Vice Chair Fox said that even that type of balanced portrayal might lead cable to have greater involvement in other issues that broadcasters might prefer that it not play a role in. Vice Chair Fox said that forcing cable systems to stop carriage of other services in order to carry broadcast service, raises serious issues of preferential distribution of HDTV by broadcast rather than cable. That, said Vice Chair Fox, is not an issue of promoting HDTV, but of which service gets carried. She said, for example, that it raises the question of whether only HDTV would trigger must carry rules to the exclusion of other services. These questions, Vice Chair Fox said, will be considered by the cable industry. Vice Chairman Baumann said that the issue was raised for

discussion, but does not need to be resolved at this meeting. Chairman Vradenburg directed that the subject of whether to do a study on cable regulation be raised at the Working Party 1 meeting and if a consensus is not reached, report that decision at the next Implementation Subcommittee meeting.

22. Chairman Vradenburg next recommended that Working Party 1 look into whether ATV should be advertising supported or whether it should be encrypted and subscription supported.

23. Mr. Heuer asked whether Working Party 1 has a broad enough membership, representing the appropriate interests, to fairly discuss the questions raised in the meeting. Chairman Vradenburg said that the issues raised for Working Party 1 to consider fall under that group's jurisdiction, and that working party meetings are open to anyone who wants to participate. Chairman Vradenburg asked that, in order to ensure that those interested have a chance to attend the next Working Party 1 meeting, Mr. Jackson make available, to as many people as possible as quickly as possible, both the meeting date and the agenda.

24. Mr. Bingham introduced Mr. Weiss to report on Working Party 2's activities. He divided the report into 4 parts: (1) preparation for proponent meetings; (2) a preliminary report which is being forwarded today to the Implementation Subcommittee for wider distribution; (3) the impact of assumptions on timelines; and (4) dissemination of technical information.

25. The meetings with proponents would be two series of meetings, the first a joint meeting to familiarize the proponents with the Committee's work to date, and to go over the PERT chart and Gantt charts. There would be an opportunity for questions and the proponents will be given a list of issues on which the Working Party is seeking input. The followup meeting will be with each individual proponent to present their responses to the issues list, and to determine whether the PERT charts, Gantt charts and assumptions so far can remain generic in nature or whether they should be made system specific. Mr. Weiss reviewed progress on the PERT networks and timelines. (The charts he used to illustrate his presentation are attached to these minutes.) The first meeting, which has been delayed in order to produce the above-mentioned preliminary report, is now scheduled for mid-January 1992. The group has been meeting on close to a monthly basis and have been making preparations for these meetings.

26. Copies of the preliminary report were distributed, and are attached to these minutes. The report was developed to assist the Commission in reaching its decisions, and to help other working parties involved in some of the same efforts. Further, it will help avoid working parties' reaching conflicting conclusions. The preliminary report grew from the concerns expressed at the last Implementation Subcommittee meeting, and reflects some of the information relayed at that meeting. Because the preliminary report was finalized after adoption of the Commission's Notice of Proposed Rule Making, it does not respond to some of the issues raised in that document. One of the

conclusions reached in the preliminary report is that, assuming a staggered implementation approach by group owners, stations currently do have enough manpower to achieve "pass through." Thus, it cannot yet be determined if the same would hold true under a tighter timeframe such as that prescribed in the Notice of Proposed Rule Making.

27. Working Party 2, in response to the concerns expressed at the last Subcommittee meeting, used some new assumptions to determine potential minimum times for tasks. For example, governmental approval time is now assumed at a minimum of 90 days per approval, rather than at typical or anticipated processing times. Also, the Working Party now assumes no litigation and that channel assignment would occur with the Commission's Final Report and Order (Order), and not a year after the Order is released as earlier anticipated. Also included are the more likely time expectations.

28. Mr. Weiss spoke on the impact of assumptions. He said that, although at the last Subcommittee meeting, the PERT charts dominated the discussion, the real impact of the assumptions can be seen in the Gantt charts. Thus, only the Gantt charts were discussed at today's meeting. Mr. Weiss stressed that the intent of Working Party 2 is to mitigate the effect of impediments to ATV implementation. Such impediments must first be located and then resolved. One approach to mitigating impediments was to identify the potential for lengthy implementation times in major cities and get the engineers in those cities started on resolving such problems. The previous assumptions were used to demonstrate the impact of these impediments on implementation time. These assumptions were based on typical times without benefit of the incentives for speeding ATV implementation contained in the Commission's Notice of Proposed Rule Making. Comparing the previous assumptions with the new assumptions as described above, the effect of assumptions on implementation time is apparent. Charts reflecting both the previous (marked typical) and the revised (marked minimum) assumptions are attached to these minutes. The on-air date based on the new assumptions is 1995, as opposed to 1999 based on the typical assumptions. Mr. Weiss again stressed that these estimated dates using both set of assumptions are only examples. Mr. Weiss said that given the revised assumptions and with proper planning, many stations can meet the Commission's proposed schedule for ATV implementation.

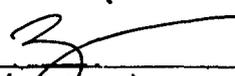
29. Mr. Weiss, in introducing the topic of dissemination of technical information, stressed that design work cannot begin without adequate technical information. He said that proponents have not been forthcoming with such information for fear of undercutting their competitive and patent positions. Working Party 2 assumes that technical information will be available by the time of the release of a Commission Notice of Proposed Rule Making recommending an ATV system. Dissemination of such information affects not only consumer equipment, but broadcast and cable equipment as well. Mr. Weiss said that preliminary design concepts can be drawn without such information, but the technical data is needed to really know what the proponents are offering. Thus, to mitigate the effect of the requirement for information, there is a need for a head start. Two topics for Working Party 1 to investigate,

suggested by Working Party 2, and whether the FCC can provide advance notice of its system decision, and whether there are other mechanisms for getting such a head start. Joe Donahue of Thomson Consumer Electronics, asked who would be writing the working specifications because the proponents will not be able to do so by themselves. Mr. Weiss responded that the issue should be decided by the Joint Committee for Intersociety Coordination (JCIC). Mr. Donahue said that equipment manufacturers would have to be involved in such a decision.

30. Mr. Heuer said that there are two issues: (1) information contained in the Commission's Rules; and (2) information needed to build a product. He added that unlike in the past, when the rules helped design the product, the rules in this case will not detail how to design the inner workings of the system, for example. He said that the specifications may be incorporated into the rules by reference, but that there was an issue as to what belonged as a standard and what belonged as a technical description. Ms. Harrison added that the Commission would want to avoid writing a standard so rigid it precludes creativity. Chairman Vradenburg assigned Mr. Weiss to review the issue of who writes the specifications. Chairman Vradenburg also asked that Mr. Weiss approach the three networks about the availability of pass through programming. Mr. Weiss suggested a mail survey of networks, as well as syndicators and producers.

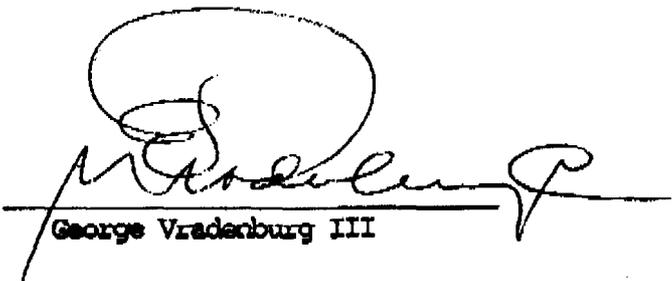
31. Chairman Vradenburg announced that the next Implementation Subcommittee meeting will be held on Tuesday, January 28, 1992, at 10:30 a.m. in the Commission Meeting Room.

Submitted:



Gina Harrison

Approved:



George Vradenburg III

ATV Advisory Committee

MEETING: Implementation Subcommittee - November 19, 1991

ATTENDEES

<u>Name</u>	<u>Representing</u>	<u>Phone Number</u>
C. HEUER	ZENITH	708 391 8331 W.
Ken Skinner	NAPC	914 945 6088(W)
Ray Lowe	DSRC	609 734 2568
Quincy Rojas	GIC	202-833-9700
Gene Mann	FCC	202 632 7792
George Vradenburg	FOX	213 203 1334
Chuck Jackson	Neva	202-466-9
Dick Wiley	ACATS	202 466-3510 202-429-7010
William Hassinger	FCC	(202)632-6460
Gordon Godfrey	FCC	(202)632-9660
MARISSA FRIEDMAN	FCC week	703-685-4100
Jayne Rouse	Hughes Aircraft	703-284-4212
D. N. WALKER	MOTOROLA	202 371 6947
Joe Donahue	Thomson Consumer Electronics	202-872-0670

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

November 19, 1991

- 1. Preparation for Proponent Meetings**
- 2. Preliminary Report of IS/WP-2**
- 3. Impact of Assumptions on Timelines**
- 4. Dissemination of Technical Information**

Preparation for Proponent Meetings

- **Meetings with Proponents to Gain Their Inputs**
 - **Joint meeting with all proponents**
 - **Familiarization with committee's work to date**
 - **Presentations by IS/WP-2 by industry segment**
 - PERT charts
 - Gantt charts
 - Assumptions
 - Issues lists
 - **Opportunity for questions from proponents**
 - **Period for proponent analysis**
 - **IS/WP-2 meeting for additional proponent support**
 - **Followup meeting for proponent response & comment**
 - **One-at-a-time with each proponent**
 - **System-specific differences in PERT/Gantt/Assumptions**
 - **System-specific issues responses**
 - **Opportunity for questions from IS/WP-2**

Preparation for Proponent Meetings - *cont'd.*

- **Further delayed by decision to produce preliminary report**
 - **Now planned for IS/WP-2 Meeting in Mid-January, 1992**
 - **Invitations likely issued following 11/19/91 meeting**
 - **Additional meeting on 12/17/91 to prepare**

- **Preparations undertaken**
 - **Full review of all materials to be presented**
 - **13 pairs of PERT/Gantt charts**

Covering 5 industry segments
 - **Supporting assumptions for tasks & milestones**
 - **Generic to HDTV**

 - **Development of issues to be raised with proponents**

Preliminary Report of IS/WP-2

- **Indications from other Working Parties & FCC staff**
 - Data developed by IS/WP-2 would be helpful to their work
 - Delaying availability would slow down their efforts
 - Coherence between work of various groups is important
 - PS/WP-5
 - SS/WP-3
 - IS/WP-2
- **Developed following last Implementation Subcommittee meeting**
 - Includes inputs from that meeting
 - Addresses concerns raised
 - Finalized at IS/WP-2 meeting on 10/16/91
- **Provides overview of IS/WP-2 results in several areas**
 - Data useful for determining ability of stations to implement to proposed FCC schedule
 - General availability of consumer receivers
 - Preliminary conclusions on manpower to achieve "pass through" provided stations can stagger implementation

Preliminary Report of IS/WP-2 - cont'd.

- **Uses new assumptions to determine potential minimum times for tasks**
 - **Takes governmental approvals times to minimal 90 days each**
 - **Assumes no litigation**
 - **Assumes channel assignment with final Report & Order**
 - **More likely typical expectations also included**
 - **Points to impact of durations of many governmental approvals**
 - **Covered in more detail in next section on Impact of Assumptions**

- **Identifies new issue - Dissemination of Technical Information**
 - **Important to both consumer & broadcast equipment availability**
 - **Covered in more detail in later section**

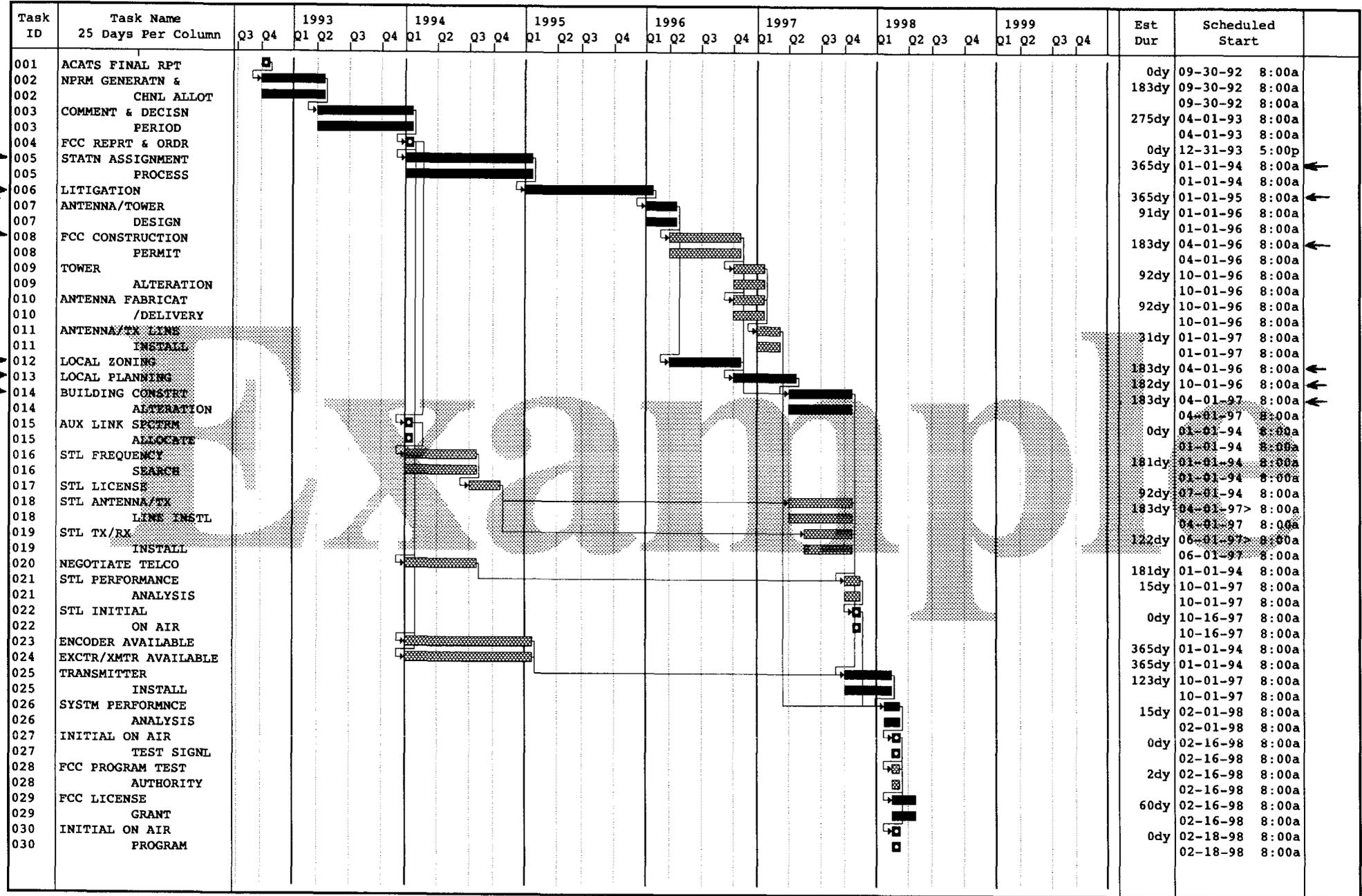
Impact of Assumptions

- **Report at last IS meeting intended to demonstrate impact of assumptions**
 - **Most of report spent on PERT charts to brief new participants**
 - **Real impact of assumptions seen in Gantt charts**
 - **Today's report uses Gantt charts only**
- **Intent of IS/WP-2 is to mitigate effects of impediments to implementation**
 - **Pro-active efforts of Local Area Groups in five large cities**
 - **Calling attention to potential impediments that can be abated**
 - **Suggesting approaches that will minimize time to implementation**

Impact of Assumptions - cont'd. (1)

- **Assumptions previously made about tasks to demonstrate their impact**
 - Station assignment assumed to be after final Report & Order
 - Time allowed for litigation based on prior experience
 - Local governmental approvals at typical processing times
 - Federal government approvals at anticipated processing times
 - Land acquisition at typical time
- **New assumptions for minimum implementation times**
 - Station assignment assumed to be coincident with final Order
 - No time allowed for litigation
 - Local governmental approvals assumed to be routine, 90 days
 - Federal government approvals assumed to be routine, 90 days
 - Land acquisition shown at reduced time
- **Comparison identifies tasks that significantly impact implementation time**
- **Several examples shown in comparative Gantt charts**

XMTR: SIMULCAST W/EXISTING TOWER - SCENARIO 2 - TYPICAL



— Unassigned — Interrupted ▨ Noncritical ■ Critical ■ Milestone

XMTR: SIMULCAST W/EXISTING TOWER - SCENARIO 2 - MINIMUM

Task ID	Task Name 25 Days Per Column	1993				1994				1995				1996				1997				1998				1999				Est Dur	Scheduled Start	
		Q3	Q4	Q1	Q2	Q3	Q4																									
001	ACATS FINAL RPT																										0dy	09-30-92	8:00a			
002	NPRM GENERATN & CHNL ALLOT																										183dy	09-30-92	8:00a			
003	COMMENT & DECISN PERIOD																										275dy	09-30-92	8:00a			
004	FCC REPRT & ORDR																											04-01-93	8:00a			
005	STATN ASSIGNMENT																											04-01-93	8:00a			
006	PROCESS																											12-31-93	5:00p			
007	LITIGATION																											01-01-94	8:00a			
008	ANTENNA/TOWER DESIGN																											01-01-94	8:00a			
009	FCC CONSTRUCTION PERMIT																											01-01-94	8:00a			
010	TOWER ALTERATION																											04-01-94	8:00a			
011	ANTENNA FABRICAT /DELIVERY																											07-01-94	8:00a			
012	ANTENNA/TX LINE INSTALL																											07-01-94	8:00a			
013	LOCAL ZONING																											10-01-94	8:00a			
014	LOCAL PLANNING																											10-01-94	8:00a			
015	BUILDING CONSTRT																											07-01-94	8:00a			
016	ALTERATION																											10-01-94	8:00a			
017	AUX LINK SPECTRM ALLOCATE																											01-01-94	8:00a			
018	STL FREQUENCY SEARCH																											01-01-94	8:00a			
019	STL LICENSE																											01-01-94	8:00a			
020	STL ANTENNA/TX LINE INSTL																											01-01-94	8:00a			
021	STL TX/RX INSTALL																											01-01-94	8:00a			
022	NEGOTIATE TELCO																											10-01-94	8:00a			
023	STL PERFORMANCE ANALYSIS																											01-01-94	8:00a			
024	STL INITIAL ON AIR																											04-17-95	8:00a			
025	ENCODER AVAILABLE																											04-17-95	8:00a			
026	EXCTR/XMTR AVAILABLE																											01-01-94	8:00a			
027	TRANSMITTER INSTALL																											01-01-95	8:00a			
028	SYSTEM PERFORMNCE ANALYSIS																											01-01-95	8:00a			
029	INITIAL ON AIR TEST SIGNL																											05-04-95	8:00a			
030	FCC PROGRAM TEST AUTHORITY																											05-04-95	8:00a			
031	FCC LICENSE GRANT																											05-19-95	8:00a			
032	INITIAL ON AIR PROGRAM																											05-19-95	8:00a			

— Unassigned — Interrupted ▨ Noncritical ■ Critical ■ Milestone

XMTR: SIMULCST W/NEW TOWER REQUIRD - SCENARIO 3 - TYPICAL



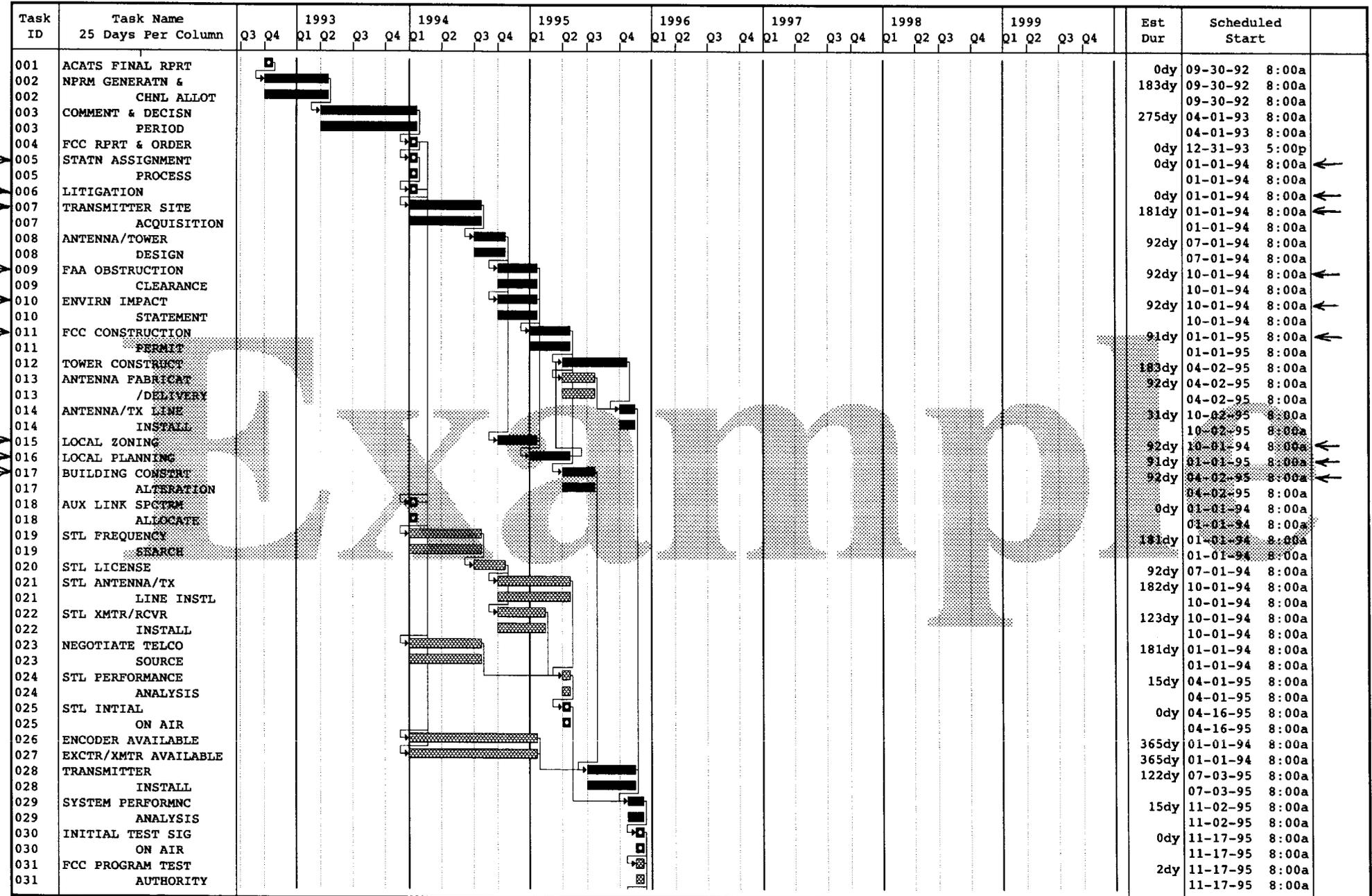
— Unassigned — Interrupted ▨ Noncritical ■ Critical ■ Milestone

XMTR: SIMULCAST W/NEW TOWER REQUIRED - SCENARIO 3 - TYPICAL

Task ID	Task Name 25 Days Per Column	1993		1994				1995				1996				1997				1998				1999				Est Dur	Scheduled Start	
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
032	FCC LICENSE																									31dy	07-16-99	8:00a		
032	GRANT																										07-16-99	8:00a		
033	INITIAL ON AIR																									0dy	07-18-99	8:00a		
033	PROGRAM																									07-18-99	8:00a			

Example

XMTR: SIMULCST W/NEW TOWER REQUIRD - SCENRIO 3 - MINIMUM



— Unassigned — Interrupted ▨ Noncritical ■ Critical ■ Milestone

XMTR: SIMULCST W/NEW TOWER REQUIRD - SCENARIO 3 - MINIMUM

Task ID	Task Name 25 Days Per Column	1993		1994				1995				1996				1997				1998				1999				Est Dur	Scheduled Start
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
032	FCC LICENSE																										31dy	11-17-95 8:00a	
032	GRANT																											11-17-95 8:00a	
033	INITIAL ON AIR																										0dy	11-19-95 8:00a	
033	PROGRAM																											11-19-95 8:00a	

Example

Impact of Assumptions - cont'd. (2)

- **Handling of tasks with significant time impact**
 - **Target for reduction**
 - **For tasks that cannot be shortened, instigate early start**

- **Targets for reduced implementation times**
 - **FCC channel assignment to stations**
 - **Avoiding approaches that permit more opportunity for litigation**
 - **FAA obstruction clearances for new towers**
 - **FCC construction permits**

- **Targets for instigating head start**
 - **Land acquisition**
 - **Local governmental approvals**

- **Many stations can meet proposed FCC timetable with proper planning**

Dissemination of Technical Information

- **Newly identified issue**
 - **Design work cannot begin without adequate technical information**
 - **Data provided through SS/WP-1 is inadequate for product design**
 - **Sufficient only for deciding certification & required testing**
 - **Design requires data not now being released by proponents**

**Not requested and/or not developed in releasable form
Protecting competitive/patent positions**

- **Assumption is data published at time of NPRM with system selection**
- **Affects both consumer and broadcast/cable equipment availability**
 - **Consumer acceptance requires general product availability,
not just one manufacturer - per PS/WP-5**

**Receiver manufacturers estimate time from technical data to
product introduction to be 3½ years using either chip
sets or ground-up design
Selected proponent may have small advantage of ½-1 year**

Dissemination of Technical Information - cont'd. (1)

- **Broadcast/cable equipment required for program delivery**

Initial units likely derivative of demonstration hardware

**Larger/more expensive than required
for real production hardware**

Only possible for small quantity - first few stations

**Reasonable size/price equipment likely to take as long
as consumer equipment**

**All proponents concentrate system complexity
in encoder/transmitter rather than receiver**