

Directives

DL Comments to Mathews

KENNEDY SPACE CENTER
Apollo Program Directive

DATE: _____

KSC APOLLO PROGRAM DIRECTIVE NO. _____

TO: Distribution FROM: _____

SUBJECT: Apollo Technical Integration and Evaluation (TIE) Communications and Working Relationships

I. PURPOSE

This directive sets forth policy, establishes requirements, and assigns responsibilities necessary to implement ~~effective~~ effective communications and working relationships for ~~the successful~~ accomplishment of Apollo Technical Integration and Evaluation effort.

II. SCOPE

This directive covers responsibilities, control channels for Apollo TIE data requirements, technical information flow, and working relations among

- KSC Organizations (Line Directorates and the Apollo Program Manager (APM))
- KSC Organizations and KSC TIE Contractor
- KSC TIE Contractor and KSC Contractors

III. REFERENCES

1. NASA Contract NASw 1650, Apollo Technical Integration and Evaluation.
2. Kennedy Space Center KN 1142.23, December 6, 1966.

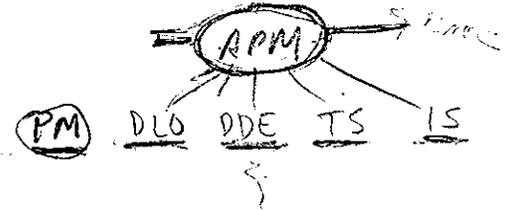
IV. IMPLEMENTATION

A. The KSC Deputy Apollo Program Manager is established as the KSC Apollo TIE Manager. He will be the direct interface with KSC Apollo TIE Contractor for general management matters and with the OMSF APO Director of Technical Integration and Evaluation. He will also be the focal point for setting up the communication and working relationships described in this directive. These communication channels and working relationships will be implemented immediately.

Mathews

To assure that each KSC organization involved with TIE activities receives appropriate support, TIE Managers are established and will be appointed within the following organizations:

CTM { Apollo Program Manager's Office
Directorate of Launch Operations
Directorate of Design Engineering
Directorate of Technical Support
Directorate of Installation Support



TR. { These organizational TIE Managers will be designated Contract Technical Managers in accordance with Reference 2. Technical Representatives will be designated in each Directorate and the Apollo Program Office in accordance with Reference 2.

Mon. Rep. { Organizational TIE Managers are responsible for the quality and consistency of work performed by the Apollo TIE Contractor within their respective organizations, and will report the TIE Contractor's performance to the KSC Apollo TIE Manager at monthly intervals. (The required format and content of this report will be furnished each organizational TIE Manager by the KSC Apollo TIE Manager at a later date.) Further, each organizational TIE Manager is responsible to assure that Contractor activities remain within and comply with the scope of the contract, or to recommend to the KSC Apollo TIE Manager task deletions or additions to the contract.

Mathews approves(?)
scope changes.
Line { Budget m/c Control }
↑ ↓
in the event it becomes necessary to initiate a scope change, a proposal will be submitted by the organizational TIE Managers to the KSC Apollo TIE Manager. The KSC Apollo TIE Manager is responsible for the (technical approval of scope changes) and will submit all such proposals to the Apollo TIE Contracting Officer for negotiation and incorporation into the Apollo TIE contract.

Monitors (APM) { KSC Apollo TIE Task Monitors have been appointed for each TIE Task. These Monitors are responsible to assure inter-organizational, including inter-Center, consistency and to this end will work closely with their counterparts at other Centers and NASA Headquarters. The Task Monitors will not have directive authority, but will provide appropriate recommendations to the KSC Apollo TIE Manager. A listing of the Task Monitors is attached (Appendix I).

KENNEDY SPACE CENTER
Apollo Program Directive

DATE:

- B. Working relationships and communication channels among KSC organizations, the KSC Apollo TIE Contractor, and the KSC Contractors are established by means of the networks defined in Appendix II.
- C. Data/information flow between the TIE Contractor and other KSC contractors will be the subject of subsequent directives; therefore, development of three-party working agreements will be held in abeyance until further notice.

APPENDIX I

<u>TASK</u>	<u>MONITOR</u>
1	W. Clearman, AP-SAT
2	J. Wootton, AP-SYS
3	W. Pearson, AP-PCO-2
4	M. Gassman, AP-PCO-3
5	(Reserved)
6	W. D. Moody, AP-SAT-3
7	T. Goldcamp, AP-SAT-1
8	J. Noyd, AP-SAT
9	R. Kriz, AP-PCO-3
10	(Reserved)
11	(Reserved)
12	R. Body, AP-RQA

APPENDIX II

KSC APOLLO PROGRAM
TECHNICAL INTEGRATION AND EVALUATION
NETWORKS

1.0 INTRODUCTION

These Networks (Figures IIA and IIB) depict graphically the requirements of this Directive which are necessary for the operation of the Apollo TIE Program at KSC.

2.0 TECHNICAL DIRECTION AND COORDINATION FLOW - Figure IIA

This Figure identifies the channels in which technical direction is to flow for the KSC Apollo TIE activities. Control proceeds from the KSC Director through the Operating and Support Directorates. At this point, the flow diverges: one path, through the organizational TIE Managers, controls the TIE Contractor; the other represents the direct control by the Directorates over the KSC Contractors.

The KSC Apollo TIE Manager is responsible for providing TIE program direction and resolving conflicts within established guidelines. He coordinates, monitors, and tracks the execution of the requirements and the utilization of funds against approved plans and schedules. This monitorship is not concerned with day-to-day operations, but does become involved in problems which interfere, or threaten to interfere, with KSC's ability to meet any of its schedule commitments. The KSC Apollo TIE Manager exercises final approval of all proposed scope changes. The Organizational Tie Managers are responsible for the technical management and monitoring of TIE contractor activities in their respective areas.

3.0 TIE TASK INTEGRATION - Figure IIB

Each Task Monitor, through coordination with the respective Contractor Task Manager, will assure compatibility of effort across those KSC organizations with which his Task interfaces. Should conflicts arise, the KSC Apollo TIE Manager will act to resolve the issues. The KSC Apollo TIE Task Monitors will monitor the TIE Contractor's performance for compatibility within Tasks across all KSC organizations concerned, and will provide appropriate recommendations to the KSC Apollo TIE Manager. Based

*to whom has he
sent you
?*



*lets kick this
around!*

John

XERO

XERO

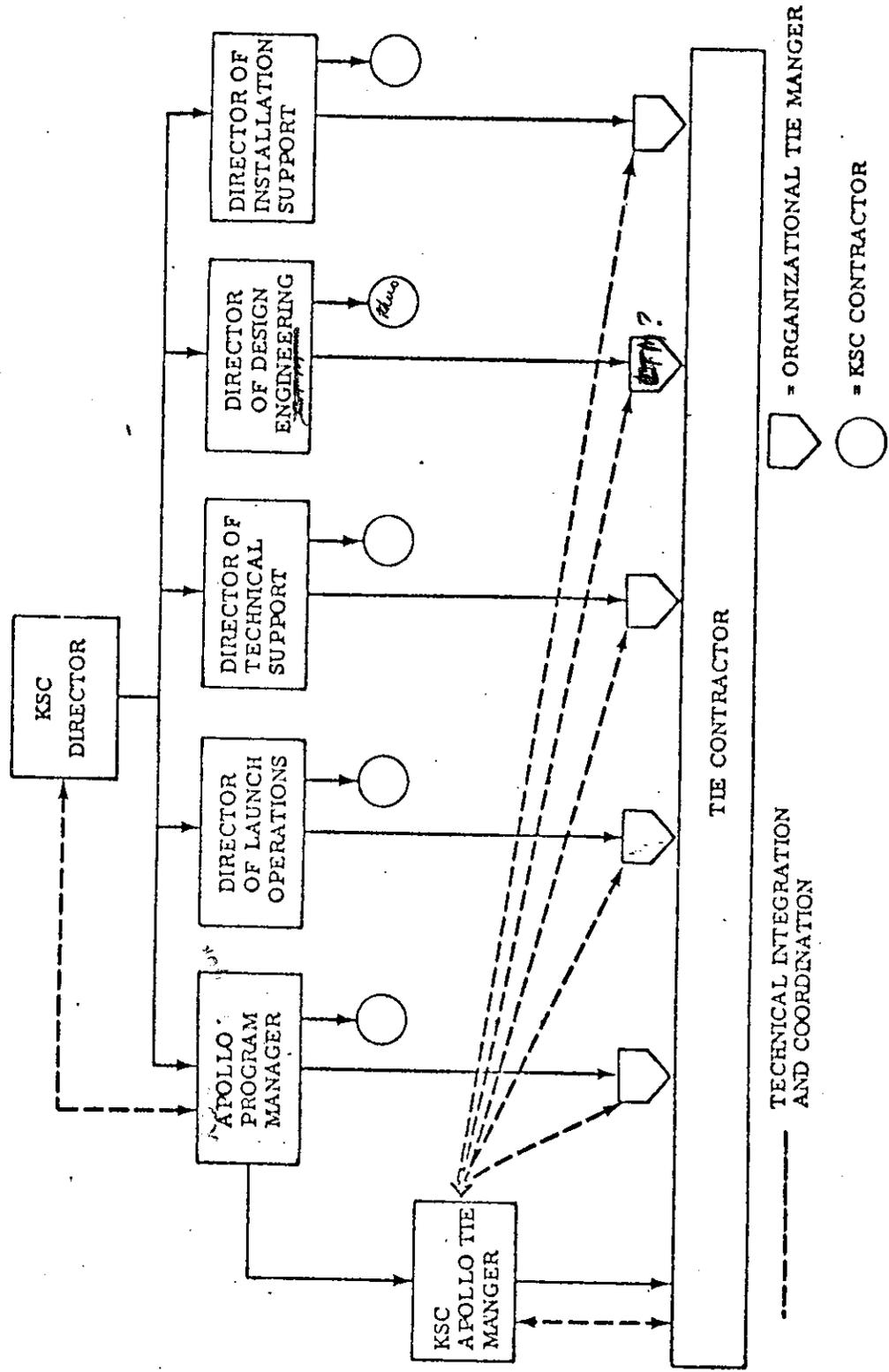
XERO

XERO

APPENDIX II
Page 2

on these recommendations, the KSC Apollo TIE Manager will confer with the organizational TIE Managers to resolve incompatibilities and conflicts that may occur across a Task.

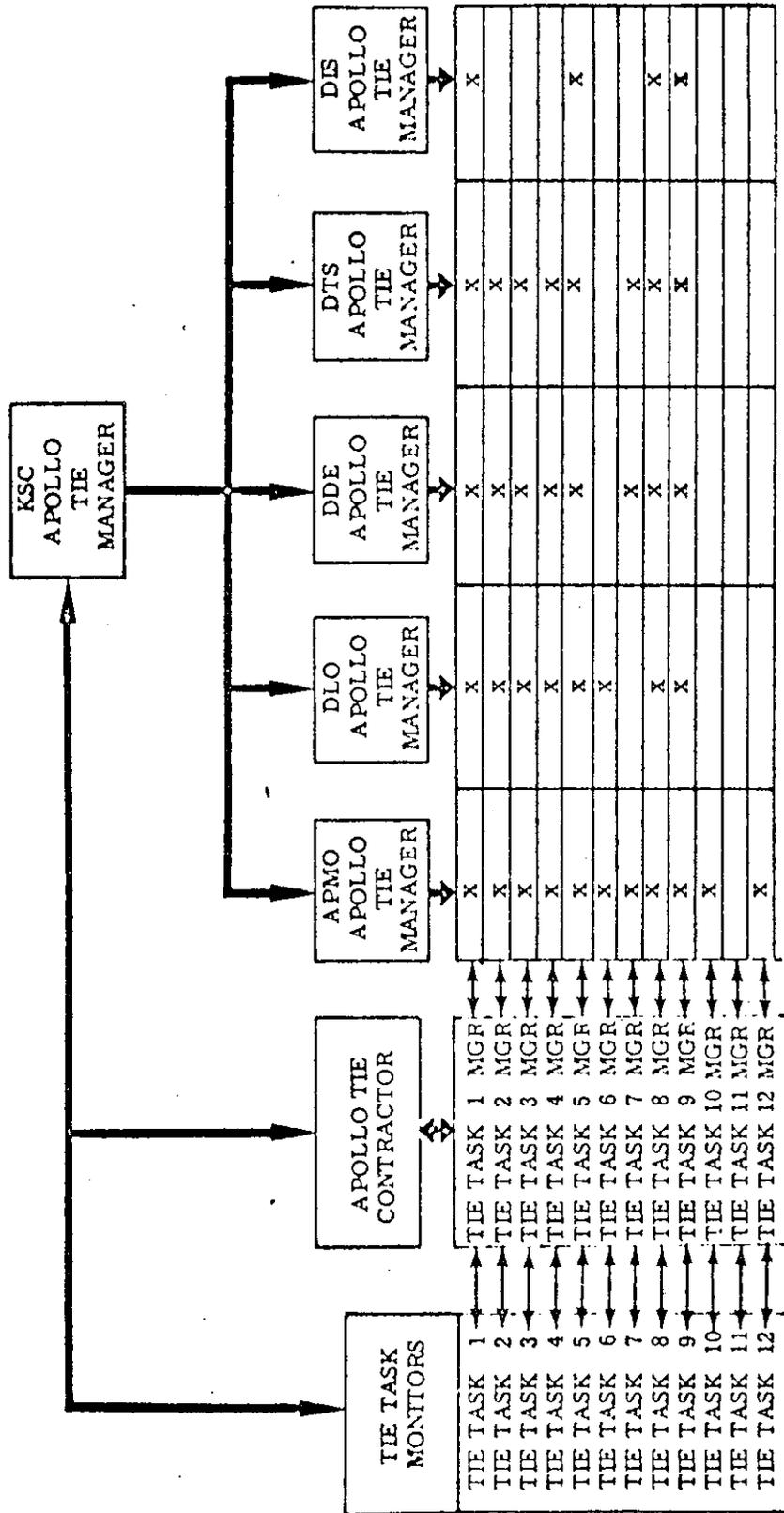
KSC TECHNICAL DIRECTION AND COORDINATION FLOW



— = TECHNICAL INTEGRATION AND COORDINATION
 - - - = TECHNICAL INTEGRATION AND COORDINATION

◡ = ORGANIZATIONAL TIE MANGER
 ○ = KSC CONTRACTOR

TASK INTEGRATION



DRAFT 1

DATE:

KSC APOLLO PROGRAM DIRECTIVE NO. 17

TO: Distribution

FROM: _____
Apollo Program Manager

SUBJECT: Apollo Technical Integration and Evaluation (TIE) Communications and Working Relationships

I. PURPOSE

This directive sets forth policy, establishes requirements and assigns responsibilities necessary to implement effective communications and working relationships for the successful accomplishment of Apollo Technical Integration and Evaluation effort.

II. SCOPE

This directive covers responsibilities, control channels for Apollo data requirements, technical information flow and working relations among:

KSC Operating and Support Directorates
KSC Organizations and KSC TIE Contractor
KSC TIE Contractor and KSC Contractors

III. REFERENCE

1. Apollo Program Directive No. 30A, Subject: "Apollo Technical Integration and Evaluation (TIE) Communications and Working Relationships" dated August 14, 1967.
2. NASA Contract NASW-1650, Apollo Technical Integration and Evaluation.
3. Kennedy Space Center KN 1142.23, December 6, 1966.

IV. IMPLEMENTATION

- A. In accordance with references #1 and #3, Apollo TIE Manager (Contract Technical Manager) is hereby established as the KSC Apollo Program Manager representative and direct interface with the KSC Apollo TIE Contractor and the OMSF APO Apollo Engineering Support Manager. The KSC Apollo TIE Manager will be responsible to the Apollo Program Manager as the focal point for setting up the communications and working relationships described herein. These communication channels and working relationships will be implemented immediately.

The KSC Apollo TIE Manager is responsible for the final technical approval of all work to be performed by the Apollo TIE Contractor and will be responsible for submitting all work to the Apollo TIE Contracting Officer for negotiation and subsequent incorporation of such work into the Apollo TIE contract.

To assure that each KSC Directorate involved with TIE activities receives appropriate support, Assistant Apollo TIE Managers are established and will be appointed by the Apollo Program Manager for the following directorates:

Apollo Program Office
Launch Operation
Design Engineering
Technical Support

These Assistant Apollo TIE Managers will provide initial approval of work to be performed by the Apollo TIE Contractor and any subsequent revision, expansion or other change to the scope of such work must be first approved by them before submittal to the KSC Apollo TIE Manager. In those instances when the KSC Apollo TIE Manager may be unavailable, the Assistant Managers may approve work for him, and submit it to the Apollo TIE Contracting Officer. However, the KSC Apollo TIE Manager may disapprove such work provided that such disapproval occurs within two (2) days after its submittal to the Contracting Officer.

The Assistant Apollo TIE Managers will designate personnel in their respective directorates who will act as points of contact with the Technical Representatives (Task Directors) and who will provide the day-to-day working relationships with those Apollo TIE Contractor personnel providing support to their organizations.

Assistant Apollo TIE Manager for the KSC Apollo Program Office will be the custodian for Government Furnished Documentation (GFD) required to support the Apollo TIE Program.

A list of the Apollo TIE Manager, Assistant Apollo TIE Managers, and Task Directors is included as Attachment III.

- B. Technical Representatives (Task Directors) are hereby established as points of communication and commitment within KSC for each TIE task. The Task Directors will respond to the KSC Apollo TIE Manager and will have the responsibility and the authority for establishing and carrying out in-scope accomplishment of the task.

The Task Directors are responsible for the quality and consistency of work performed by the Apollo TIE Contractor and will report the TIE Contractors performance to the Apollo TIE Manager at weekly intervals. Each Task Director will, upon his request, receive assistance in assessing the quality of contractor performance from the points-of-contract designated by the Assistant Apollo TIE Managers. However, each Task Director is solely responsible to assure consistency of task performance by the contractor across all KSC organizations involved and to assure that contractor technical performance remains within the scope of the contract. Further, each Task Director is responsible to recommend to the KSC Apollo TIE Manager, task revisions, deletions or additions to the contract which may be necessary. A listing of Task Directors will be established and maintained by the Apollo TIE Manager. See Attachment III for a list of Task Directors.

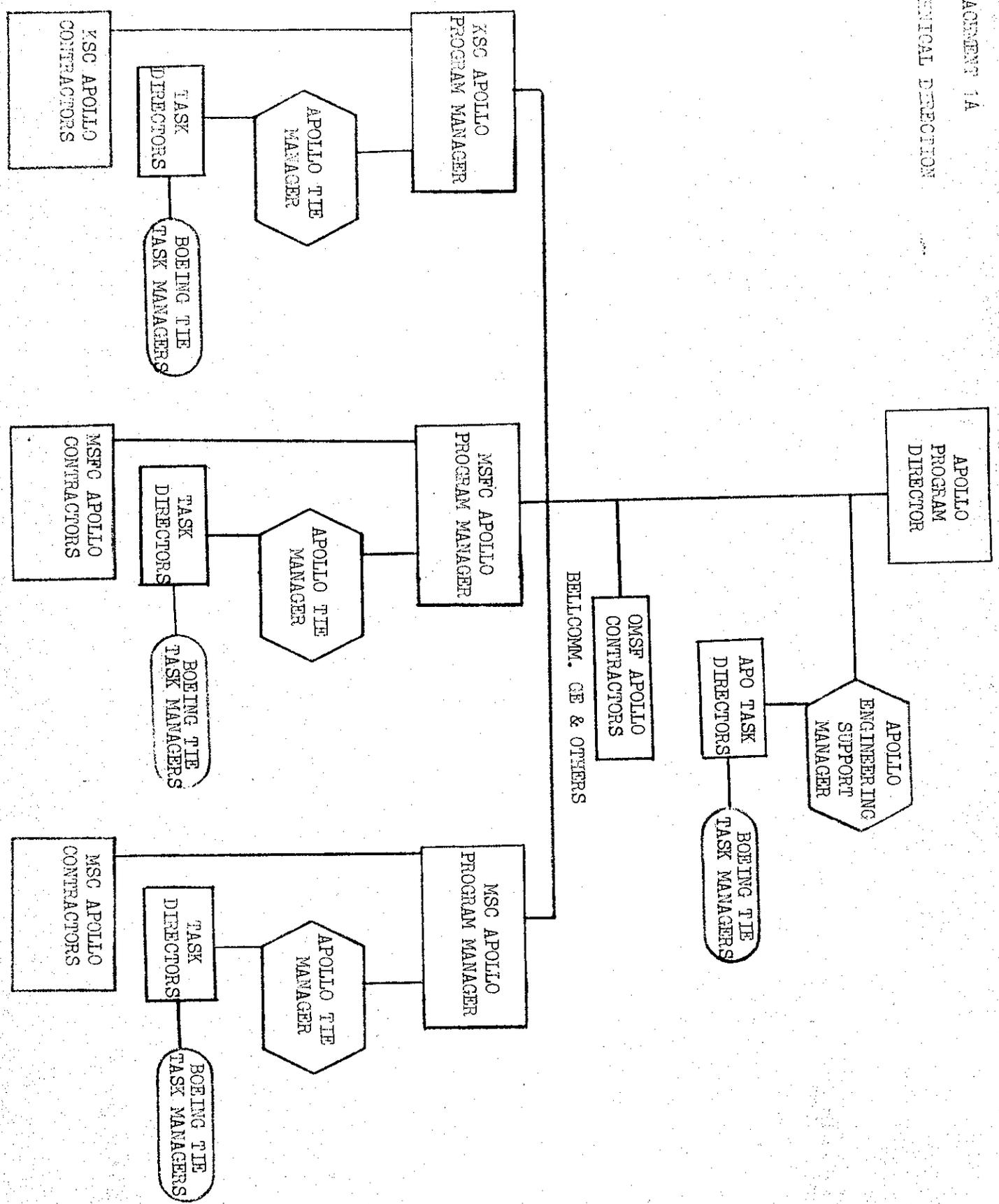
- C. Working relationships among KSC organizations, KSC Apollo TIE Contractor and KSC Contractors, and data flow channels are established by means of the attached networks (Attachments 1A through 1E with 1A through 1D being identical to those in reference 1.)
- D. The KSC Director of Administration will make the necessary arrangements to develop and implement three-party working agreements among KSC, KSC TIE Contractor and applicable KSC Contractors. These agreements will cover:

- Technical information exchange
- Identification and understanding of data to be used
- Expediting the acquisition of source or work around data

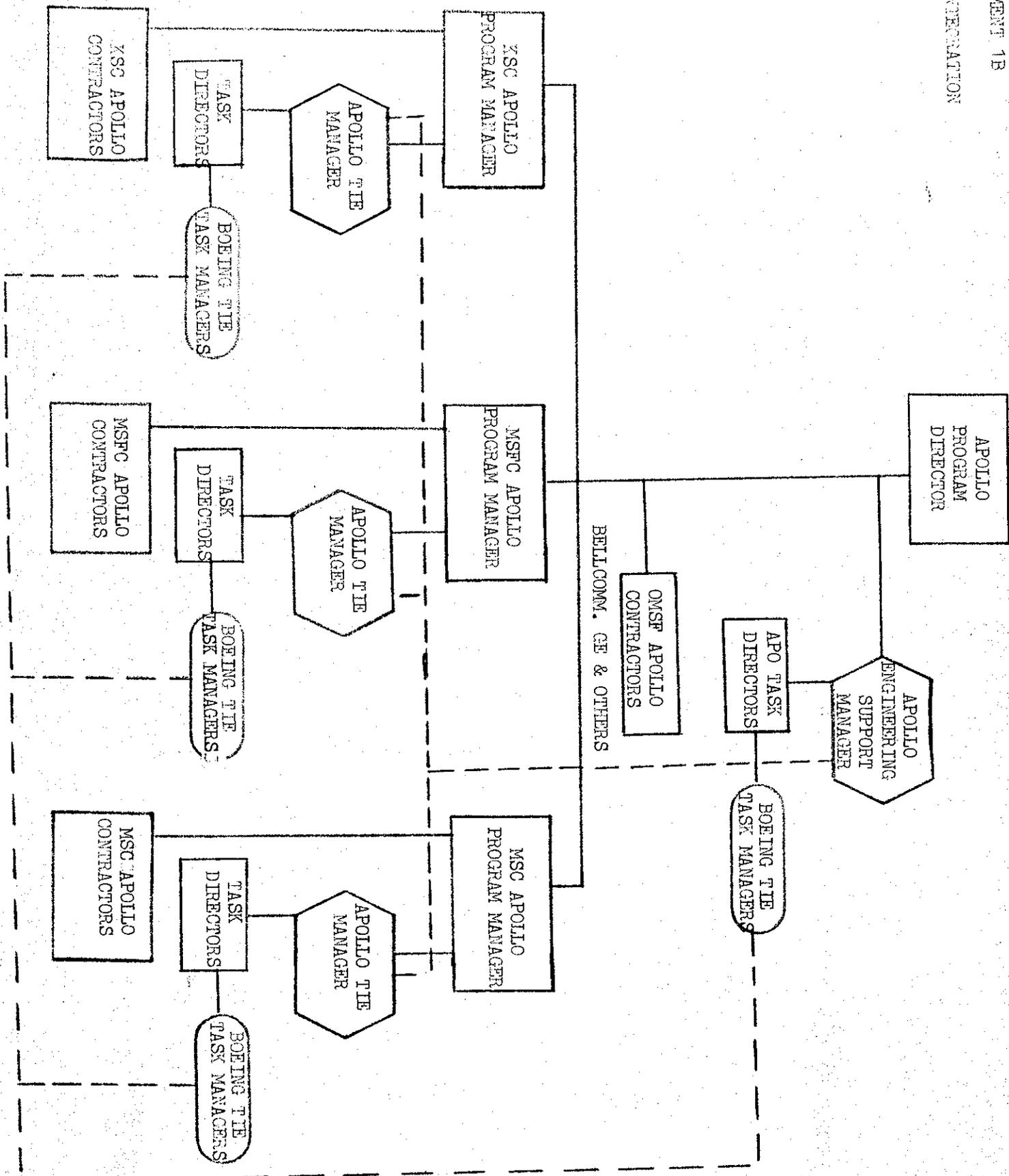
These working agreements will establish lines of technical communications which are as direct as possible with the contractors activity involved without infringing upon the Contractor's proprietary information or mode of operation. The KSC Apollo Technical Integration Manager will be responsible for coordinating with the OMSF APO Technical Director for Integration and Evaluation to develop and implement their working agreements. Attachment II will be used as a guide in the development of the working agreements.

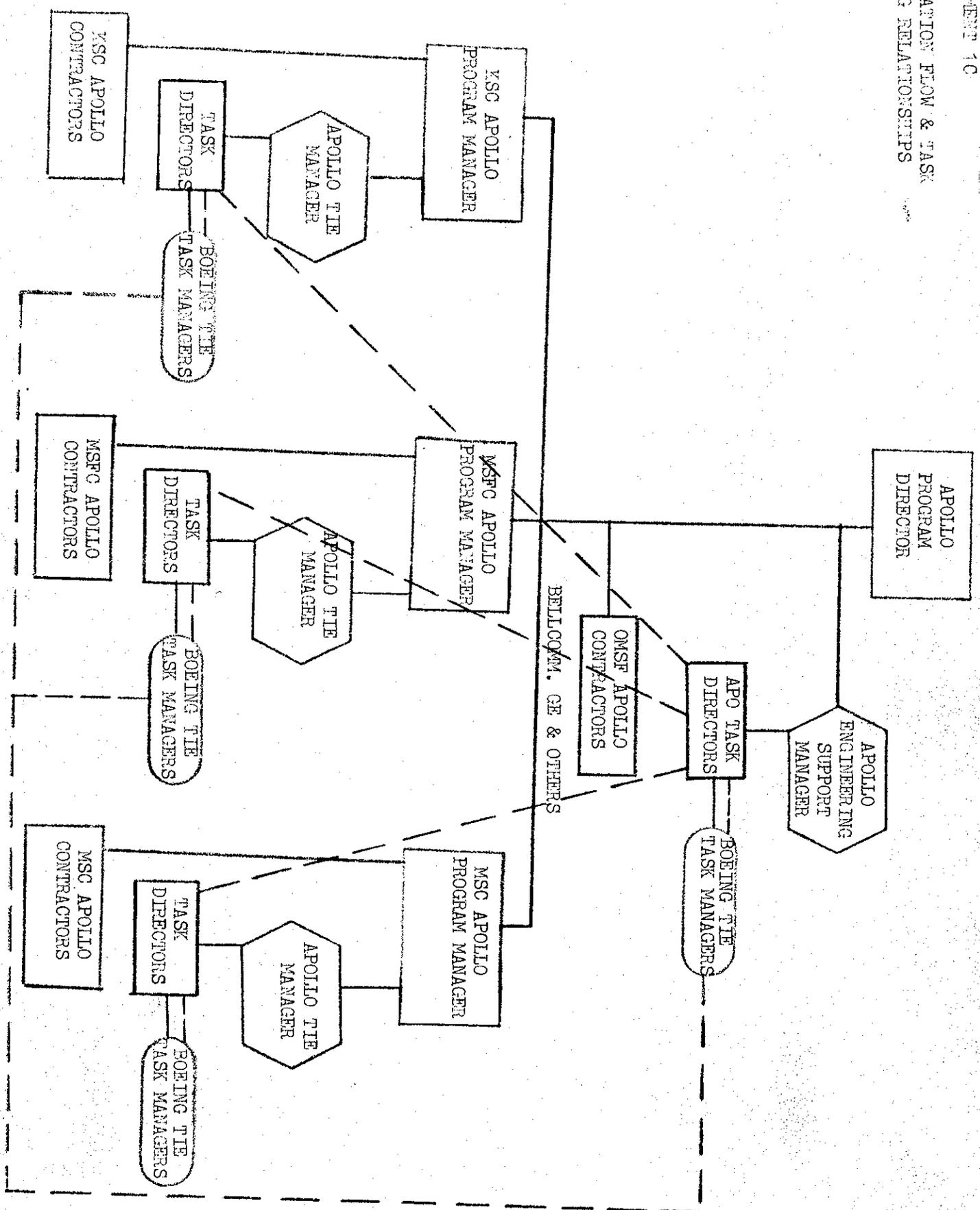
- E. In addition to data sources identified in three-party working agreements, each KSC operating and support director will identify official information and validation sources for all data originating within that directorate. Such lists will be established and maintained by the Apollo Assistant TIE Managers at each directorate. The Director of Installation Support will designate personnel to establish and maintain its list.
- F. In accordance with KSC KN 1142.23, Contract Management Assistance Officers (CMAO) will be appointed within each of the applicable directorates to perform the functions outlined in KN 1142.23.

TECHNICAL DECEPTION

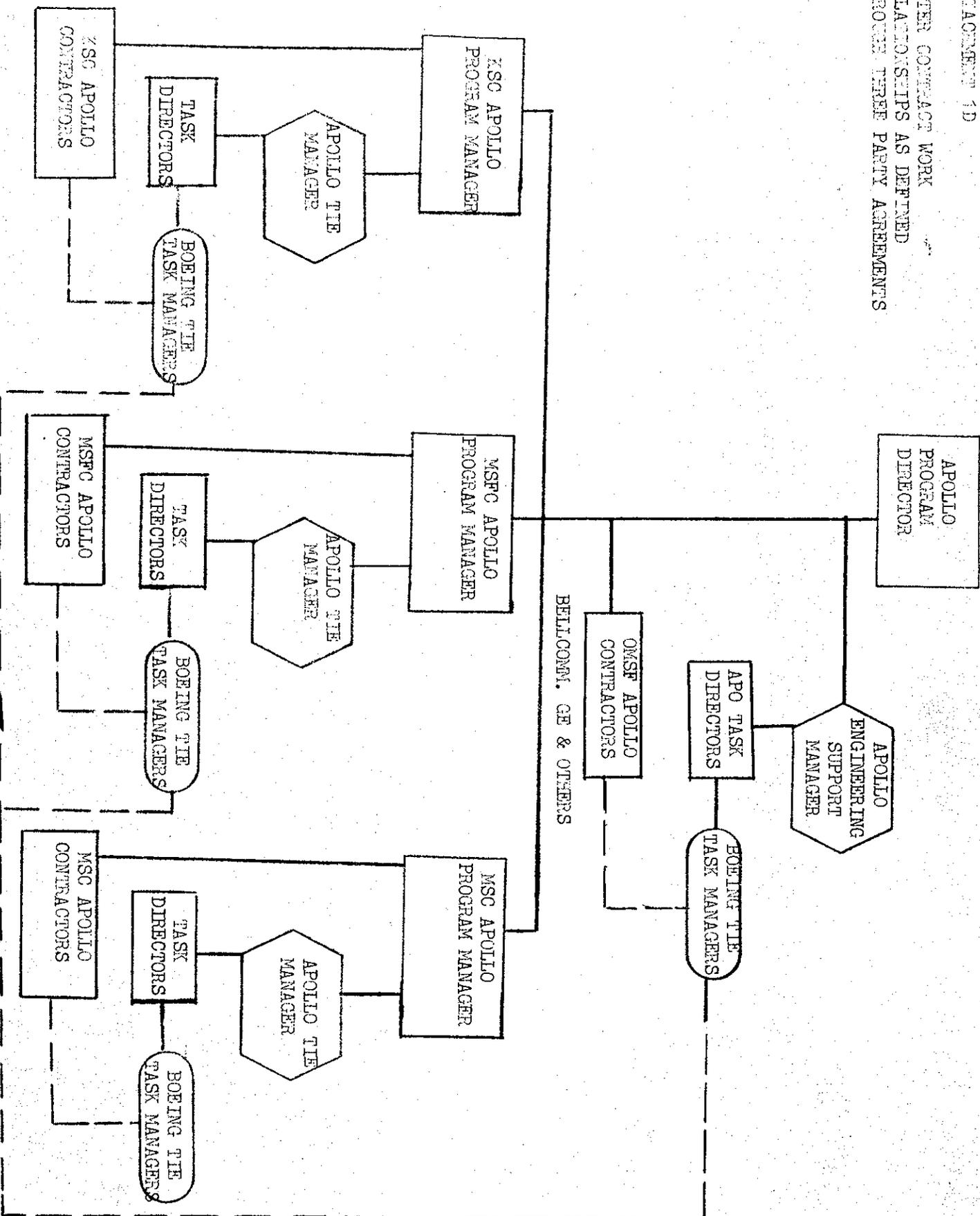


TASK INTEGRATION

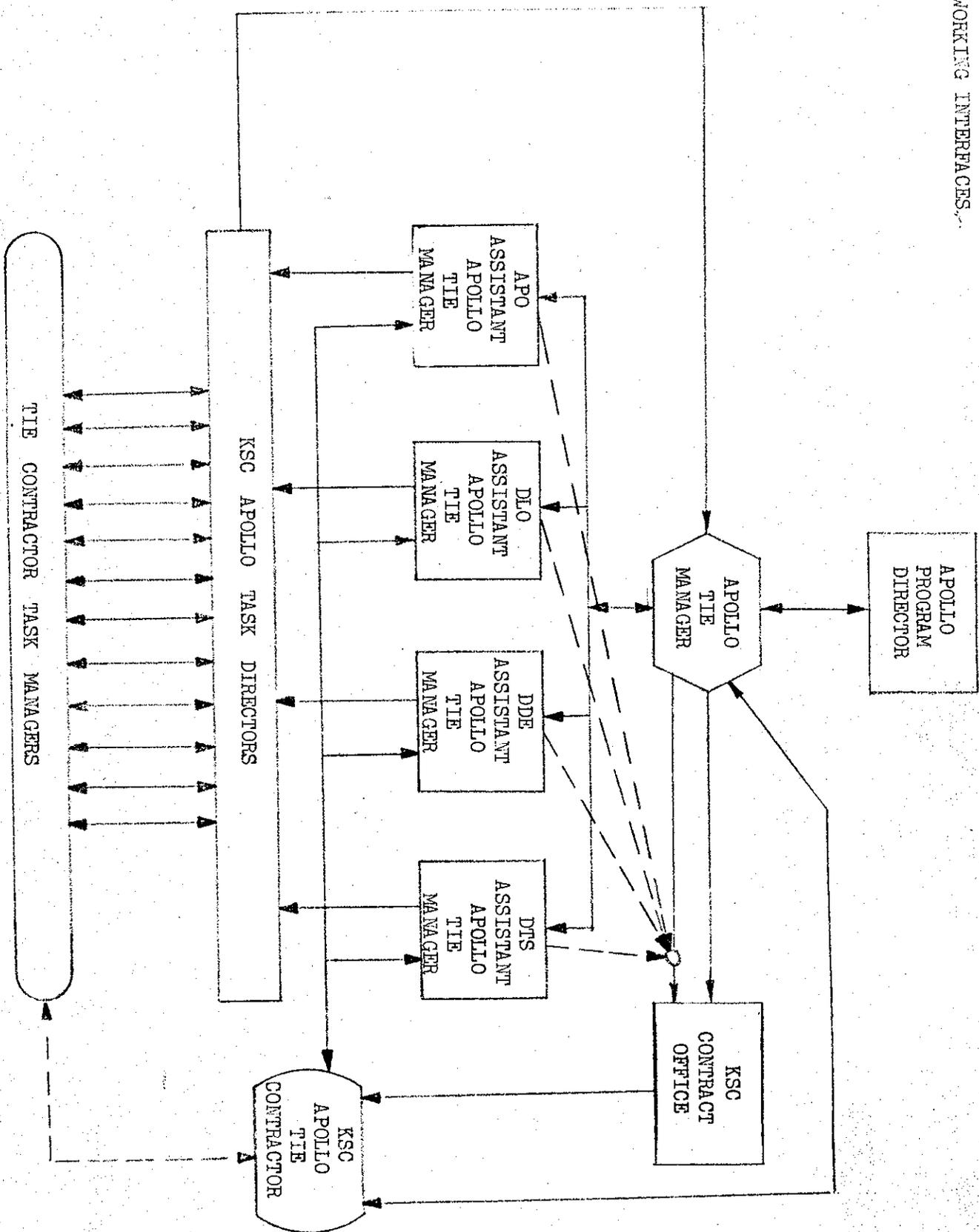




INTER CONTRACT WORK
RELATIONSHIPS AS DEFINED
BY THREE PARTY AGREEMENTS



KSC WORKING INTERFACES



NOTE:

This is a sample only. Actual organization names or abbreviations would be inserted where generic names are shown in parentheses. Additional or amended provisions would be made for specific agreements.

WORKING AGREEMENT

APOLLO PROGRAM

(TECHNICAL INTEGRATION & EVALUATION CONTRACTOR)

(APOLLO PROGRAM CONTRACTOR)

(KENNEDY SPACE CENTER)

DATE _____

(DOC. NO.)

WORKING AGREEMENT-APOLLO PROGRAM
(TIE CONTRACTOR/KSC/CONTRACTOR)1.0 INTRODUCTION

This Working Agreement defines the (TIE Contractor/KSC/Contractor) relationship and ground rules to accomplish required coordination and data acquisition in support of The Apollo Technical Integration and Evaluation Contract, NASW-1650.

2.0 SCOPE

Technical information and data referred to herein are understood to be contractually deliverable to the Government, or are available upon request by the Government, and are within the intent and scope of Contract (NASX-XXXX).

(Contractor) will provide to (TIE Contractor) the necessary training to identify and understand the data being used. In the event of a conflict between this agreement and Contract (NASX-XXXX), the Contract shall govern. (TIE Contractor) and ~~KSC~~ shall be notified when information and data requested are considered to be outside the scope of the (Contractor) Contract. ~~KSC~~ will take the necessary action to resolve the problem. Further, should information and data requested be considered to be of a proprietary nature by (contractor), the request shall be referred to ~~KSC~~ for resolution.

3.0 GROUND RULES

3.1 Points of Contact

(TIE Contractor - Organization Title)
(Contractor - Organization Title)

3.2 Data Requests

All requests for data will be conducted between the above designated offices. Data may be requested by telephone, TWX, or letter. Telephone conversations involving requests for data, commitments, or decisions with respect to technical data transmittal will be immediately verified in writing. TWX requests for data will be acknowledged within three working days of receipt. Acknowledgement will specify the anticipated date when data will be transmitted or made available. Data supplied by (Contractor) will be in a reproducible form.

- a. When requesting meetings, (TIE Contractor) will provide a list of proposed agenda items, meeting location and date(s), visiting personnel and desired contacts, and designate a Team Leader, when required. This request will be submitted to (contractor) and ~~(contractor)~~^{KSE} at least seven working days prior to a proposed meeting date.
- b. (Contractor) and (TIE Contractor) will agree on a meeting agenda, location, and dates at least three working days prior to the meeting. These final arrangements will be coordinated with ~~(contractor)~~^{KSE}.
- c. The (TIE contractor) Team Leader will prepare summary type minutes of the meeting. These minutes will consist of items discussed, decisions made, action items, and a record of data being transmitted. The minutes will be signed by the (TIE contractor) Team Leader and the (contractor) Meeting Chairman, and distribution made to all parties involved on an expedited basis, preferably at the end of the meeting.

KENNEDY SPACE CENTER
Apollo Program Directive

DRAFT
2 of 17
DATE:

KSC APOLLO PROGRAM DIRECTIVE NO. 17

TO: Distribution

FROM:

Apollo Program Manager

SUBJECT: Apollo Technical Integration and Evaluation (TIE) Communications and Working Relationships

I. PURPOSE

This directive sets forth policy, establishes requirements and assigns responsibilities necessary to implement effective communications and working relationships for the successful accomplishment of Apollo Technical Integration and Evaluation effort.

II. SCOPE

This directive covers responsibilities, control channels for Apollo data requirements, technical information flow and working relations among:

KSC Operating and Support Directorates
KSC Organizations and KSC TIE
KSC TIE Contractor and KSC Contractors

III. REFERENCE

1. Apollo Program Directive No. 30A, Subject: "Apollo Technical Integration and Evaluation (TIE) Communications and Working Relationships" dated August 14, 1967.
2. NASA Contract NASW-1650, Apollo Technical Integration and Evaluation.
3. Kennedy Space Center KN 1142.23, December 6, 1966.

IV. IMPLEMENTATION

- A. In accordance with references #1 and #3, Apollo TIE Manager (Contract Technical Manager) is hereby established as the KSC Apollo Program Manager representative and direct interface with the KSC Apollo TIE Contractor and the OMSF APO ~~Apollo Engineering Support Manager~~. The KSC Apollo TIE Manager will be responsible to the Apollo Program Manager as the focal point for setting up the communications and working relationships described herein. These communication channels and working relationships will be implemented immediately.

DRAFT

The KSC Apollo TIE Manager is responsible for the final technical approval of all work to be performed by the Apollo TIE Contractor and will be responsible for submitting all work to the Apollo TIE Contracting Officer for negotiation and subsequent incorporation of such work into the Apollo TIE contract.

- B. To assure that each KSC Directorate involved with TIE activities receives appropriate support, Assistant Apollo TIE Managers are established and will be appointed by the Apollo Program Manager for the following Directorates:

the appropriate Directors etc ??

- Apollo Program Office
- Launch Operations
- Design Engineering
- Technical Support
- Installation Support - ???

These Assistant Apollo TIE Managers will provide initial approval of work to be performed by the Apollo TIE Contractor, and any subsequent revision, expansion or other change to the scope of such work must be first approved by them before submittal to the KSC Apollo TIE Manager. ~~In those instances when the KSC Apollo TIE Manager may be unavailable, the Assistant Manager may approve work for him, and submit it to the Apollo TIE Contracting Officer. However, the KSC Apollo TIE Manager may disapprove such work provided that such disapproval occurs within two (2) days after its submittal to the Contracting Officer. The Assistant Apollo TIE Managers also will initiate recommendations for revisions to the contractual scope of work as necessary.~~

The Assistant Apollo TIE Manager for the KSC Apollo Program Office will be the custodian for Government Furnished Documentation (GFD) required to support the Apollo TIE Program.

The Assistant Apollo TIE Managers will monitor the progress of the performance of the Apollo TIE Contractor and report thereon to the Apollo TIE Manager at monthly intervals. *format + content*

- C. In accordance with KSC KN 1142.23, Contract Management Assistance Officers will be appointed within each of the applicable Directorates to perform the functions outlined in KN 1142.23.

The Assistant Apollo TIE Managers will designate personnel within their respective Directorates who will act as ~~points of contact~~ as the Technical Representatives and who will provide the day-to-day working relationships with those Apollo TIE Contractor personnel providing support to their organizations, as specified in KN 1142.23.

- D. Working relationships among KSC organizations, KSC Apollo TIE Contractor and KSC Contractors, and data flow channels are established as set forth in Attachment I hereto.

The KSC Director of Administration will make the necessary arrangements to develop and implement three-party working agreements among KSC, KSC TIE Contractor and applicable KSC Contractors. These agreements will cover:

spell out
Technical information exchange
Identification and understanding of data to be used
Expediting the acquisition of source or work around data

These working agreements will establish lines of technical communications which are as direct as possible with the Contractor's activity involved without infringing upon the Contractor's proprietary information or mode of operation. The KSC Apollo Technical Integration Manager will be responsible for coordinating with the OMSF APO Technical Director for Integration and Evaluation to develop and implement their working agreements. Attachment II will be used as a guide in the development of the working agreements and Attachment III as a guide for change orders.

- E. In addition to data sources identified in three-party working agreements, each KSC operating and support director will identify official information and validation sources for all data originating within that Directorate. Such lists will be established and maintained by the Apollo Assistant TIE Managers at each Directorate. The Director of Installation Support will designate personnel to establish and maintain its list.

D. Necker

KENNEDY SPACE CENTER
Apollo Program Directive

DATE:

KSC APOLLO PROGRAM DIRECTIVE NO. 17

TO: Distribution

FROM: _____

SUBJECT: Apollo Technical Integration and Evaluation (TIE) Communications and Working Relationships

I. PURPOSE

This directive sets forth policy, establishes requirements, and assigns responsibilities necessary to implement effective communications and working relationships for the successful accomplishment of Apollo Technical Integration and Evaluation effort.

II. SCOPE

This directive covers responsibilities, control channels for Apollo TIE data requirements, technical information flow, and working relations among:

- KSC Organizations (Line Directorates and the APM)
- KSC Organizations and KSC TIE Contractor
- KSC TIE Contractor and KSC Contractors

III. REFERENCES

1. NASA Contract NASW 1650, Apollo Technical Integration and Evaluation.
2. Kennedy Space Center KN 1142.23, December 6, 1966.

IV. IMPLEMENTATION

- A. In accordance with reference 2, the KSC Apollo TIE Manager is established as the KSC Apollo Contract Technical Manager. He will be the direct interface with KSC Apollo TIE Contractor and the OMSF APO Director of Technical Integration and Evaluation, and the focal point for setting up the communication and working relationships described in this directive. These communication channels and working relationships will be implemented immediately.

To assure that each KSC organization involved with TIE activities receives appropriate support, TIE Managers are established and will be appointed within the following organizations:

- Apollo Program Manager's Office
- Directorate of Launch Operations
- Directorate of Design Engineering
- Directorate of Technical Support
- Directorate of Installation Support

A list of the TIE Managers is included as Attachment III.

Organizational TIE Managers are responsible for the quality and consistency of work performed by the Apollo TIE Contractor within their respective organizations, and will report the TIE Contractor's performance to the KSC Apollo TIE Manager at monthly intervals. Further, each organizational TIE Manager is responsible to assure that Contractor activities remain within and comply with the scope of the contract, or to recommend to the KSC Apollo TIE Manager task deletions or additions to the contract.

The organizational TIE Managers will propose additive work, to be performed by the Apollo TIE Contractor, to the KSC Apollo TIE Manager. The KSC Apollo TIE Manager is responsible for the technical approval of proposed additive work and will submit all such proposals to the Apollo TIE Contracting Officer for negotiation and incorporation into the Apollo TIE contract.

KSC Apollo TIE Task Monitors will be appointed for each TIE Task. These Monitors are responsible to assure inter-organizational, including inter-Center, consistency and to this end will work closely with their counterparts at other Centers at NASA Headquarters. The Monitors will not have directive authority, but will provide appropriate recommendations to the KSC Apollo TIE Manager.

- B. Working relationships and communication channels among KSC organizations, the KSC Apollo TIE Contractor, and the KSC Contractors are established by means of the networks defined in Attachment I.
- C. The KSC Apollo Program Manager will make the necessary arrangements to develop and implement three-party working agreements and any necessary contract modifications required to implement these agreements. These agreements will provide for the most direct exchange of information which does not infringe upon proprietary rights. The Director of Administration will support the contractual implementation of these agreements. The organization responsible for directing the KSC Contractor involved will participate in the establishment of such agreements, and negotiation of associated contract modifications.

The following KSC stage, launch vehicle, spacecraft, and support Contractors will provide data and information to the KSC TIE Contractor:

North American Rockwell Corporation
International Business Machines Corporation
McDonnell Douglas Corporation
The Boeing Company
Grumman Aircraft Engineering Corporation
Bendix Corporation
Trans World Airlines, Incorporated
Catalytic Construction Company - Dow Chemical Company
General Electric Company
Federal Electric Corporation

In addition to data sources covered by three-party working agreements and contract modifications, each KSC Operating and Support Director will identify authorized sources for data originating within that Directorate.

KSC APOLLO PROGRAM
TECHNICAL INTEGRATION AND EVALUATION
NETWORKS

1.0 INTRODUCTION

These Networks (Attachment 1A through 1C) depict graphically the requirements of this directive which are necessary for the operation of the Apollo TIE Program at KSC.

2.0 TECHNICAL DIRECTION AND COORDINATION FLOW - Chart 1A

This chart identifies the channels in which technical direction is to flow for the KSC Apollo TIE activities. Control proceeds from the KSC Director through the Operating and Support Directorates. At this point, the flow diverges: one path, through the organizational TIE Managers, controls the TIE Contractor; the other represents the direct control by the Directorates over the KSC Contractors.

The KSC Apollo TIE Manager is responsible for providing in-scope TIE program direction and resolving conflicts within established guidelines. He coordinates, monitors, and tracks the execution of the requirements and the utilization of funds against approved plans and schedules. This monitorship is not concerned with day-to-day operations, but does become involved in problems which interfere, or threaten to interfere, with KSC's ability to meet any of its schedule commitments. The KSC Apollo TIE Manager exercises final approval of all proposed new work to be performed by the Apollo TIE Contractor.

3.0 TIE TASK INTEGRATION - Chart 1B

Each Contractor Task Manager will assure compatibility of effort across those KSC organizations with which his Task interfaces. Should conflicts arise, the KSC Apollo TIE Manager will act to resolve the issues. The KSC Apollo TIE Task Monitors will monitor the TIE Contractor's performance for compatibility within Tasks across all KSC organizations concerned, and will provide appropriate recommendations to the KSC Apollo TIE Manager. The KSC Apollo Program Manager will coordinate these assessments with the KSC Director.

4.0 TIE INFORMATION FLOW - Chart 1C

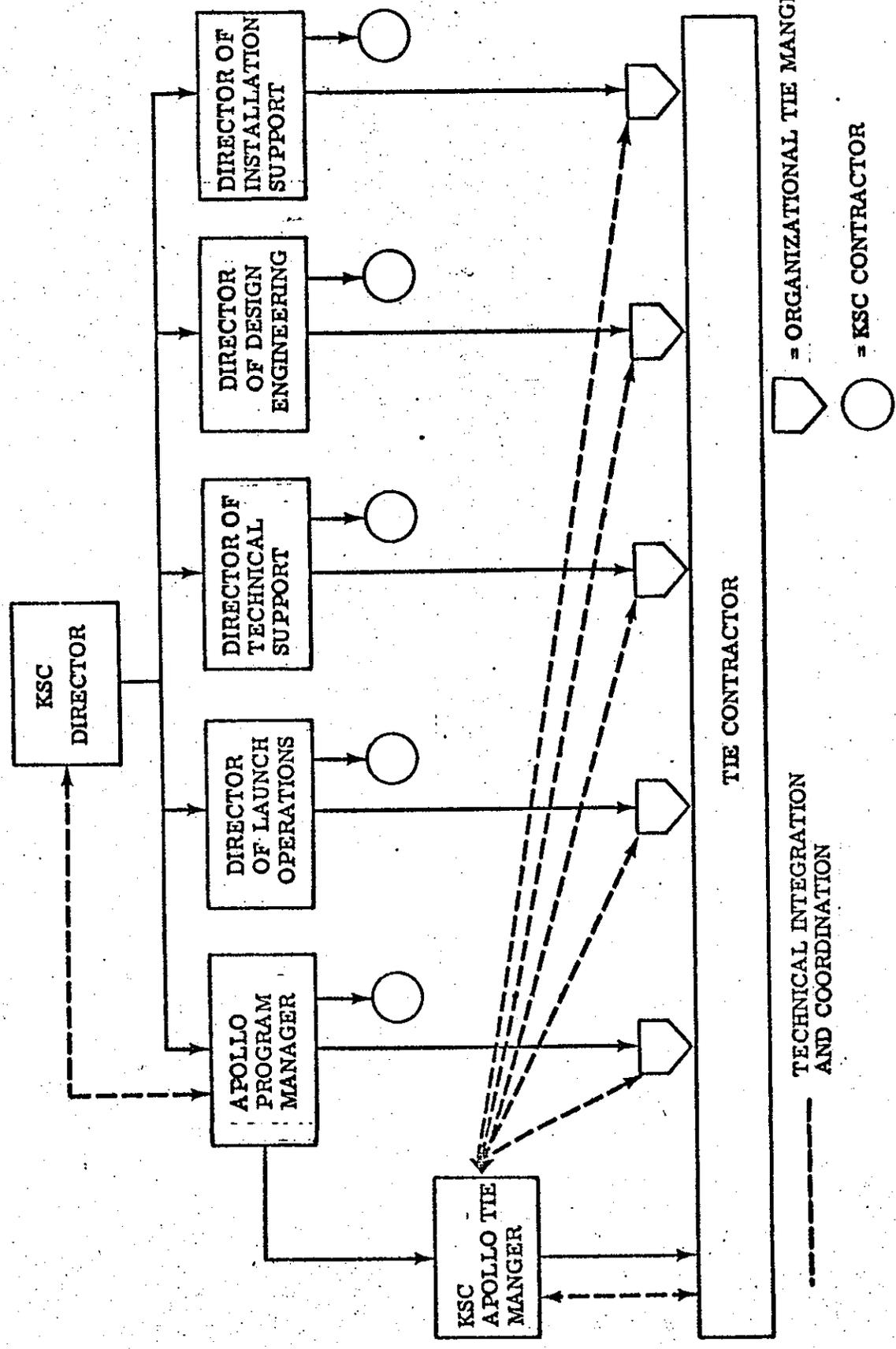
The paths in this chart represent reciprocal information flow. The KSC Director communicates directly with the Directors of the Operating and Support Directorates, who in turn interface with the organizational TIE Managers and with the KSC Contractors. The organizational TIE Managers interface directly with the TIE Contractor.

Information concerning proposed new work, if approved by the organizational TIE Managers, is forwarded to the KSC Apollo TIE Manager for final approval. He will initiate action necessary to authorize such work.

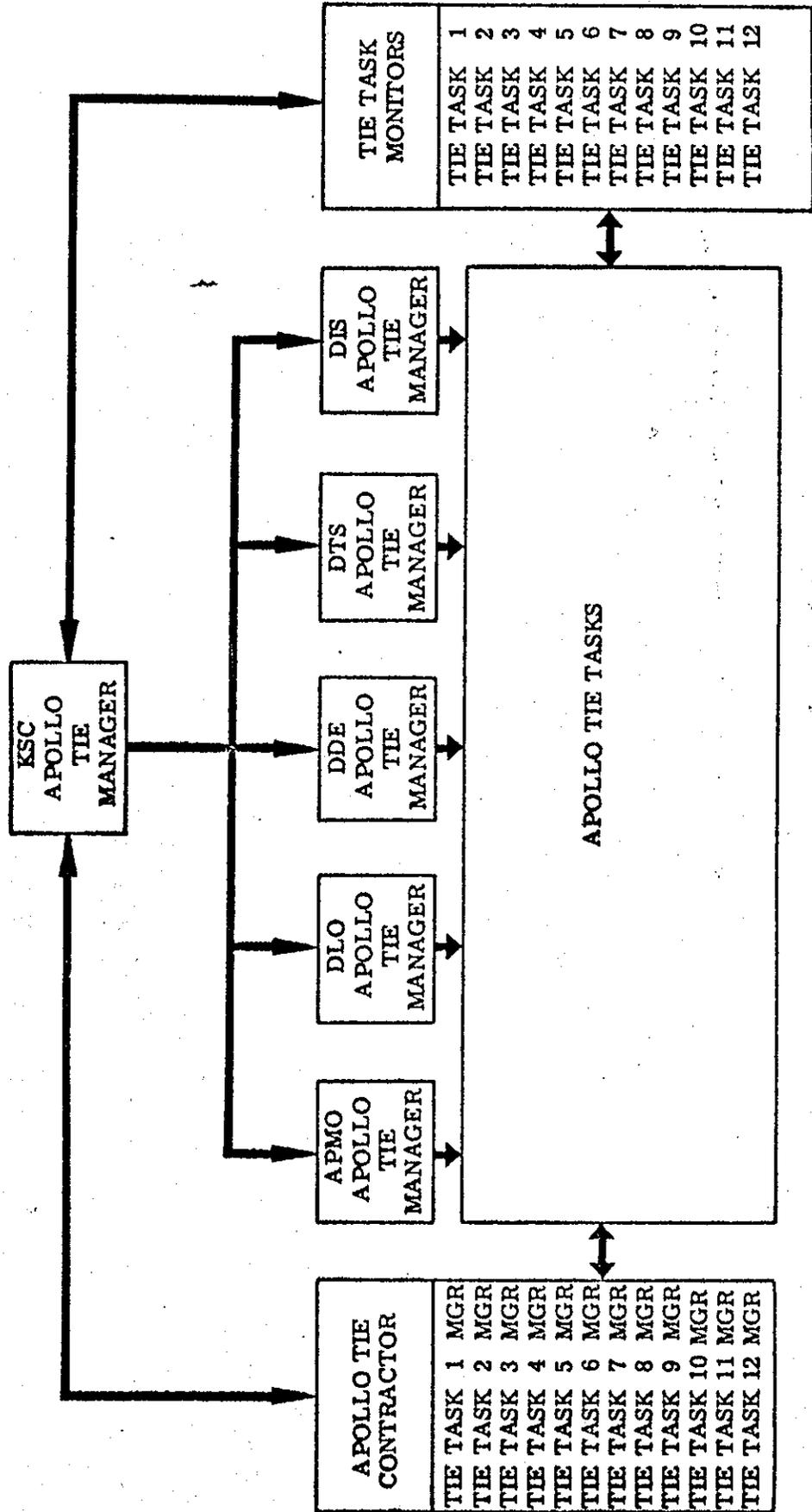
Program status reports and evaluation of Apollo TIE Contractor performance are forwarded by the organizational TIE Managers to the KSC Apollo TIE Manager.

Exchanges of information between the KSC Contractors and the Apollo TIE Contractor will be effected through procedures defined in applicable three-party working agreements. The KSC Apollo TIE Manager will initiate the action necessary to resolve any conflicts arising from these agreements.

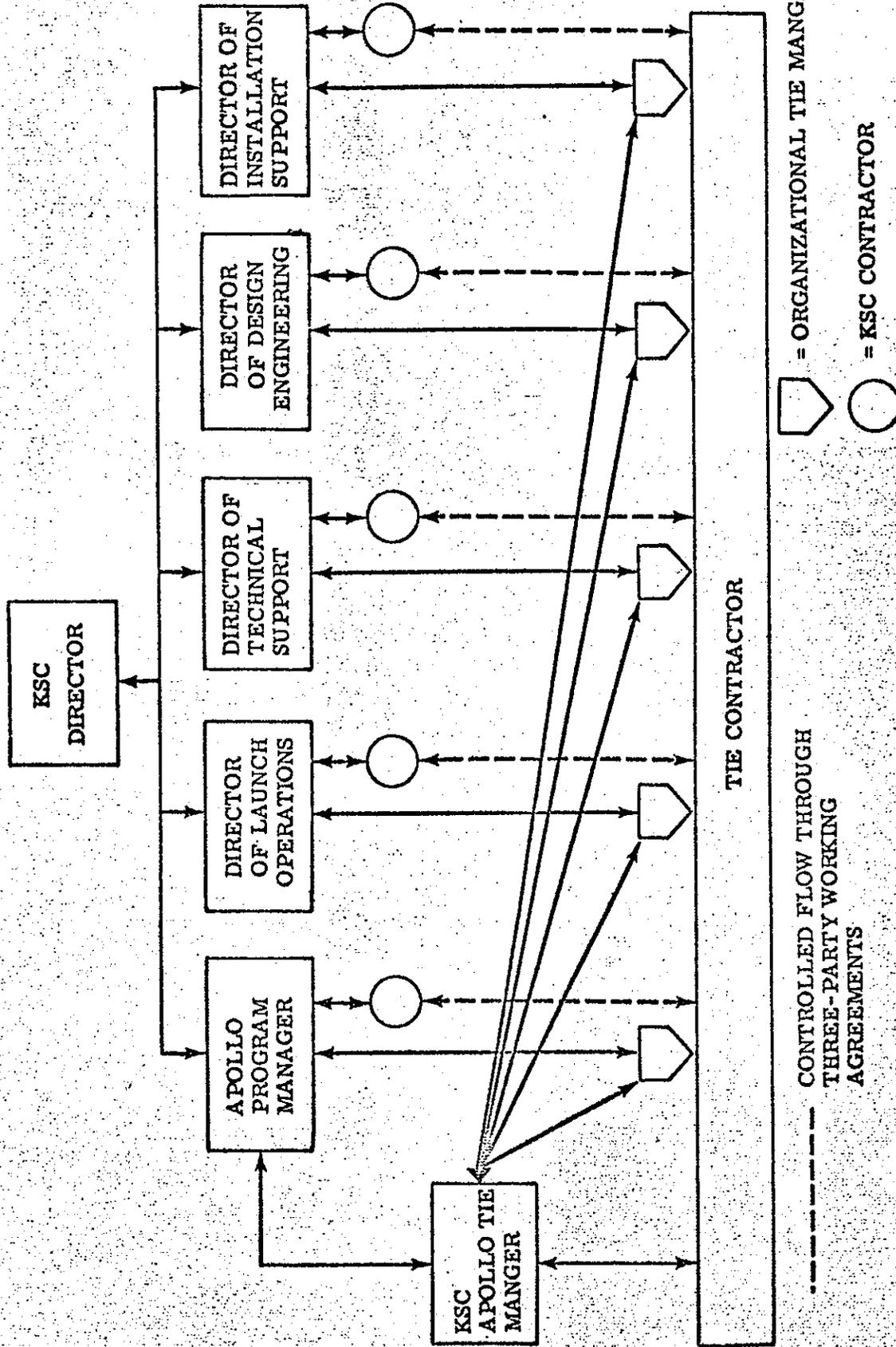
KSC TECHNICAL DIRECTION AND COORDINATION FLOW



TASK INTEGRATION



TIE INFORMATION FLOW



DRAFT per Dr. Debus

KENNEDY SPACE CENTER
Apollo Program Directive

DATE: October 20, 1967

KSC APOLLO PROGRAM DIRECTIVE NO. 17

TO: Distribution

FROM: R.O. Middleton
Apollo Program Manager

SUBJECT: Apollo Technical Integration and Evaluation (TIE) Communications and Working Relationships

I. PURPOSE

This directive sets forth policy, establishes requirements and assigns responsibilities necessary to implement effective communications and working relationships for the successful accomplishment of Apollo Technical Integration and Evaluation effort.

II. SCOPE

This directive covers responsibilities, control channels for Apollo data requirements, technical information flow and working relations among:

KSC Operating and Support Directorates
KSC Organizations and KSC TIE Contractor
KSC TIE Contractor and KSC Contractors

III. REFERENCE

1. Apollo Program Directive No. 30A, Subject: "Apollo Technical Integration and Evaluation (TIE) Communications and Working Relationships" dated August 14, 1967.
2. NASA Contract NASW-1650, Apollo Technical Integration and Evaluation.
3. Kennedy Space Center KN 1142.23, December 6, 1966.

IV. IMPLEMENTATION

- A. In accordance with references #1 and #3, Apollo TIE Manager (Contract Technical Manager) is hereby established as the KSC Apollo Program Manager representative and direct interface with the KSC Apollo TIE Contractor and the OMSF APO Apollo Engineering Support Manager. The KSC Apollo TIE Manager will be responsible to the Apollo Program Manager as the focal point for setting up the communications and working relationships described herein. These communication channels and working relationships will be implemented immediately.

The KSC Apollo TIE Manager is responsible for the final technical approval of all work to be performed by the Apollo TIE Contractor and will be responsible for submitting all work to the Apollo TIE Contracting Officer for negotiation and subsequent incorporation of such work into the Apollo TIE contract.

To assure that each KSC Directorate involved with TIE activities receives appropriate support, Assistant Apollo TIE Managers are established and will be appointed by the Apollo Program Manager for the following directorates:

Apollo Program Office
Launch Operation
Design Engineering
Technical Support

These Assistant Apollo TIE Managers will provide initial approval of work to be performed by the Apollo TIE Contractor and any subsequent revision, expansion or other change to the scope of such work must be first approved by them before submittal to the KSC Apollo TIE Manager. In those instances when the KSC Apollo TIE Manager may be unavailable, the Assistant Managers may approve work for him, and submit it to the Apollo TIE Contracting Officer. However, the KSC Apollo TIE Manager may disapprove such work provided that such disapproval occurs within two (2) days after its submittal to the Contracting Officer.

The Assistant Apollo TIE Managers will designate personnel in their respective directorates who will act as points of contact with the Technical Representatives (Task Directors) and who will provide the day-to-day working relationships with those Apollo TIE Contractor personnel providing support to their organizations.

Assistant Apollo TIE Manager for the KSC Apollo Program Office will be the custodian for Government Furnished Documentation (GFD) required to support the Apollo TIE Program.

- B. Technical Representatives (Task Directors) are hereby established as points of communication and commitment within KSC for each TIE task. The Task Directors will respond to the KSC Apollo TIE Manager and will have the responsibility and the authority for establishing and carrying out in-scope accomplishment of the task. A listing of Task Directors will be established and maintained by the Apollo TIE Manager.

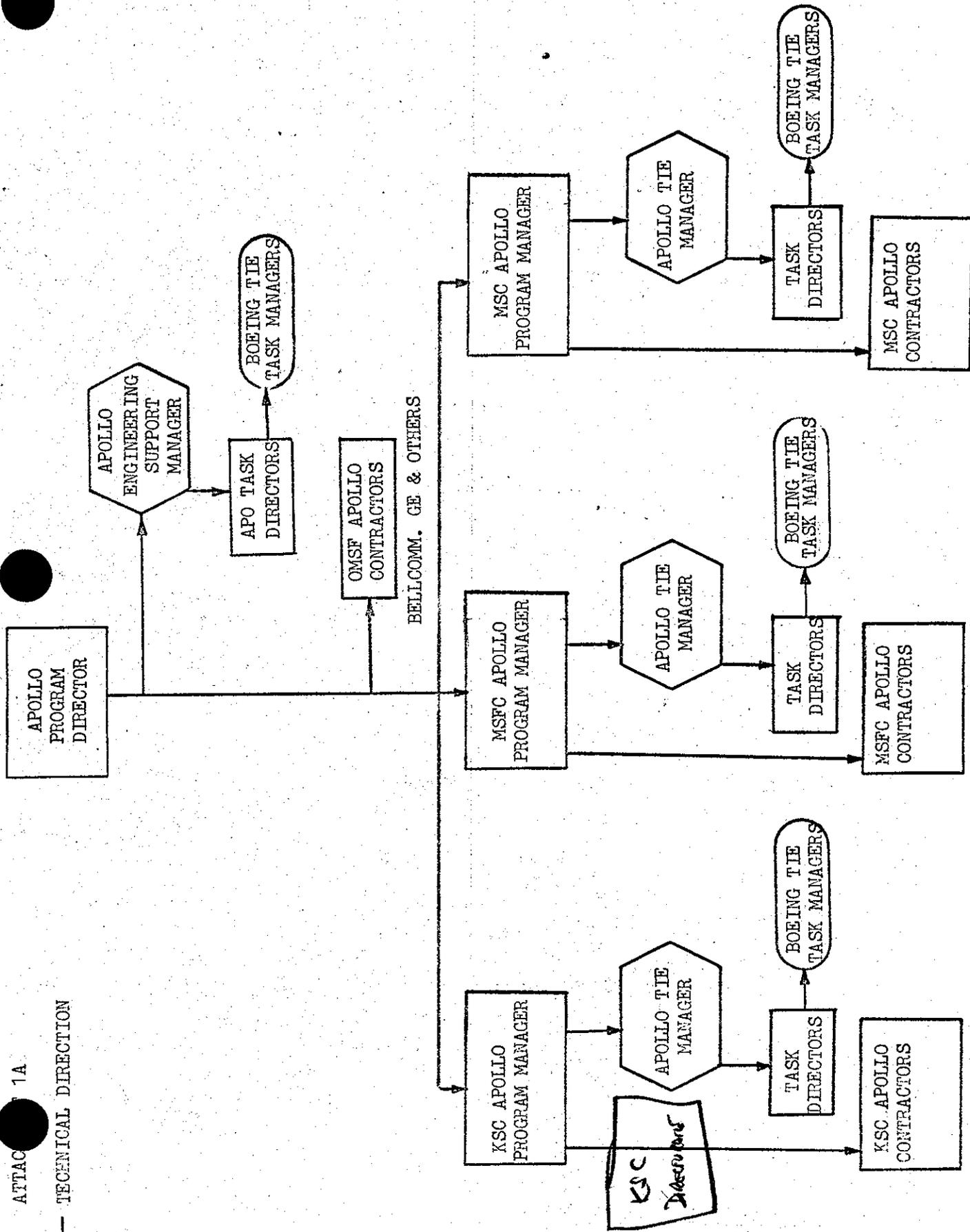
The Assistant Apollo TIE Managers will monitor the progress of the performance of the Apollo TIE Contractor and report thereon to the Apollo TIE Manager at monthly intervals. The Assistant Apollo TIE Managers also will initiate recommendations for revisions to the contractual scope of work as necessary.

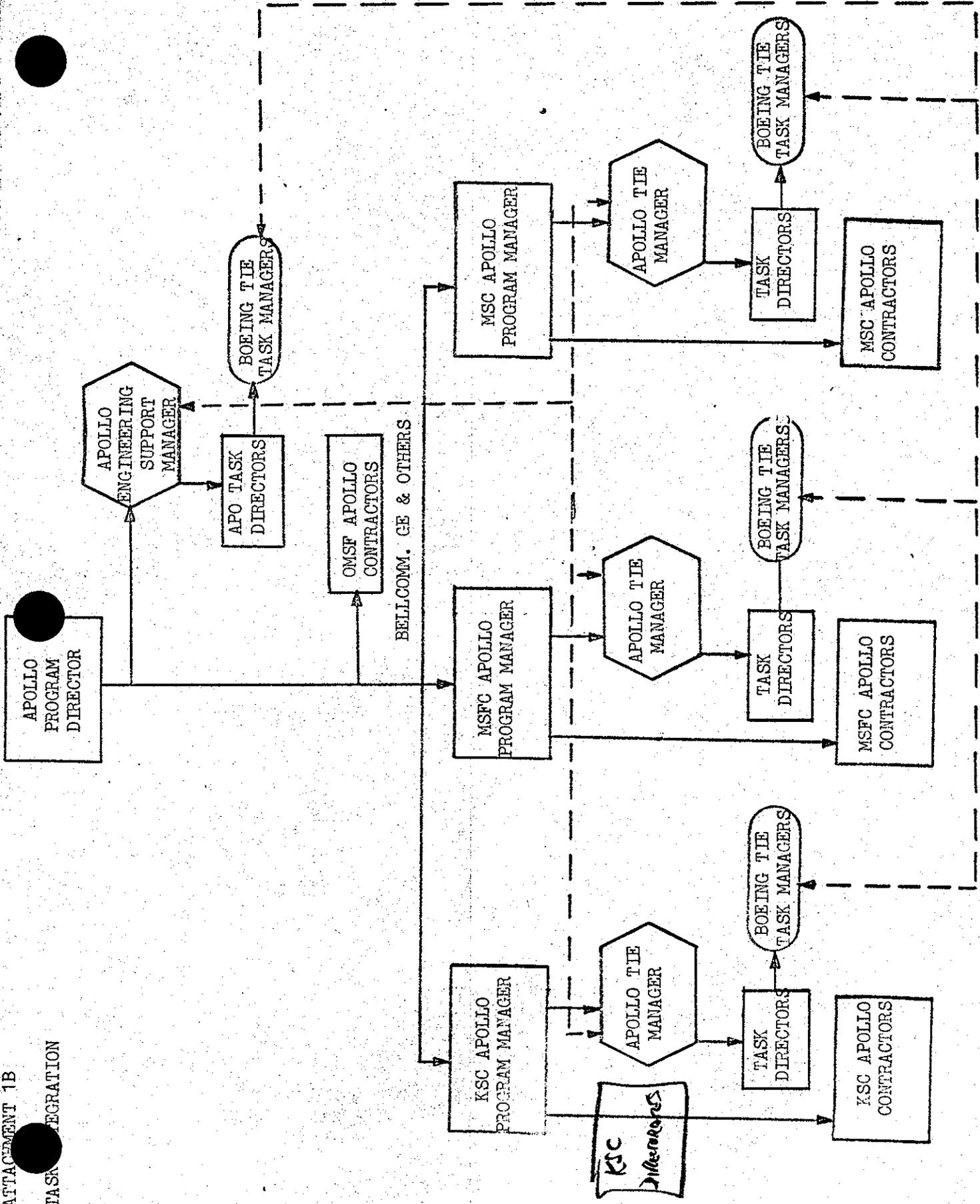
- C. Working relationships among KSC organizations, KSC Apollo TIE Contractor and KSC Contractors, and data flow channels are established by means of the attached networks (Attachments 1A through 1E with 1A through 1D being identical to those in reference 1.)
- D. The KSC Director of Administration will make the necessary arrangements to develop and implement three-party working agreements among KSC, KSC TIE Contractor and applicable KSC Contractors. These agreements will cover:

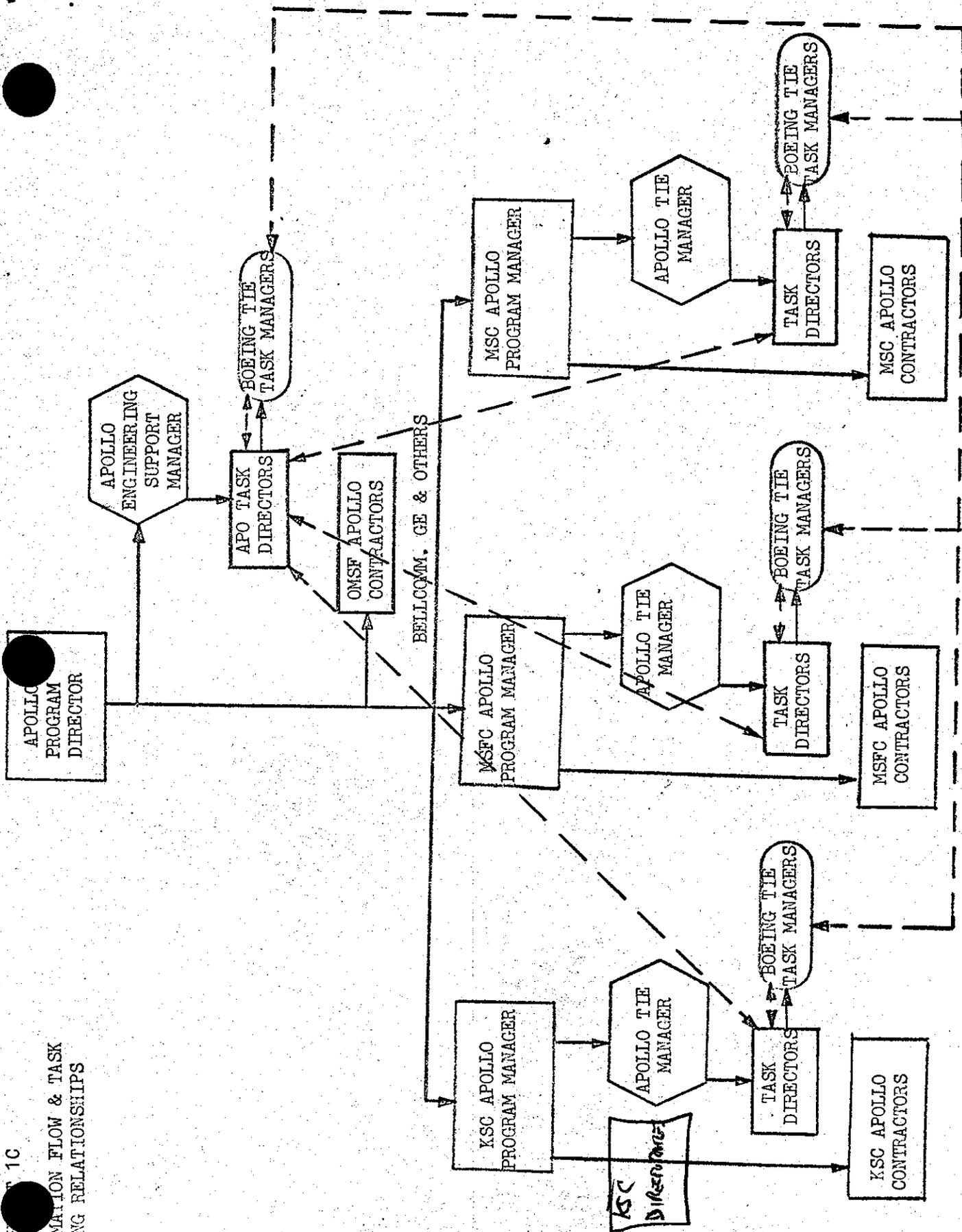
- Technical information exchange
- Identification and understanding of data to be used
- Expediting the acquisition of source or work around data

These working agreements will establish lines of technical communications which are as direct as possible with the Contractor's activity involved without infringing upon the Contractor's proprietary information or mode of operation. The KSC Apollo Technical Integration Manager will be responsible for coordinating with the OMSF APO Technical Director for Integration and Evaluation to develop and implement their working agreements. Attachment II will be used as a guide in the development of the working agreements.

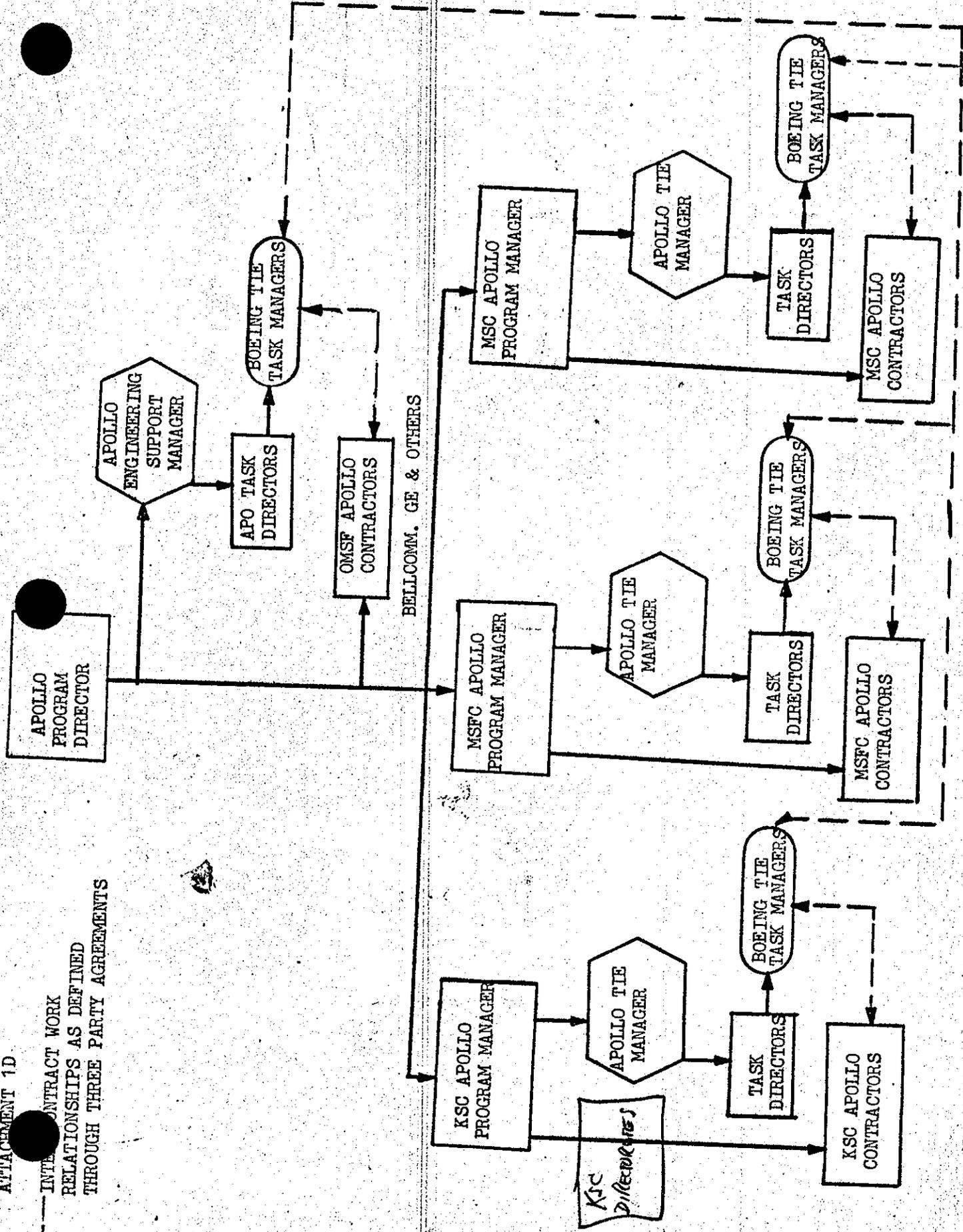
- E. In addition to data sources identified in three-party working agreements, each KSC operating and support director will identify official information and validation sources for all data originating within that directorate. Such lists will be established and maintained by the Apollo Assistant TIE Managers at each directorate. The Director of Installation Support will designate personnel to establish and maintain its list.
- F. In accordance with KSC KN 1142.23, Contract Management Assistance Officers (CMAO) will be appointed within each of the applicable directorates to perform the functions outlined in KN 1142.23.

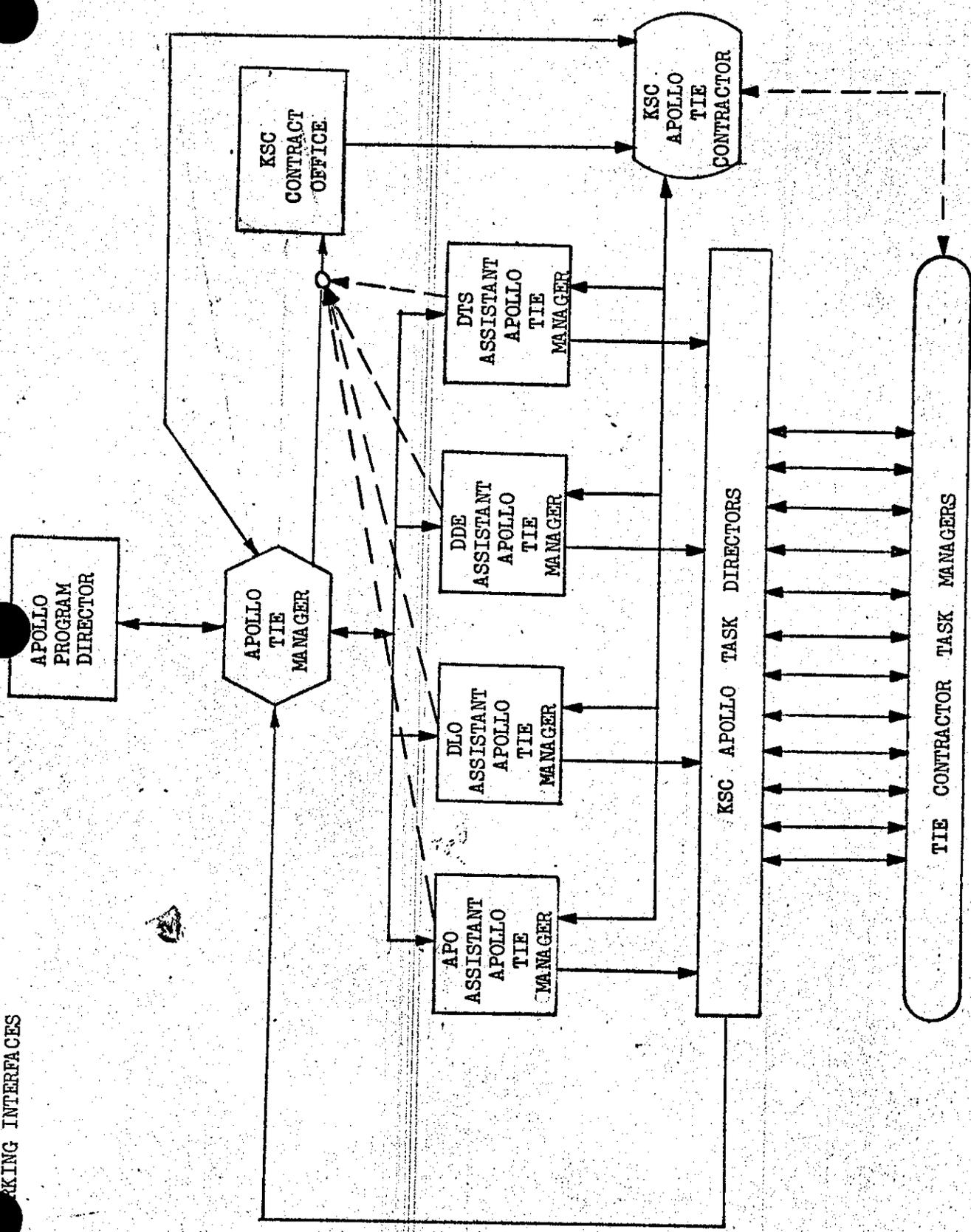






INTERCONTRACT WORK
RELATIONSHIPS AS DEFINED
THROUGH THREE PARTY AGREEMENTS





WORKING AGREEMENT - APOLLO TECHNICAL INTEGRATION

AND

EVALUATION PROGRAM, THE BOEING COMPANY/TIE

KSC/(CONTRACTOR) - NASX-XXXX

1.0 INTRODUCTION

This working Agreement defines The Boeing Company/TIE/(Contractor), NASX-XXXX relationship ground rules to accomplish required coordination and data acquisition in support of The Boeing Company Technical and Evaluation Contract, NASW-1650.

2.0 SCOPE

Technical information and data as discussed in this Agreement are understood to be either deliverable to KSC or within the intent and scope of (Contractor)-NASX-XXXX Contract. (Contractor)-NASX-XXXX will provide the effort necessary to explain the information and data supplied. In the event that a conflict should arise between this Agreement and (Contractor)-NASX-XXXX Contract, the Contract shall govern. If requested information and data are considered to be outside the scope of the Contract, (Contractor)-NASX-XXXX will so advise The Boeing Company/TIE. KSC will take the necessary action to resolve the problem. Further, should information and data requested be considered to be of proprietary, cost or schedule nature by (Contractor)NASX-XXXX, the request shall be referred to KSC for resolution.

3.0 GROUND RULES

3.1 Points of Contact

The Boeing Company/TIE and (Contractor)-NASX-XXXX will provide a single source of contact in order to request data and arrange meetings relative to the acquiring of data. Contacts are:

THE BOEING COMPANY/TIE

Principal _____ Alternate _____

Telephone _____ Telephone _____

Mail Stop _____ Mail Stop _____

DATE: December 26, 1967

KSC APOLLO PROGRAM DIRECTIVE NO. 17

TO: Distribution

FROM: *R. O. Middleton*

SUBJECT: Apollo Technical Integration and Evaluation (TIE) Communications
and Working Relationships

I. PURPOSE

This directive sets forth policy, establishes requirements, and assigns responsibilities necessary to implement effective communications and working relationships for the successful accomplishment of Apollo Technical Integration and Evaluation effort.

II. SCOPE

This directive covers responsibilities, control channels for Apollo TIE data requirements, technical information flow, and working relations among:

- KSC Organizations (Line Directorates and the Apollo Program Manager (APM))
- KSC Organizations and KSC TIE Contractor
- KSC TIE Contractor and KSC Contractors

III. REFERENCES

1. NASA Contract NASw 1650, Apollo Technical Integration and Evaluation.
2. Kennedy Space Center KN 1142.23, December 6, 1966.

IV. IMPLEMENTATION

- A. The KSC Deputy Apollo Program Manager is established as the KSC Apollo TIE Manager. He will be the direct interface with KSC Apollo TIE Contractor for general management matters and with the OMSF APO Director of Technical Integration and Evaluation. He will also be the focal point for setting up the communication and working relationships described in this directive. These communication channels and working relationships will be implemented immediately.

DATE: December 26, 1967

To assure that each KSC organization involved with TIE activities receives appropriate support, TIE Managers are established and will be appointed within the following organizations:

Apollo Program Manager's Office
Directorate of Launch Operations
Directorate of Design Engineering
Directorate of Technical Support
Directorate of Installation Support

These organizational TIE Managers will be designated Contract Technical Managers in accordance with Reference 2. Technical Representatives will be designated in each Directorate and the Apollo Program Office in accordance with Reference 2.

Organizational TIE Managers are responsible for the quality and consistency of work performed by the Apollo TIE Contractor within their respective organizations, and will report the TIE Contractor's performance to the KSC Apollo TIE Manager. Further, each organizational TIE Manager is responsible to assure that Contractor activities remain within and comply with the scope of the contract, or to recommend to the KSC Apollo TIE Manager task deletions or additions to the contract.

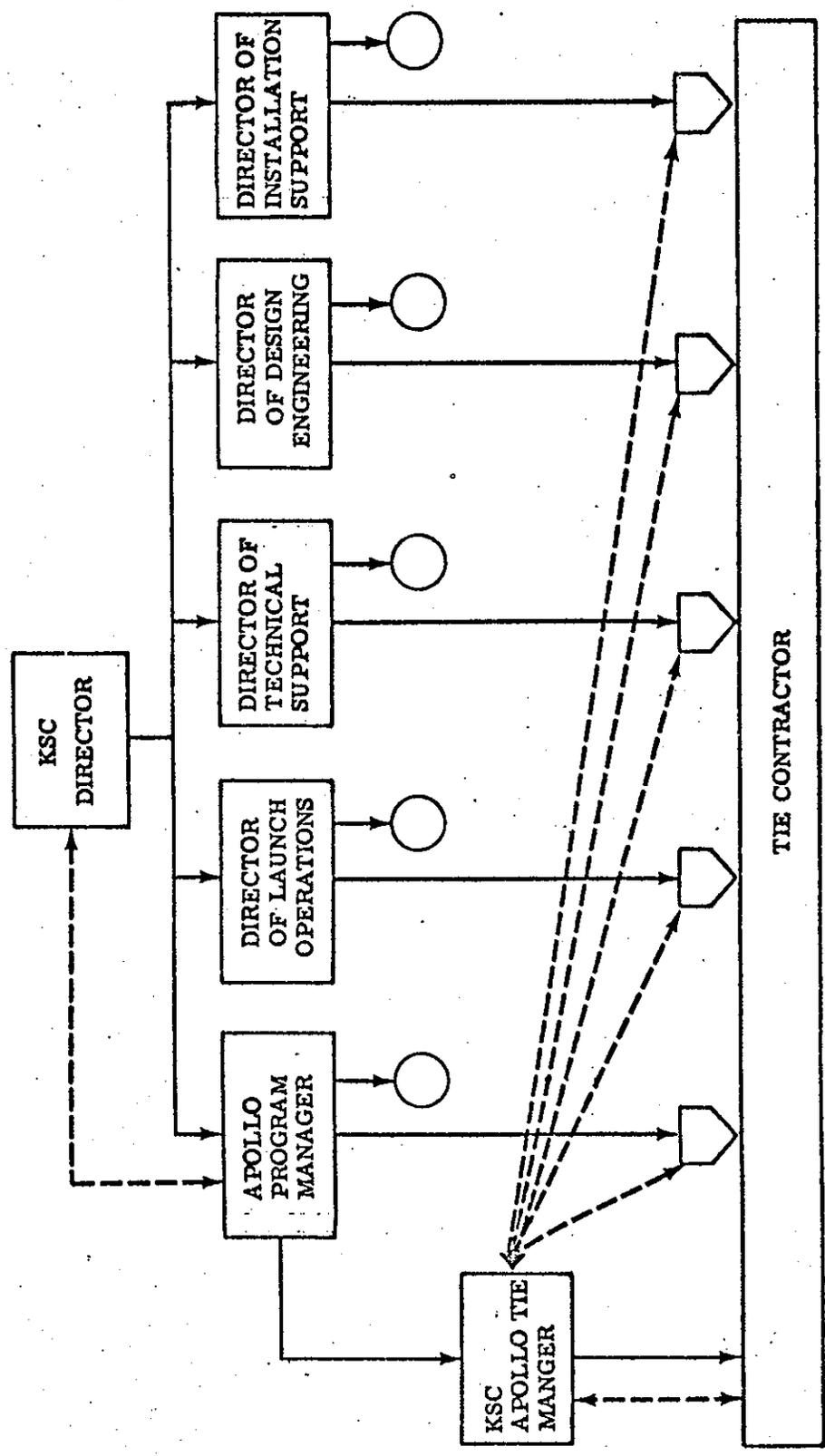
In the event it becomes necessary to initiate a scope change, a proposal will be submitted by the organizational TIE Managers to the KSC Apollo TIE Manager. The KSC Apollo TIE Manager is responsible for the technical approval of scope changes and will submit all such proposals to the Apollo TIE Contracting Officer for negotiation and incorporation into the Apollo TIE contract.

KSC Apollo TIE Task Monitors have been appointed for each TIE Task. These Monitors are responsible to assure inter-organizational, including inter-Center, consistency and to this end will work closely with their counterparts at other Centers and NASA Headquarters. The Task Monitors will not have directive authority, but will provide appropriate recommendations to the KSC Apollo TIE Manager. A listing of the Task Monitors is attached (Appendix I).

DATE: December 26, 1967

- B. Working relationships and communication channels among KSC organizations, the KSC Apollo TIE Contractor, and the KSC Contractors are established by means of the networks defined in Appendix II.
- C. Data/information flow between the TIE Contractor and other KSC contractors will be the subject of subsequent management issuances.

KSC TECHNICAL DIRECTION AND COORDINATION FLOW



◡ = ORGANIZATIONAL TIE MANGER
 ○ = KSC CONTRACTOR

----- TECHNICAL INTEGRATION AND COORDINATION

APPENDIX II
FIGURE IIA

1A

FORM 30

APPROVED

FORM 30

APPENDIX I

TASK

MONITOR

1	W. Clearman, AP-PCO ✓
2	J. Wootton, AP-SYS
3	W. Pearson, AP-PCO
4	M. Gassman, AP-PCO
5	(Reserved)
6	H. F. Blackwood, AP-OPN
7	T. Goldcamp, AP-SYS ✓
8	H. F. Blackwood, AP-OPN
9	R. Kriz, AP-PCO
10	(Reserved)
11	(Reserved)
12	R. Body, AP-ROA
13	W. Pearson, AP-PCO

APPENDIX II

KSC APOLLO PROGRAM TECHNICAL INTEGRATION AND EVALUATION NETWORKS

1.0 INTRODUCTION

These Networks (Figures IIA and IIB) depict graphically the requirements of this Directive which are necessary for the operation of the Apollo TIE Program at KSC.

2.0 TECHNICAL DIRECTION AND COORDINATION FLOW - Figure IIA

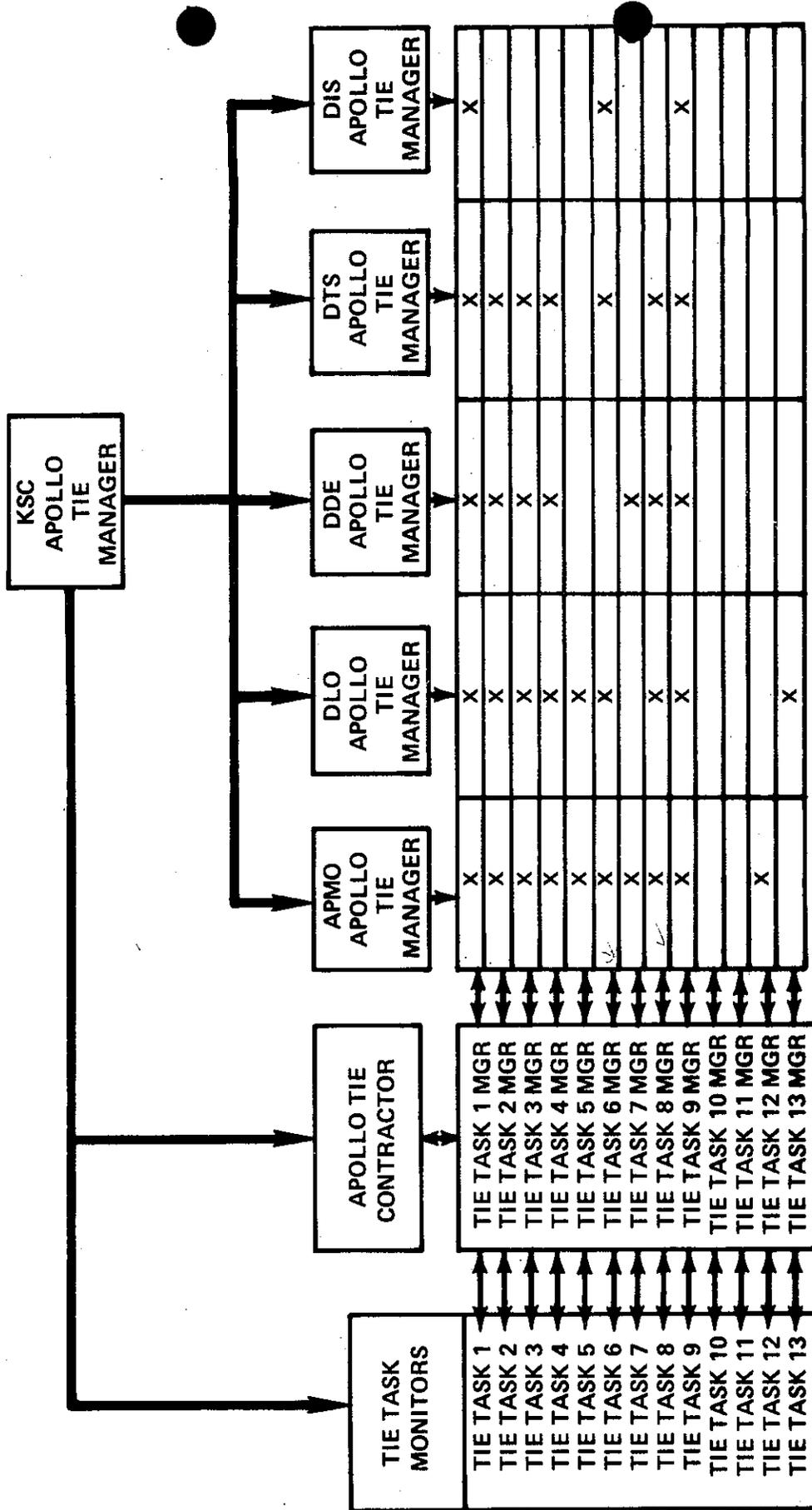
This Figure identifies the channels in which technical direction is to flow for the KSC Apollo TIE activities. Control proceeds from the KSC Director through the Operating and Support Directorates. At this point, the flow diverges: one path, through the organizational TIE Managers, controls the TIE Contractor; the other represents the direct control by the Directorates over the KSC Contractors.

The KSC Apollo TIE Manager is responsible for providing TIE program direction and resolving conflicts within established guidelines. He coordinates, monitors, and tracks the execution of the requirements and the utilization of funds against approved plans and schedules. This monitorship is not concerned with day-to-day operations, but does become involved in problems which interfere, or threaten to interfere, with KSC's ability to meet any of its schedule commitments. The KSC Apollo TIE Manager exercises final approval of all proposed scope changes. The Organizational TIE Managers are responsible for the technical management and monitoring of TIE contractor activities in their respective areas.

3.0 TIE TASK INTEGRATION - Figure IIB

Each Task Monitor, through coordination with the respective Contractor Task Manager, will assure compatibility of effort across those KSC organizations with which his Task interfaces. Should conflicts arise, the KSC Apollo TIE Manager will act to resolve the issues. The KSC Apollo TIE Task Monitors will monitor the TIE Contractor's performance for compatibility within Tasks across all KSC organizations concerned, and will provide appropriate recommendations to the KSC Apollo TIE Manager. Based on these recommendations, the KSC Apollo TIE Manager will confer with the organizational TIE Managers to resolve incompatibilities and conflicts that may occur across a Task.

TASK INTEGRATION



RECEIVED

JAN 2 2 39 PM '68

APOLLO PCM MGR
OPS SUPPORT OFFICE

Kennedy Space Center
 ADDENDUM to APOLLO PROGRAM DIRECTIVE NO. 17

Date: December 26, 1967

Distribution:

EX-SCI	Dr. Knothe	1 cy	TS-CMA	Mr. Keith	4 cys
AP	Adm. Middleton	1 cy	IN	Mr. Sandler	1 cy
AP-SYS	Mr. Wootton	1 cy	IN-DAT	Dr. Bruns	1 cy
AP-PCO	Mr. Guthrie	1 cy	IN-MSD	Mr. Wilkenson	1 cy
AP-PCO-32	Mr. Kent	6 cys	IN-TEL	Mr. Hershey	1 cy
AP-RQA	Mr. Body	1 cy	IN-PLN	Mr. Barney	1 cy
AP-SAT	Mr. Barnett	2 cys	IN-QAL	Mr. Collins	1 cy
AP-SCO	Mr. Beddingfield	3 cys	IN-TEC	Mr. Coonce	1 cy
→ AP-OPN	Mr. Keck	1 cy	SO	Mr. Gorman	4 cys
QA	Mr. McDaris	1 cy	IS-CAS	Mr. Rooney	1 cy
QA-PLN	Mr. Mayse	1 cy	IS-CAS-42	KSC Library	6 cys
QA-AUD	Mr. Mayer	1 cy	IS-SAF	Mr. Atkins	1 cy
AD	Mr. Van Staden	1 cy	IS-QAL	Mr. Gramer	1 cy
LO	Mr. Petrone	10 cys	AA-SVO	Mr. Raffaelli	1 cy
LO	Mr. Pedrick	1 cy	LV-MEC-1	Mr. Scoville	1 cy
LO-RRO	Mr. Betram	1 cy	LV-MEC-2	Mr. Humphrey	1 cy
LO-PLN-2	Mr. Arbic	1 cy	LV-MEC-3	Mr. Corn	1 cy
LS-TOM	Mr. Page	1 cy	IS-CAS-112	Publications, Storage & Issue	30 cys
LV	Dr. Gruene	1 cy	TS-TSM-2	Mr. Bardwell	1 cy
LV	Mr. Rigell	1 cy	TS-TSM-4	Mr. Gramling	1 cy
LV-QAL	Mr. Oswald	1 cy	TS-TSM-5	Mr. Quinn	1 cy
LV-TOM	Mr. Rainwater	1 cy	TS-TSM-6	Mr. Dempsey	1 cy
LV-TOM	Mr. Pickett	1 cy	SO-PLN	Mr. Manton	1 cy
LV-TOM	Mr. O'Hara	1 cy	MAO-3	Mr. Stout	1 cy
LV-TOM-1	Mr. Twigg	1 cy	AP-PCO-31	Mr. Davis	1 cy
LV-TOM-2	Mr. Carlson	1 cy	AP-PCO-33	Mr. Kriz	1 cy
LV-TOM-3	Mr. Bell	1 cy	AA	Col. Morgan	1 cy
LV-TOM-4	Mr. Youmans	1 cy	DE-TEC	Mr. Burke	1 cy
IS	Mr. Williams	1 cy			
IS-GND	Mr. Sasseen	4 cys			
IS-QAL	Mr. Bobik	4 cys			
IS-TOM	Mr. Williams	1 cy			
IS-PLN	Mr. Sizemore	1 cy			
DE	Mr. Preston	5 cys			
DE-MSD	Mr. Zeiler	1 cy			
DE-ESD	Mr. White	1 cy			
DE-FAC	Mr. Dodd	4 cys			
DE-KEM	Mr. Buchanan	1 cy			
DO	Mr. Ross	1 cy			
EX	Mr. Murphy	1 cy			
IS	Mr. Miller	5 cys			
IS-CAS	Mr. Fagnant	1 cy			
DE-KEM-2	Mr. Harris	1 cy			
DE-CEM	Mr. Wasileski	2 cys			
DE	Mr. Williams	1 cy			
DE-TEC	Mr. Fedor	1 cy			
TS	Mr. Clark	5 cys			
TS-TSM-A	Mr. Williams	4 cys			