

Figure 1.3-1 Computer Course Receiver Spec. Subtask Dependency Chart

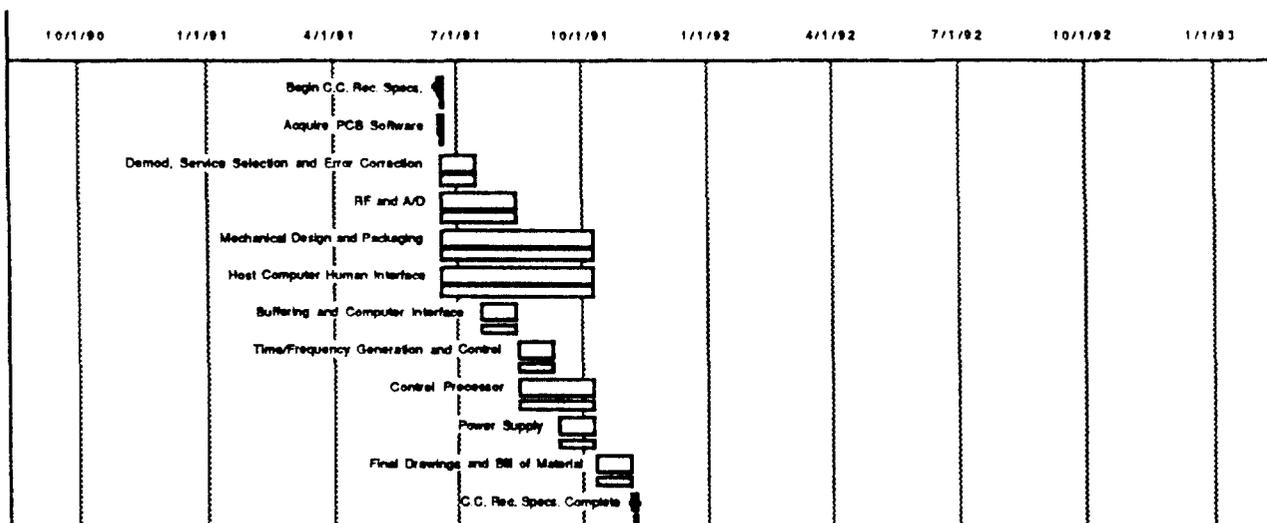


Figure 1.3-2 Computer Course Receiver Spec. Subtask Schedule Chart

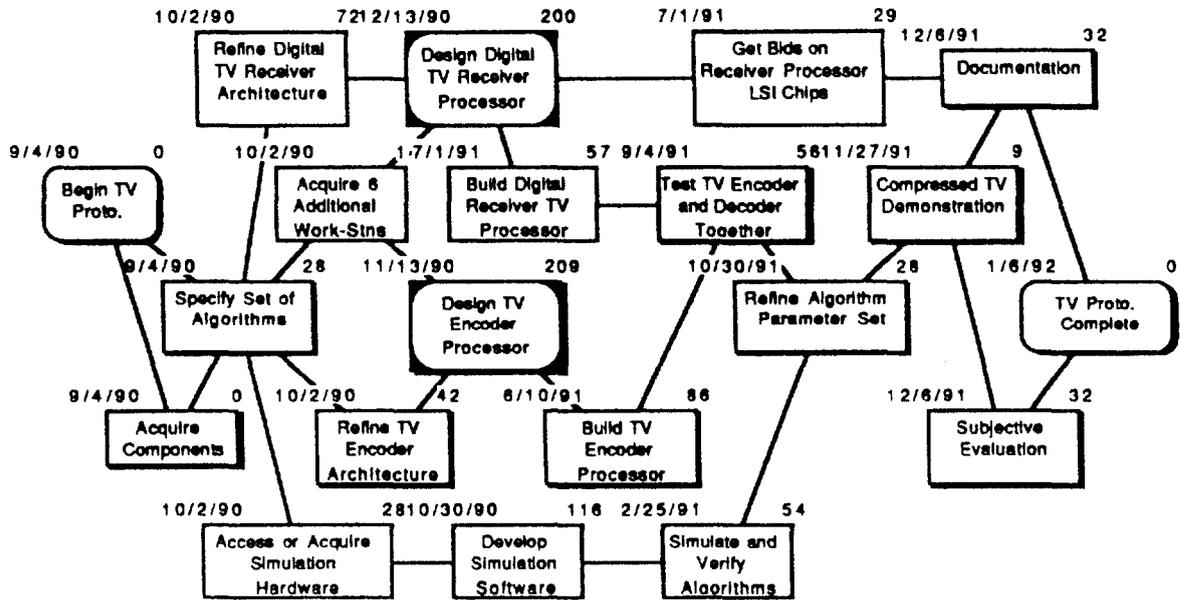


Figure 1.4-1 TV Prototype Subtask Dependency Chart

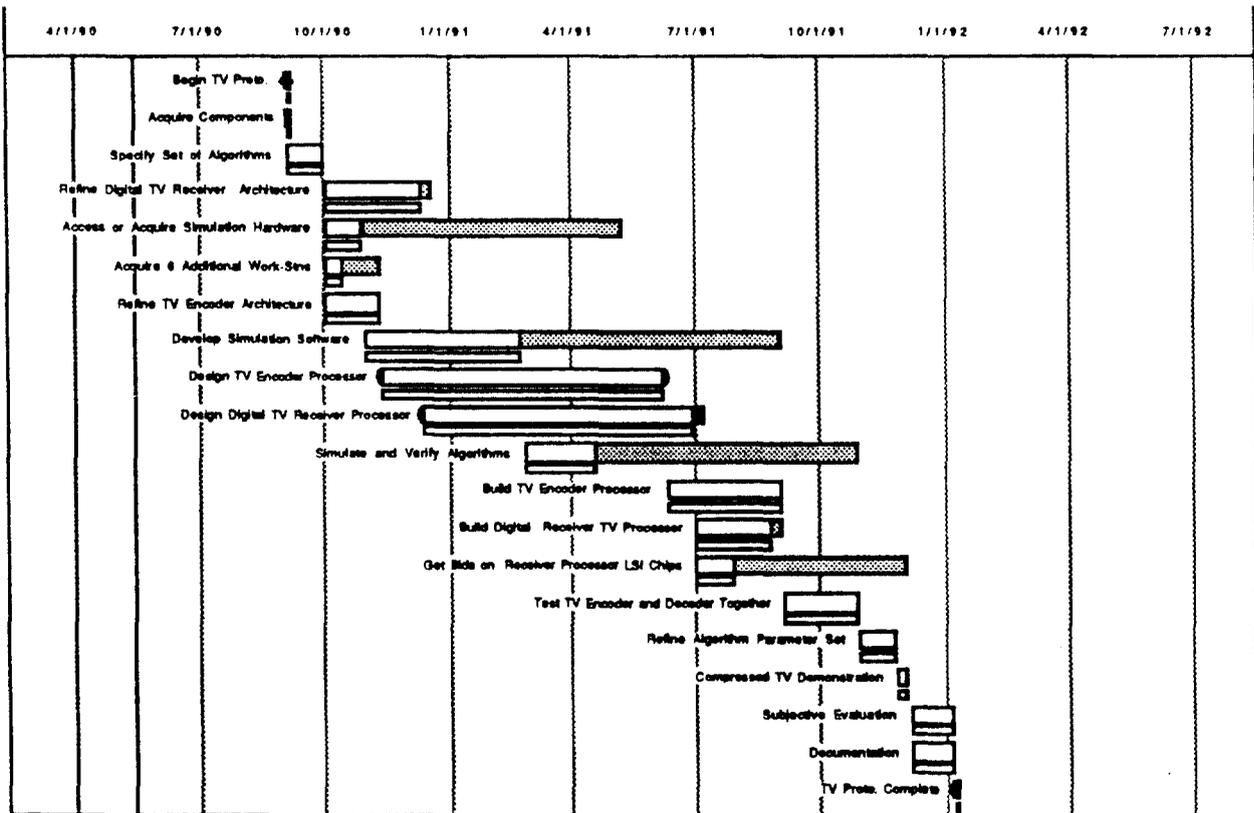


Figure 1.4-2 TV Prototype Subtask Schedule Chart

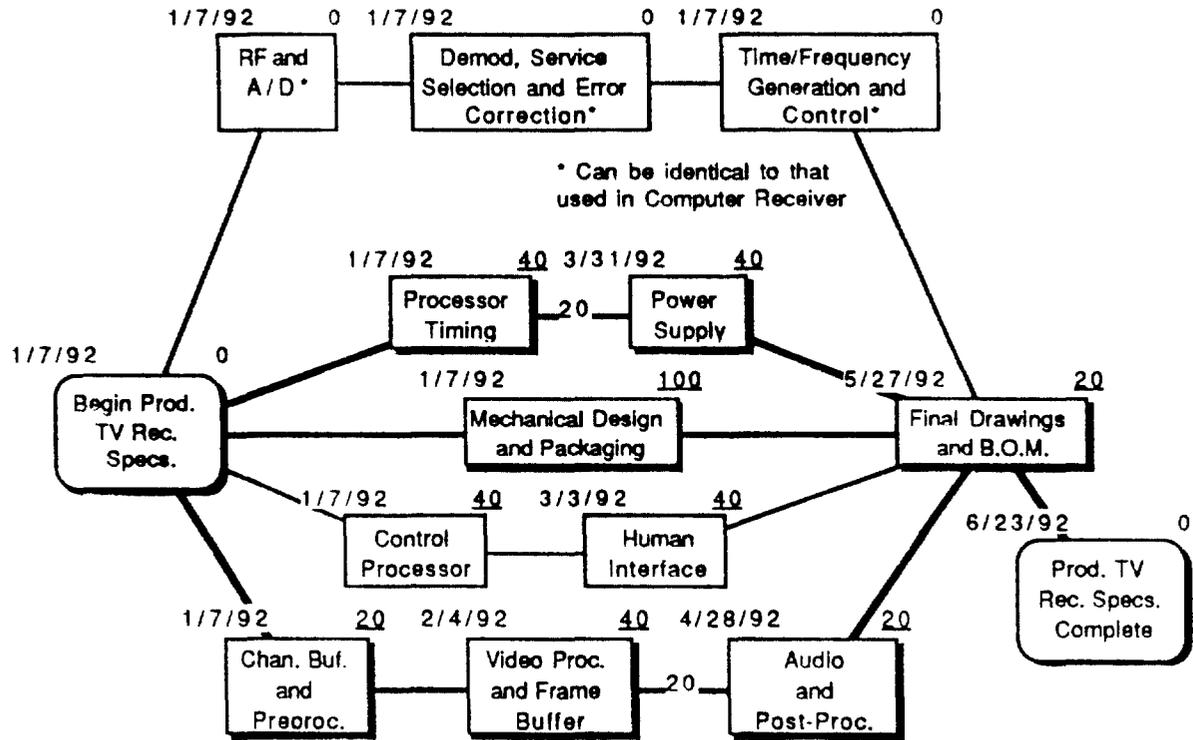


Figure 1.5-1 TV Receiver Spec. Subtask Dependency Chart

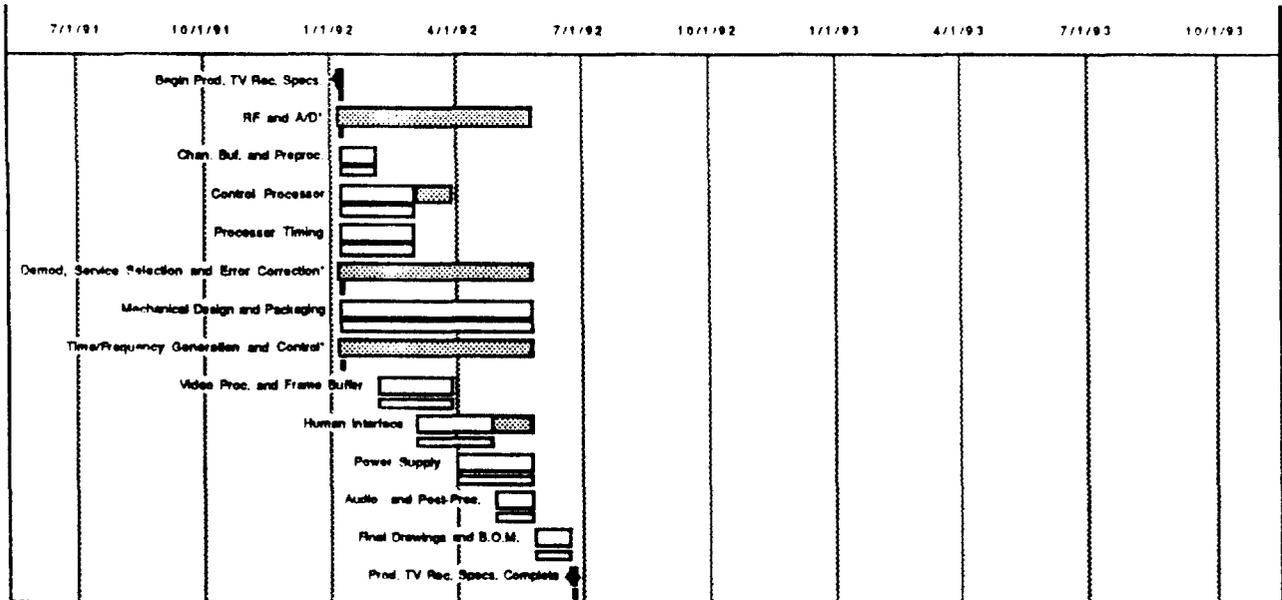


Figure 1.5-2 TV Receiver Spec. Subtask Schedule Chart

## **Appendix D**

### **Vitae of Key Project Personnel**

**Mr. Donald K. Dement** - Vice-Chairman and Director, Advanced Communications Engineering, Inc. Mr. Dement received his BSEE from Drexel University, Washington, DC in 1959 and was an MSEE candidate at George Washington University, Washington, DC in 1966. He has over 30 years of practical experience in planning and management of engineering development in communications systems and technology. He is a member of many professional associations, a Senior Member of IEEE, a member of Eta Kappa Nu, an Associate Fellow of the American Institute of Aeronautics and Astronautics, and has served on IEEE's "Spectrum" and "Institute" editorial boards. Among other awards and honors, he is a recipient of the Air Force Meritorious Civilian Service Medal.

As President of Novacom, Inc. Mr. Dement has provided satellite systems engineering, management, planning, and evaluation for a wide variety of clients. Novacom executes design and integration studies, prepares regulatory filings, develops plans and schedules for tests and operation, and operates proprietary and customized planning software. Products have included studies, evaluations, specifications, and detailed plans for system developers and on-orbit operators, and for medium-orbit remote sensing platform communications systems. Recent clients include NASA HQ, FAA HQ, and commercial space firms in fixed, mobile, and broadcast areas.

As Senior Director of Aeronautical Radio, Inc., Mr. Dement operated the systems architecture and engineering development office at ARINC for new aeronautical satellite communications systems, developed system design and specifications, business plans, satellite launch and integration plans for shared payloads, ground and airborne earth terminals, and overall integration and launch schedule planning.

As Director of NASA Headquarters Communications Division, Mr. Dement developed and promoted a new start for the first ten-year plan undertaken by NASA as the current ACTS (30/20 GHz) and MSAT (mobile) programs. He developed operational concepts for technology development programs. As Manager, Advanced Communications Research, he managed technology development for new hardware and techniques: compressed video, spectral-efficient modulation, monolithic DBS receiver.

As Engineer and then Division Chief at U.S. Dept. of Defense, he directed a range of ground station receiver engineering programs and contracts, and a major development of DoD's early satellite information efforts.

**Dr. G. Gordon Apple** - President, Advanced Communications Engineering, Inc. Dr. Apple received his BSEE degree from the University of Arkansas in 1966 and an MSEE and PhD from Purdue University in 1967 and 1970 respectively. He has over 25 years experience in digital communications spanning the telephone, computer, space, and defense industries. Dr. Apple has patents in the fields of error correction coding, digital transmission, synchronization, and video data compression. He also has various publications and has made many presentations (including internationally) on these subjects. Dr. Apple is a Senior Member of IEEE, a member of Sigma Xi (research society), Eta Kappa Nu, Tau Beta Pi, Pi Mu Epsilon, and the Society of Motion Picture and Television Engineers. He is a Registered Professional Engineer, an instrument rated pilot, and a developer of hardware and software for IBM PC and Apple Macintosh computers.

Dr. Apple worked at Bell Telephone Laboratories on digital-interframe-coding video-compression techniques for PicturePhone<sup>®</sup> transmission. At North Electric he headed up a group which developed transmission, synchronization and multiplexing systems for a new digital telephone switching system. He then was Director of Engineering for Automation Products Company.

At TRW, Dr. Apple served as system engineer on the Space Shuttle's primary communications system and served as system engineer on a number of satellite programs including the Intelsat VII proposal (partly in Toulouse, France). Dr. Apple was principal investigator and project manager for a joint effort with CBS Television to develop data compression for High Definition Television (HDTV) using digital transmission via Direct Broadcast Satellites. He also served as assistant Program Manager for VHSIC ground terminals for the MILSTAR satellite system, incorporating what was most likely the most powerful digital-signal-processor ever designed.

In recent years Dr. Apple has devoted his efforts toward concept development, system design, and promotion of digital transmission for DBS broadcasting of television, HDTV, educational services (e.g., the YES Networks), electronic publishing, and other services. In particular, he pioneered the concept of using personal computers to (digitally) broadcast services directly to televisions and personal computers. He has been actively engaged in extending the concept of "object-oriented programming" across boundaries between multiple diverse processors and dedicated hardware, particularly between personal computers and embedded signal processors.

**Dr. Alan VanBiervliet - Principal Investigator for Education.** Dr. VanBiervliet is an Associate Professor of Education in the Center for Research on Teaching and Learning at the University of Arkansas at Little Rock. He is also President of Learning Express, Inc. a company specializing in research and development activities involving innovative computer-based educational programs and instructional technologies. In 1979, he received a doctorate in Developmental and Child Psychology from the University of Kansas. He has over 15 years experience developing and evaluating educational technologies, including designing a computer assisted language center at the University of Kansas in 1977, developing a model school incorporating microcomputer technologies at the University of Otago, New Zealand, in 1980, and developing a graduate course in special education technology at the University of Illinois in 1982. Since 1984 he has been an Associate Professor in Special Education at the University of Arkansas at Little Rock. Dr. VanBiervliet has published over 32 books, chapters, and articles concerning educational technologies for a wide range of students. He has also made over 60 professional presentations, principally in the area of educational technology. Dr. VanBiervliet is an Associate Editor for the *Journal of Alternative and Augmentative Communication* and a consulting editor for AJMR. He is a member of eleven professional associations including AECT, Am. Assoc. for Artificial Intelligence, Association for Supervision and Curriculum Development, ISAAC, RESNA, TAM, and AAMR. He has secured over \$3.5 million in 16 research and service grants concerning educational technology, including an SBIR I and SBIR II grant from NIH titled "*Special Education Shows Its Stripes: Development and evaluation of bar code technology*". This SBIR project has resulted in the successful development and marketing of educational hardware and software (printware) which utilizes bar code technology. Dr. VanBiervliet is also the principal author of the *Arkansas Technology Access Program* which is funded through P.L. 100-407. He also serves as a consultant to the USDE regarding educational technology research projects.

Dr. VanBiervliet is a certified Apple Developer. He received training from Apple Computer, IBM, and Microsoft in hypermedia development. Dr. VanBiervliet is developer of an innovative multipurpose communication system that uses hypermedia technologies. He has made presentations on educational uses of hypermedia strategies at 5 national and international conferences. In addition, Dr. VanBiervliet developed a video tape on an educational application of hypermedia technologies that was broadcast on a PBS sponsored video teleconference in 1989.

## Jae S. Lim

**Prof. Jae S. Lim** received the S.B., S.M., E.E., and ScD degrees in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology in 1974, 1975, 1978, and 1988, respectively. He joined the M.I.T. faculty in 1978 as an Assistant Professor. He is currently a Professor in the Department of Electrical Engineering and Computer Science and is the Director of the Advanced Television Research Program.

His research interests include digital signal processing and its applications to image, video and speech processing. He has contributed more than one hundred articles to journals and conference proceedings. He is the editor of a reprint book, *Speech Enhancement*, and a coeditor of a reference book, *Advanced Topics in Signal Processing*, published by Prentice-Hall in 1973 and 1987 respectively. He is also the author of a textbook, *Two-Dimensional Signal and Image Processing*, published by Prentice-Hall in 1990.

Dr. Lim is the winner of three prize paper awards, one from the Boston Chapter of the Acoustical Society of America in 1976, and two from the IEEE ASSP Society in 1979 and 1985. He is the recipient of the 1984 MIT Graduate Students Council's EECS Department Teaching Award. He is also co-recipient of the 1984 Harold E. Edgerton Faculty Achievement Award. He is a fellow of the IEEE.

## **APPENDIX E**

**Assurances of Compliance with Federal Regulations and Statutes**

**Assurances:**

The applicant hereby assures and certifies that it will comply with the following special provisions of the Act:

(1) The financial interest of the United States in the telecommunications facilities and equipment will be protected for the useful life of such telecommunications facilities and equipment.

(2) A significant portion of the facilities, equipment, technical assistance, and programming for which assistance is sought will be made available to elementary and secondary schools of local educational agencies which have a high percentage of children counted for purposes of Chapter 1 of the ESEA.

(3) All grant funds awarded will be used to supplement and not supplant funds otherwise available for the purposes of this program.

(4) On a schedule to be prescribed by the Secretary, a report shall be made, listing and describing all available courses of instruction and materials to be offered by educational institutions and teacher training centers which will be transmitted over satellite, specifying the satellite on which each transmission will occur, and the time of the transmission.

Date 5/16/90

Authorized Representative 

Title Project Director

**ASSURANCES — NON-CONSTRUCTION PROGRAMS**

**Note:** Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

**As the duly authorized representative of the applicant I certify that the applicant:**

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States, and if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§ 4728-4763) relating to prescribed standards for merit systems for programs funded under one of the nineteen statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§ 1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§ 6101-6107), which prohibits discrimination on the basis of age;
- (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§ 523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. 290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. § 3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply with the provisions of the Hatch Act (5 U.S.C. §§ 1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§ 276a to 276a-7), the Copeland Act (40 U.S.C. § 276c and 18 U.S.C. §§ 874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 327-333), regarding labor standards for federally assisted construction subagreements.

10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§ 1451 et seq.); (f) conformity of Federal actions to State (Clear Air) Implementation Plans under Section 176(c) of the Clear Air Act of 1955, as amended (42 U.S.C. § 7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended, (P.L. 93-523); and (h) protection of endangered species under the Endangered Species Act of 1973, as amended, (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§ 1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. 2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§ 4801 et seq.) which prohibits the use of lead based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act of 1984.
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations and policies governing this program.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL 	TITLE Project Director
APPLICANT ORGANIZATION Foundation for Educational Advancement Today (FEAT)	DATE SUBMITTED 5/16/90

**Certification Regarding  
Debarment, Suspension, and Other Responsibility Matters  
Primary Covered Transactions**

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 34 CFR Part 85, Section 85.510, Participants' responsibilities. The regulations were published as Part VII of the May 26, 1988 Federal Register (pages 19160-19211). Copies of the regulations may be obtained by contacting the U.S. Department of Education, Grants and Contracts Service, 400 Maryland Avenue, S.W. (Room 3633 GSA Regional Office Building No. 3), Washington, D.C. 20202-4725, telephone (202) 732-2505.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
  - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
  - (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

FEAT

Gutenberg II (CFDA 84.203)

Organization Name

PR Award Number or Project Name

Donald K. Dement, Project Director



5/16/90

Signature

Date

**Certification Regarding  
Debarment, Suspension, Ineligibility and Voluntary Exclusion  
Lower Tier Covered Transactions**

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 34 CFR Part 85, Section 85.510, Participants' responsibilities. The regulations were published as Part VII of the May 26, 1988 Federal Register (pages 19160-19211). Copies of the regulations may be obtained by contacting the person to which this proposal is submitted.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

- (1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

FEAT	Gutenberg II (CFDA 84.203)
Organization Name	FR Award Number or Project Name
Donald K. Dement, Project Director	
Name and Title of Authorized Representative	
	5/16/90
Signature	Date

## Certification Regarding Drug-Free Workplace Requirements Grantees Other Than Individuals

This certification is required by the regulations implementing the Drug-Free Workplace Act of 1988, 34 CFR Part 85, Subpart F. The regulations, published in the January 31, 1989 Federal Register, require certification by grantees, prior to award, that they will maintain a drug-free workplace. The certification set out below is a material representation of fact upon which reliance will be placed when the agency determines to award the grant. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants, or governmentwide suspension or debarment (see 34 CFR Part 85, Sections 85.615 and 85.620).

The grantee certifies that it will provide a drug-free workplace by:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- (b) Establishing a drug-free awareness program to inform employees about—
  - (1) The dangers of drug abuse in the workplace;
  - (2) The grantee's policy of maintaining a drug-free workplace;
  - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
  - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
- (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will—
  - (1) Abide by the terms of the statement; and
  - (2) Notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after such conviction;
- (e) Notifying the agency within ten days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction;
- (f) Taking one of the following actions, within 30 days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted—
  - (1) Taking appropriate personnel action against such an employee, up to and including termination; or
  - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e) and (f).

FEAT	Gutenberg II (CFDA 84.203)
Organization Name	PR/Award Number or Project Name
Donald K. Dement, Project Director	
Name and Title of Authorized Representative	
Signature 	5/16/90
Signature	Date

### Certification Regarding Lobbying For Grants and Cooperative Agreements

Submission of this certification is required by Section 1352, Title 31 of the U.S. Code and is a prerequisite for making or entering into a grant or cooperative agreement over \$100,000.

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the making of any Federal grant, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal grant or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete and submit Standard Form - LLL, 'Disclosure Form to Report Lobbying,' in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subgrants, contracts under grants and cooperative agreements, and subcontracts) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact on which the Department of Education relied when it made or entered into this grant or cooperative agreement. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

FEAT

Gutenberg II (CFDA 84.203)

Organization Name

PR/Award (or Application) Number  
or Project Name

Donald K. Dement, Project Director

Name and Title of Authorized Representative



Signature

5/16/90

Date

ED 80-0008

12/89

## **APPENDIX F**

### **Task Resources, Allocation and Methods**

**BUDGET**

(For FY 1988/1989 Only)

**SUMMARY BY TASK:**

1.0 Equipment:	\$3,457,100
2.0 UALR	258,400
3.0 User Network Design:	562,219
4.0 Assessment/Evaluation:	<u>771,115</u>
Total Project Costs	\$5,048,844
Grant Request	<u>3,647,844</u>
Matching Contribution	\$1,401,000

**Summary of Participant Contributions:**

**Partners:**

FEAT	\$50,000
ACE	1,051,000
MSDE	25,000
ASDE	25,000
UALR	50,000
MIT	<u>200,000</u>
TOTAL	\$1,401,000

Total Contribution, \$ or In-Kind: \$1,401,000

Percentage of Project: 27.75%

<u>TASK</u>	<u>DESCRIPTION</u>	<u>CATEGORY</u>	<u>\$AMOUNT</u>	
1.0	<u>Test Equipment</u>	Labor	1,586,218	
		Fringe	313,912	
		Travel	135,158	
		Equipment	-0-	
		Supplies	14,417	
		Other	380,973 *	
		Direct Office	65,597	
		Dir. Admin.	<u>50,459</u>	
		Total	Direct Costs	2,746,734
			Indirect (40.52%)	<u>910,376</u>
Grand Total	All Costs	<u>3,457,110</u>		

\*Includes MIT Sub-Grant.

2.0	<u>Course Preparation</u> (Sub-Grant to UALR)	Labor		
		Technician 100%	30,000	
		Interactive Development Specialist 25%	7,500	
		Investigator - VanBiervliet 25%	9,000	
		Evaluation Specialist 10% *		
		Science Curriculum Specialist 20% *		
			<u>46,500</u>	
		Fringe Benefits	9,300	
		Advisory Committee Honoraria	5,000	
		Books and Journals	4,000	
		Supplies	3,600	
		Consultant (Learning Express, Inc.)	10,000	
		3 Student Assistantships (12 mo)	30,000	
		Lab Equipment - 5 complete Hypermedia Workstations @ 30,000 each	<u>150,000</u>	
		Total	Direct Costs	258,400
			Indirect Costs (44.5%) S/W *	<u>-0-</u>
		Grand Total	All Costs	<u>258,400</u>

\*Contributed  
Full Indirect Costs not applied against sub-contract.

3.0	<u>User Network Design</u>	Labor	282,474
		Fringe	55,902
		Travel	24,069
		Equipment	-0-
		Supplies	2,567
		Other	14,420
		Direct Office	11,681
		Dir. Admin.	<u>8,986</u>
	Total	Direct Costs	400,099
		Indirect (40.52%)	<u>162,120</u>
	Grand Total	All Costs	<u><u>562,219</u></u>
4.0	<u>Evaluation</u>	Labor	129,642
		Fringe	25,632
		Travel	12,345
		Equipment	312,643
		Supplies	1,317
		Other	115,000
		Direct Office	6,135
		Dir. Admin.	<u>3,716</u>
	Total	Direct Costs	606,430
		Indirect (40.52%)	<u>164,685</u>
	Grand Total	All Costs	<u><u>771,115</u></u>

\* Full Indirect Costs not applied against test school equipment.

### TASK DESCRIPTIONS - BUDGET EXPANSION

The applicant believes the budget categories accurately reflect the estimates of time and other resources which will be expended in each task.

Certain costs items which appear above are unusual. These include:

- (1) In task 4.0 Evaluation an equipment expense occurs. This equipment represents 200 personal computers and course software which will be purchased to support 4 classroom demonstrations in 20 Chapter 1 schools. The estimated cost was arrived at as follows:

200 PC's @ 1,500 =	\$300,000.00
Software Courses =	<u>20,145.65</u>
Total	\$320,145.65

- (2) Also, in Task 4.0 there is an amount under the "other" category. This amount represents licensing fees for equipment use (\$65,000.00) and satellite transmission time (\$50,000.00). (These items are discussed more fully in Appendix A. See "Memorandum from ACE to YES Networks.)

#### Match Amounts are Calculated as Follows:

<u>Contributor:</u>	<u>\$ or In-Kind</u>	<u>Source</u>
(1) ACE, Inc.	1,051,000	Licensing fees, overhead
(2) ASDE	25,000	Labor, overhead
(3) UALR	50,000	Labor, overhead
(4) FEAT	50,000	Labor, overhead
(5) MSDE	25,000	Labor, overhead
(6) MIT	<u>200,000</u>	overhead
Total Match:	1,401,000	

Total Project Costs: 5,048,844

Percent Match Represents of Total Project: 27.75%

## SPECIAL BUDGET REQUIREMENT

(a) Instructional Programming

<u>Course Preparation</u> (Sub-Grant to UALR)	Labor	
	Technician 100%	30,000
	Interactive Development	
	Specialist 25%	7,500
	Investigator - VanBiervliet 25%	9,000
	Evaluation Specialist 10% *	
	Science Curriculum	
	Specialist 20% *	
		46,500
	Fringe Benefits	9,300
	Advisory Committee Honoraria	5,000
	Books and Journals	4,000
	Supplies	3,600
	Consultant (Learning Express Inc.)	10,000
	3 Student Assistantships (12 mo.)	30,000
	Lab Equipment - 5 complete Hypermedia Workstations @ 30,000 each	150,000
Total	Direct Costs	258,400
	Indirect Cost (44.5%) S/W *	0
Sub-Total		258,400

(b) Equipment for demonstration

(See Tasks Description - Budget Expansion C1)		
10 Schools/Each State:		
Arkansas:	10 PC's per school @ 1,500 X 10 =	150,000
Massachusetts:	10 PC's per school @ 1,500 X 10 =	150,000
Sub-Total		300,000
Total		558,400

## **APPENDIX G**

Partnership Internal Accountant

 **Peat Marwick**

Certified Public Accountants

1100 Tower Building  
323 Center Street  
Little Rock, AR 72201

Telephone 501 375 3275

May 10, 1990

The Honorable Wilbur D. Mills, Chairman  
Foundation for Educational Advancement Today  
1600 South Eads  
Arlington, Virginia 22202

Dear Mr. Chairman:

We are pleased to have the opportunity to provide F.E.A.T. with this letter outlining the scope of our proposed services. To ensure a more complete understanding of the nature and extent of the services we agree to perform, your responsibilities, and our fee arrangements, we have set forth our understanding of the services requested as follows:

- Set up an accounting system and internal controls,
- Provide annual audited financials,
- Prepare Federal and state income tax returns and,
- Provide accounting and tax consulting services as necessary.

Our fee for these services will be based upon the amount of time required and any out-of-pocket expenses. We estimate our fee to range between \$20-30,000 for the first year of operation. Any additional fees for consulting services will be billed at a rate not in excess of \$70.00 per hour.

In confirmation of our understanding and to engage our Firm for these services, kindly sign the enclosed copy of this engagement letter and return it to our offices.

We appreciate the opportunity extended to be of service to you and look forward to a mutually satisfying relationship.

Sincerely,

KPMG Peat Marwick



Jerry W. Walton, Partner

JWW/dw  
Enclosures



Member Firm of  
Klynveld Peat Marwick Goerdeler

# The Personal Satellite Digital Ground Station

PROPRIETARY

*revised by D. L. Miller J.  
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presentation made by SF who  
my business origin.  
D. L. Miller copy 4/82 - d  
and his original program  
of some kind in some of copy  
to find out print -*

## The Economics and Investment Potential of a Personal Satellite Digital Receiver for the Business and Consumer Electronics Market

Presented to

**Mr. Tommy Unterberg**  
**April 2, 1990**



Advanced Communications Engineering