

ORIGINAL

IS/WP2-0160
6 DEC 91

**ADVISORY COMMITTEE ON ADVANCED TELEVISIONS SERVICE
IMPLEMENTATION SUBCOMMITTEE
WORKING PARTY 2 - TRANSITION SCENARIOS
MINUTES OF THIRTY-SECOND MEETING 11/19/91**

RECEIVED

DEC 11 1991

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

1. The meeting was called to order by Acting Chairman, Merrill Weiss, at 1:00 P.M. at the NCTA Building in Washington, D.C.

2. A list of attendees is attached.

3. The agenda was approved with the following additions:

3a) Review of items not covered at 10/16 meeting

3b) Comments on preliminary summary report

4a) Preparation of 5th Interim Report

4b) Preparation of cover letter for consumer manufacturers survey

5a) Impact of digital compression on cable

5b) HDTV ready television

4. The minutes of the 10/16/91 meeting were approved with the following changes:

Page 1 - change minute issue date to 25 Oct 91.

Item 6, page 2, paragraph 1 - Change to read "The report makes some new assumptions that 1) 90 days is required for each governmental of uncontested channel assignments. Also included in the report was information based upon the original PERT charts and assumptions".

5. Review of 10/16/91 action items:

a) Complete. Report was submitted on 11/19/91.

b) Carry as an action item.

c) Carry as an action item.

d) Carry as an action item, but defer until after Proponent Meetings.

e) Update presented under Agenda item 5 - carry as action item.

- f) Merrill Weiss reported that the project planning software can do a best possible and most likely analysis. It was decided that adding this analysis to the PERT networks is too cumbersome at this time, but such an analysis may be considered in the future for some critical path tasks.
- g) Larry Cochran reported that there would be no significant difference in general consumer product availability whether IC's were developed or purchased. An exception to this may occur if the selected Proponent is a consumer electronics manufacturer. This conclusion was accepted after considerable discussion.
- h) Complete. Will be covered under agenda item 5.

6. Information for PS/WP4 Alternative Media Technology

Merrill Weiss stated that he has provided PS/WP4 with some WP2 background documents to assist them in their study of interoperability and extensibility with regards to advanced video systems. Attachment IS/WP2-0156.

7. Comments on Summary Report on Implementation Issues.

Bill Zou expressed a concern that some of the media reports concerning WP2 surveys did not accurately reflect Working Party conclusions. Merrill Weiss stated that these reports resulted from his September Implementation Subcommittee Report and were taken out of context. Merrill also stated that the manner in which information is reported to the Implementation Subcommittee has been discussed extensively, both within the Implementation Subcommittee and Working Party 2.

George Vrandenburg suggested that any future distribution of the Summary Report on Implementation Issues also include Merrill's 11/19/91 report to the Implementation Subcommittee. This suggestion was adopted.

8. Review of 11/19/91 Implementation Subcommittee Report

Merrill Weiss distributed copies of the report he gave at the 11/19/91 Implementation Subcommittee Meeting. IS/WP2-0157. Merrill stated that WP2 received two new tasks at this meeting.

TASK I: Look further into the dissemination of technical information.

- a) responsible organization
- b) structure of the document

Charles Heuer suggested that SS/WP4 may be a better place to deal with the structure of the technical information. Merrill Weiss will discuss the involvement of SS/WP4 and ATSC with Bob Hopkins. Gina Harrison also suggested that this issue be discussed with someone at the FCC OET. Merrill will also make this contact.

TASK II: Consider a survey of networks, producers and syndicators to determine development plans for HDTV software. Merrill stated that to date WP2 has concentrated on facilities development only. Art Allison volunteered to structure a survey. Merrill Weiss and Art Allison will contact network representatives to help structure questions for the survey. George Vrandenburg will supply a survey distribution list.

9. Fifth Interim Report

Merrill Weiss stated that WP2 needs to submit its contribution to the Implementation Subcommittee Fifth Interim Report by January 17, 1992. Peter Bingham will structure an outline of the report with assistance from Ken Skinner and Caaj Greebe. A conference call was scheduled for December 6, 1991 at 10:00 AM to review the outline. The first draft will be reviewed at the December 17, 1991 WP2 meeting.

10. Preparation of Cover Letter for Consumer Electronics Manufacturers

During the November 1, 1991 WP2 conference call, it was decided to survey additional consumer electronics manufacturers on their views of the WP2 PERT network and assumptions. This survey will be attached to an already planned EIA survey of consumer electronics manufacturers scheduled for late November. Ken Skinner drafted a cover letter for this survey and it was reviewed by Charles Heuer and Larry Cochran. IS/WP2-0158.

11. ATV Ready Television Receivers

Peter Bingham suggested that a possible means for making the transition to ATV would be to adopt a single scanning standard so that new television receivers could be used as HDTV monitors during the transition. Peter stated that such a strategy would stimulate high end television sales since those receivers would no longer face obsolescence. Charles Heuer stated that, even though it was true that each of the proposed systems could be operated at different scanning frequencies, it would likely involve system compromises greater that would be accepted by the Proponents. A considerable amount of discussion followed on this topic.

12. PERT Network and Assumption Updates

Merrill Weiss distributed copies of the Consumer PERT and Gantt charts that have been converted to the CA Superproject format. IS/WP2-0159. Larry Cochran stated that the only change to the PERT network flow is the availability of technical information at the time of NPRM. Larry also distributed copies of the updated Consumer PERT assumptions. IS/WP2-0139.

Roger Pience reviewed updated cable PERT assumptions. IS/WP2-0161. Considerable discussion took place with respect to the use of compression on cable systems. The assumptions as revised during the meeting will be included with the minutes of the next meeting.

13. Proponent Meeting Plans

January 13, 1992 was chosen for a meeting with Proponents to review PERT networks and

assumptions. Each proponent will be sent a package of PERT networks and assumptions along with a cover letter explaining the purpose for the meeting. An attempt will be made to have the final package ready for review at the December 17, 1991 WP2 meeting.

14. Local Area Problem Solving Groups

No new information was available.

15. Digital Broadcast/Production Facility

This agenda item was not discussed due to insufficient time.

16. Summary of Action Items

- a) Identify PERT network resource requirements and determine total resources required to implement PERT network tasks - Merrill Weiss
- b) Determine impact on broadcast PERT implementation assuming typical staff limitations of small, medium and large stations - Merrill Weiss
- c) Contact SS/WP4, ATSC and FCC-OET concerning dissemination of system technical information - Merrill Weiss
- d) Prepare survey structure for obtaining ATV software development plans from networks, producers and syndicators - Art Allison
- e) Solicit suggestions from networks on questions for software development survey - Merrill Weiss/Art Allison
- f) Prepare suggested distribution list for software development survey - George Vrandenburg
- g) Prepare outline for Fifth Interim Report - Peter Bingham

17. The next meeting is scheduled as follows:

**IS/WP2 Transition Scenarios
Tuesday, December 17, 1991
10:15 A.M. - 6:00 P.M.
PBS Building
1320 Braddock Road
Alexandria, VA**

A meeting was also scheduled for January 13, 1992.

The meeting was adjourned at 5:20 P.M.

TRANSITION SCENARIOS

WP-2

November 19, 1991

| NAME | COMPANY | ADDRESS | PHONE |
|-------------------|------------|--|--|
| LARRY COCHRAN | THOMSON | 600 N. SHERMAN DR. INDCS 120 96101 | 317-231-4226 (FAX) 317-267-5446 |
| RAY LOWE | DSRC | 201 WASHINGTON RD. RALEIGH, NC | (609) 734-2568 |
| Ken Skinner | NARC | 345 Scarborough Rd. Sparrcliff Manor, NY | (914) 945-6084 |
| PIFF SINGHANI | | | 914-5-6117 |
| S. Merrill Weiss | Consultant | 25 Mulberry Lane - Edison, NJ | 800-20-2908 (908) 906-0907 |
| William Zou | PBS | 1320 Bradlock Pl. Alexandria, VA | 2031739-5475 |
| ART ALANSON | Consultant | 700 English Knolls Dr. Sparks, MD | 20862 (301) 774 4536 |
| Gina Harrison | FCC | 2025 M St NW | Km 6002 WDC 20551 202 652 7792 |
| WINGS FOLEY | GIC | 1899 L St, NW | #500 DC 20036 202/833 9700 |
| Roger Pience | NCTA | 1724 Massachusetts | WDC 20036 202/775-3637 |
| CHARLES HEUER | FENITEK | 1000 N. WASHINGTON AVE | GLENNVIEW 708/341-5531 W ILL G0022 708/551-2622 |
| George Vradenburg | FOX | P.O. Box 700 Beverly Hills | Calif 90213 213/203-1334 |

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

**November 19, 1991
12:00 P.M. - 5:00 P.M.
NCTA Building
1724 Massachusetts Avenue, N.W.
Washington, DC**

AGENDA

- 1. Adoption of Agenda.**
- 2. Approval of 10/16/91 Minutes.**
- 3. Review of Action Items from 10/16/91 Meeting.**
- 4. Review Implementation Subcommittee Proceedings.**
- 5. Review PERT Network Assumptions and Updates.**
- 6. Review Plans for Proponent Meeting.**
- 7. Status Report on Local Area Problem Solving Groups.**
- 8. Digital Broadcast/Production Facility Proposal.**
- 9. New Business.**
- 10. Conclusions and Action Items.**
- 11. Next Meeting.**

IS/WP2-0156
19 NOV 91

25 Mulberry Lane
Edison, NJ 08820-2908
(908) 906-0907

S. Merrill Weiss

Consultant in Electronic Media Technology/Management

October 16, 1991

Mr. Robert L. Sanderson
Image Telecommunications Center
Eastman Kodak Company
1447 St. Paul Street
Building 12 Hawk-Eye
Rochester, NY 14653-7107

Dear Bob:

As we discussed on the phone yesterday, I am forwarding to you copies of some materials supplied to IS/WP-2 by participants from the telephone industry. In particular, enclosed are a monograph on SONET, a chart giving SONET data rates, a PERT chart for the implementation of data rates not currently in service, and some correspondence, all courtesy of Nynex. This material may be of some use in PS/WP-4 in the new work you are undertaking regarding the harmonization of the various industry segments with regard to digital systems and techniques.

As I explained, Implementation Subcommittee Working Party 2 on Transition Scenarios is directing its efforts to identifying the steps required to make the transition, recognizing the impediments to accomplishing those tasks, and finding means to overcome the limitations. It is also working to calculate the times required to complete the various efforts and to determine the resources required for their achievement. This ties in with the goal of overcoming obstacles to implementation.

IS/WP-2 has not gotten into the technical analysis of the proposed systems except as necessary to differentiate their expected implementations. This differentiation will be moved forward considerably through a series of meetings the Working Party is planning with the proponents in the near future. The meetings will be handled by participants from the several industry sectors represented in IS/WP-2's work and will be concerned with the application of the PERT and Gantt charts already developed in generic form to the specific proposed systems.

Since you seem to be in need of technical information regarding the proposed systems, I do not believe that we will be a great source for you. If there is anything at all else that we can do, however, to aid you in your work, please do call upon us.

Very truly yours,



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

cc: J. Tietjen/SRI

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**

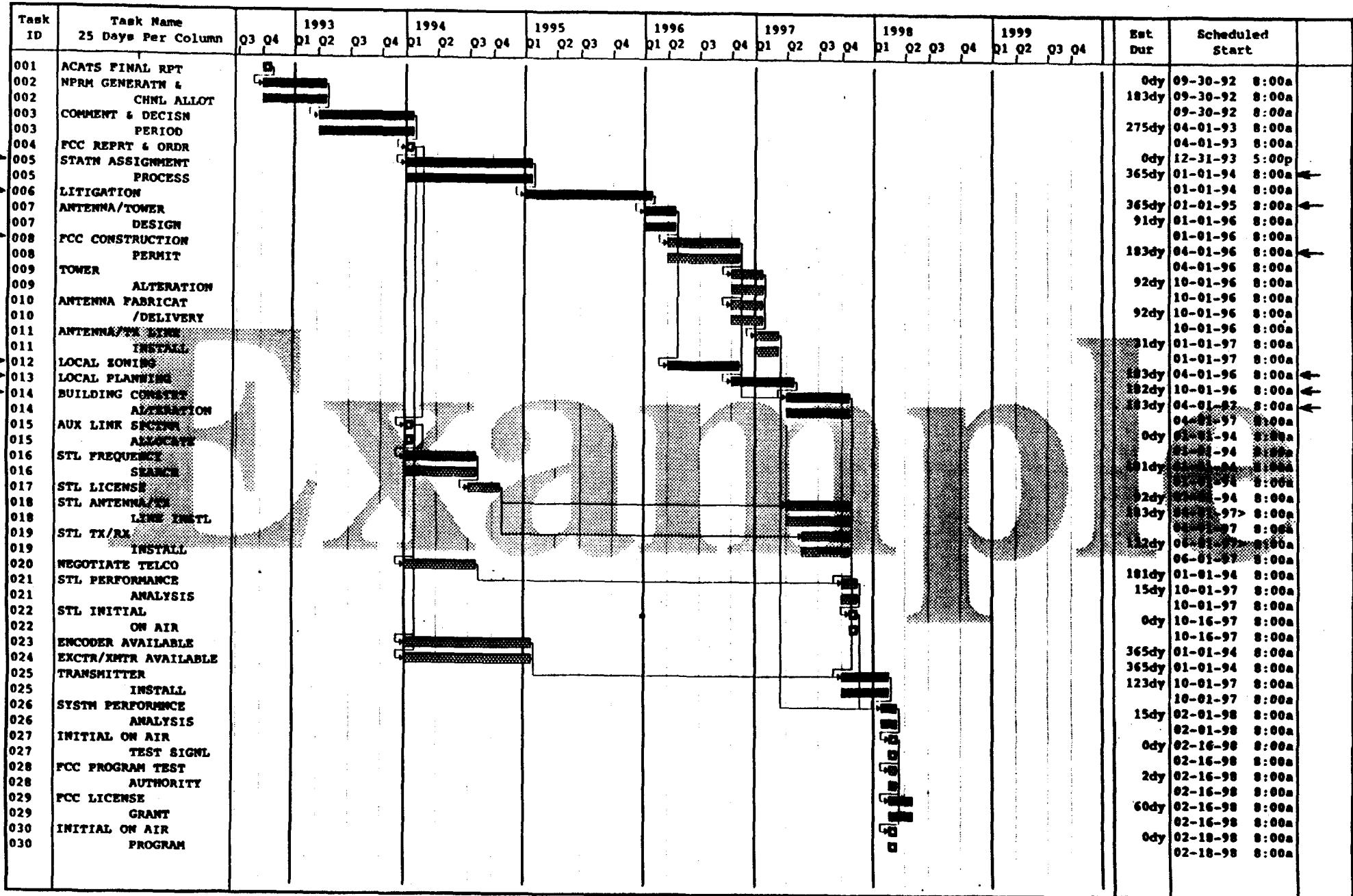
- **Several examples shown in comparative Gantt charts**

XMTM: SIMULCAST W/NEW TOWER REQUIRED - 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 | |

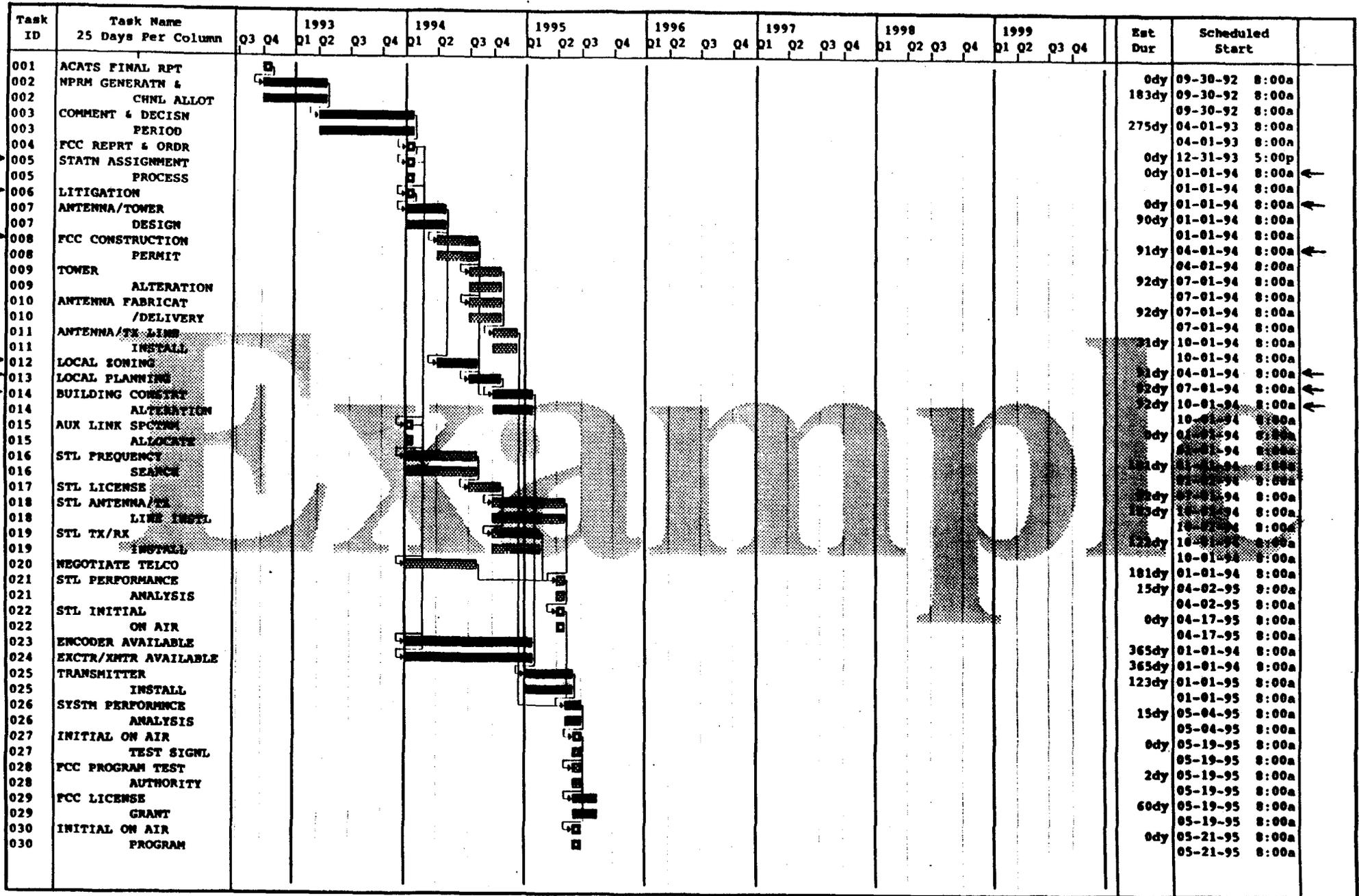
Example

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



— Unassigned — Interrupted [] Noncritical [] Critical [] Milestone

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



— Unassigned — Interrupted ■ Noncritical ■ Critical ■ Milestone

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**

Dissemination of Technical Information - cont'd. (2)

- **Approach needed to mitigate impact**
 - **No readily apparent means to shorten work effort**
 - **Availability of all equipment depends on quality documentation**
 - **Not likely without indication of system selection**
 - **Same personnel needed to prepare documentation as are developing system designs/demonstration hardware**
 - **Major investment by proponents**
 - **Necessary documentation involves release of proprietary information**
 - **Technical support of others by selected proponent probably needed**
 - **Not all proponents may be equally qualified for this task**

- **Head start on development & release of required documentation is possible solution**
 - **Possible topics for IS/WP-1 investigation:**
 - **Can FCC provide advance notice of its system decision?**
 - **Are there other mechanisms for getting a head start?**

Summary

- **IS/WP-2 taking pro-active approach to problem-solving**
- **FCC proposed timetable can be met by many stations**
- **Personnel available for stations to reach pass-through stage**
- **Dissemination of Technical Information is new issue identified**
- **Proponent meetings planned for Mid-January, 1992**

REPORT OF IS/WP-2: STUDY RESULTS AND PRELIMINARY CONCLUSIONS

As part of its work in producing Implementation Plans for Advanced Television, IS/WP-2 has developed significant information that can be of substantial use to the FCC and to other parts of the Advisory Committee while IS/WP-2 is completing its work. The information derives from a series of surveys and studies conducted to date by the Working Party. This report provides the highlights of that data in the hope that others will find it both important and helpful. Note that this report and the data that supports it were developed prior to an FCC rulemaking on implementation issues anticipated to be released on 10/24/91.

The Working Party has identified the tasks required for implementation by all industry segments. With the participation of experts from each industry segment, it has determined the time required for completion of each of these tasks. From this data, it has constructed a series of PERT networks and timelines showing the overall process and timing for completion of the transition to HDTV.

IS/WP-2 has surveyed the owners of all station groups having 3 or more stations and some additional groups with 2 stations (107 in all), seeking their expectations for implementation of HDTV transmission and looking at the problems they will face. It has surveyed the chief engineers of approximately 100 stations, looking at the resources each has and will require to carry out the implementation. It has also instigated discussions among the television stations in some of the larger markets both to understand the problems they may face and to give them a head start in addressing them. The results of some of this work underlie the data reported herein.

Both CBS and PBS have provided input on their expectations for a transition to HDTV, and their results have been incorporated into the Working Party's output. IS/WP-2 has become cognizant of the work done by PS/WP-5 in projecting the penetration of HDTV among the viewing public. This report attempts to bring coherence to these several efforts, all of which concern the relationship between the HDTV transition and time.

Station Conversion Will Be Time Phased

Because of limited resources, both capital and personnel, group owners intend to stagger the conversion of their stations. A similar approach, in which increasing numbers of stations started the transition process in succeeding years, was adopted in the CBS study. As in the CBS study, the owners plan to start with the stations in the largest markets first, moving later to the smaller markets.

Many television station owners anticipate a relatively early start of conversion to HDTV simulcast operation. Of the 61 respondents to date, representing 260 stations in their responses, 42 groups expect to start conversion of their first station within years 1, 2, and 3 following the final FCC decision on a system. They further indicate that half of the stations covered by the survey responses will start their conversions within those three years. On average, owners expect to take 1½ to 2 years after start to reach the stage of being able to "pass through" the network or equivalent syndicated programming. Completion times for full conversion to HDTV