

LIBYAN ARAB REPUBLIC
POSTS AND TELECOMMUNICATIONS DEPARTMENT

GENERAL CONDITIONS
FOR SUPPLYING AND ASSEMBLING MATERIALS

Contract No. (), for the year

Concerning:

on the day of, date, 139_ H.
corresponding to, 197_ ,
this contract was concluded in the city of

Between:

1. Posts and Telecommunications Department,
Represented, for the signing of this contract, by:
.....
and who shall be notified, for the purposes of this contract,
at the following address:
.....
..... (First Party)

2.
Represented, for the signing of this contract, by:
.....
who is empowered to sign in place of,
.....,
on the basis of an official authorization, dated,
and authenticated at the Libyan Arab Republic Embassy in
....., and who shall be notified, for the

purposes of this contract, at one of the two addresses below:

a) In the Libyan Arab Republic:

.....
.....

b) Outside the Libyan Arab Republic:

.....
.....

(Second Party)

Agreement has been reached between the two parties on the following:

Article 1

Definitions

Wherever the following terms occur in this contract, they shall mean:

1. First Party: Posts and Telecommunications Department.
2. Second Party: The Supplier or Contractor.
3. Supplies: All machinery, equipment, spare parts and their auxiliaries, as well as materials and provisions of all types, and all pertaining drawings and booklets dealing with design or illustration, and with employment or maintenance.
4. Operations and Assembling: Operations and assembling needed for these supplies.
5. Bank of First Party: Any Libyan Bank specified by the First Party.

6. Bank of Second Party: Any foreign bank specified by agreement of the two parties.

Article 2

Integral Parts of the Contract

All appendices of this contract, technical specifications, proposals of the SEcond Party and all correspondence exchanged between the two parties prior to the conclusion of this contract shall be regarded as integral parts of it. Where there is any contradiction between any of the above and the provisions of the contract, the latter shall prevail.

Article 3

Purpose of the Contract

The Second Party shall undertake to carry out the supplying of goods, the operations, and the assembling stipulated in Appendix of this contract, for the prices agreed upon and shown in Appendix, in accordance with the conditions and principles of the following articles.

Article 4

Value of Contract

and Conditions of Payment

1. All supplying, operations and assembling, as well as the expenses and wages of the assemblage workers, experts, shall be carried out in return for a total comprehensive sum

amounting to (.....),
equal to dinars, which shall be distributed as follows:

- | | |
|--|-------------------|
| a) Supplies and spare parts | In figures: |
| | In letters: |
| | |
| b) Civil operations | In figures: |
| | In letters: |
| | |
| c) Assembling and engineering operations | In figures: |
| | In letters: |
| | |
| d) Expenses of experts and trainers | In figures: |
| | In letters: |
| | |

2. Conditions of Payment:

Payment shall be made in the following manner:

- a)% (..... per cent) of the total value of the contract, which shall be disbursed to the Second Party as an advance payment within of the date of signing the contract and registering it in the Tax Department, and of the delivery by the Second Party of the final deposit. The advance payment shall be disbursed in return for a letter of credit - presented by the Second Party, for the same value, and in the same currency - issued by one of the leading banks in the country of the Second Party, and countersigned by one of the leading banks in the Libyan Arab Republic.

This advance payment shall be recovered from the Second Party by deducting, from every payment due to it, a sum having the same proportion of the advance payment; the letter of credit must remain valid until the final deduction of the advance payment from the entitlements of the Second Party. The value of the letter of credit shall decrease gradually by the value of the amounts which are deducted from the entitlements of the Second Party so as to recover the value of the advance payment.

b)% (..... per cent) of the value of every cargo of materials, appliances and equipment imported from abroad, to be paid in the following manner:

1.% of the value of every cargo, which shall be paid to the Second Party, in return for the following documents:
 - i. Bills of lading.
 - ii. Insurance policies.
 - iii. Three copies of the invoices.
 - iv. Three copies of the bills of packing.
 - v. Certificate confirming that the equipment and supplies have been inspected.
 - vi. Certificate showing place of origin, authenticated by the Chamber of Commerce in
 - vii. Certificate giving specifications and proof of good quality.
 - viii. Certificate stating that no shipping is being carried on Israeli ships.

2.% (..... per cent) of the value of every cargo, to be released from the letter of credit presented by the Second Party in return for the advance payment.
- c)% (..... per cent) of the civil, engineering and assembling operations, or any finished services. Payment shall be made as follows:
1.% (..... per cent) of the value of operations, on the basis of monthly statements on operations and categories, presented by the Second Party after being approved by the First Party and checked by its Accounts Department.
 2.% (..... per cent) of the operations given in the approved statements, to be released from the letter of credit presented by the Second Party in return for the advance payment.
- d) Payment of the sums, mentioned in Clause A and in Paragraph 1 of Clauses B and C, shall be made as follows:
-% (..... per cent) of every payment due shall be disbursed locally and in Libyan dinars.
-% (..... per cent) of every payment due shall be disbursed by deducting it from a credit account which the First Party shall open at the bank of the Second Party in the currency. This account will not be open to cancellation, but will be divisible. Payment from the credit account shall be made in return

for the documents mentioned in the above Clauses A, B, and C, that is:

- o with regard to the advance payment:

The contract signed by the two parties and registered in the Tax Department, and a certificate from the First Party attesting that the Second Party has lodged the final deposit.

- o with regard to cargoes imported from abroad:

The documents referred to in Paragraph 1, Clause B.

- o with regard to civil, engineering and assembling operations, or services:

The monthly statements approved by the First Party, according to Paragraph 1 of Clause C.

- e) The rest of the entitlements, accruing to the Second Party from supplying materials or from the execution and presentation of services, shall be paid within one month of the temporary taking possession of all supplies and operations, after ascertaining that the Second Party has carried out all its commitments in the way stipulated by the contract, this having no effect on its commitments during the period of guaranty. Payment of this proportion shall be made in full by means of the credit account mentioned in Clause D, in return for a certificate issued by the First Party acknowledging that the Second Party has fulfilled all its commitments as

required by the contract.

- f) Every letter of credit mentioned in this contract must not be linked by any reservation or condition; the bank must state that it will place at the disposal of the First Party the amount mentioned therein, at the first demand, without taking heed of any objections raised by the Second Party.

Article 5

Quotations

1. The quotations agreed upon in the contract and its appendices shall be regarded as final; they shall not be open to increases by reason of currency fluctuation, or because of higher market prices, production costs and wages, or by reason of amendments in taxes and fees or the imposition of new taxes and fees, or for any other reason. Settlement shall be made according to the actual value of imports and operations.
2. Quotations shall include - in addition to costs - all disbursements and expenses which the Second Party sustains in executing the contract, including the expenses of packing, binding and transport, port and quay fees and revenues, expenses of loading, unloading, assembling, trial, and testing, as well as all other commitments needful for the safety of the supplies or necessary for carrying out all operations until the temporary handing over is accomplished, and

any other commitments stipulated in the contract.

Article 6

Final Deposit

The ensure the proper execution by the Second Party of all commitments laid down in this contract, the Second Party shall deposit with the First Party, within fifteen days from the date of signing the contract, a letter of credit, issued by one of the commercial banks operating in the Libyan Arab Republic, in the principal currency agreed upon in this contract, amounting to 10% of its total value. This letter - in its full value - must be effective as from the date of its issue and until three months after the termination of all guaranty periods stipulated in Article 8 of this contract.

The Second Party must pay the amounts deducted from the final deposit, for whatever cause, and within seven days of being notified by registered letter. If there is any delay, the First Party shall be entitled to deduct these amounts from the entitlements due to the Second Party on the basis of this contract or on any other basis. If the Second Party should have no entitlements, and if it should fail to pay within the stipulated period, in spite of being reminded twice, the First Party becomes entitled to cancel the contract and confiscate the deposit, or to execute the contract at the expense of the Second Party, after notifying it by registered letter, without the need for resorting to the courts or taking any other measures, while keeping its rights for claiming compensation on that account.

Article 7

Period of Executing the Contract
and Delay Fines

1. The Second Party shall undertake to supply all materials stipulated in the contract, and to carry out all operations agreed upon, within a period beginning from, in accordance with Appendix () of this contract.
Included in the period are feast days and public holidays.
2. If the Second Party should fail to execute its commitments within the appointed periods, it will be charged with the payment of a delay fine for the extra period, amounting to two per thousand of the value of the contract, for every week's delay or part thereof, if the First Party decided that the unfinished part will prevent, directly or indirectly, the proper use of the finished supplying and operations. However, if it is decided that the unfinished part does not prevent that, the fine shall be calculated on the value of the unfinished operations only; in all cases, the total sum of the fine shall not exceed 10% of the total value of the contract.

The fine shall become due by the mere fact of a delay, even if there is no resultant damage, without the need for a reminder or notice, or recourse to other measures. The First Party may deduct these fines from any entitlements due to the Second Party.

Payment of the fines shall not exempt the Second Party from the obligation of continuing with the execution of the contract.

Article 8

Guaranty and Maintenance

1. The Second Party shall guaranty that the supplies conform quality, with regard to their make, specifications and the purpose they are designed for, and that they have no hidden faults resulting from a mistake in design or from poor raw materials or inefficient operation. The Second Party shall also guarantee that the supplies, and all their parts, are new and not used, and that they have been manufactured according to the latest international specifications.
2. The Second Party shall also guarantee the safety of the supplies and the operations agreed upon for a period of one year from the date of their being taken possession of; it shall guarantee them from any fault, defect or damage on condition that these do not result from mishandling, bad storage or misuse by the First Party. It shall also guarantee their proper operation, and the provision of maintenance for the equipment that needs it.
3. The Second Party shall undertake to remove the faults that appear during the guaranty period, at its expense, in the shortest possible time and in a manner that will gain the approval of the First Party, either by repairing these

faults of by replacing the articles of supply parts found to be unsound or faulty.

However, if the damage or disorder should recur during the guaranty period, this will be taken to indicate a weakness in the design of a particular part of the machine or in the workmanship, and the First Party shall then have the right to demand the replacement of the equipment or reperformance of the work within a reasonable period which shall be set by the First Party. The replacement and the repeated operation shall have a guaranty period similar to the contract's, beginning from the date of replacement or restoration.

4. The Second Party shall bear all expenses and disbursements resulting from the replacement or reperformance, including the cost of transport, loading, delivery and insurance, whether this is incurred as the article is being returned to the Second Party or on being brought back to the First Party. If the Second Party should fail to carry out the required replacement or restoration, the First Party shall carry it out at the expense and responsibility of the Second Party.
5. The Second Party shall undertake to provide, at its own expense, a number of experts (whose number, duties and period of employment shall be specified in the Appendix to this contract) for the purpose of assembling, operating, testing and maintaining the appliances, equipment, machinery

and other articles included in the contract, during the period of supplying and guaranty, or the period agreed upon in the Appendix to the contract. The Second Party shall be responsible for assembling operations, and for the soundness of instructions given by its experts.

Article 9

Packing, Wrapping, Binding,

Numbering and Loading

1. The Second Party shall undertake to pack, wrap, bind and number the supplies agreed upon, in a convenient and suitable way, consistent with the rules and practices of international commerce, so as to guarantee their safety from damage or loss during air, sea or land transport, such as might result from water seepage, damp, the possibility of breakages, and other similar matters.
2. Each supply clause shall be given a number conforming to the system followed by the Second Party, and every box or package shall have, prominently displayed, a statement showing the equipment and articles it contains, along with their numbers, their specification numbers and all that might help to ascertain and identify the contents, as well as their gross and net weight, and any distinguishing marks pertaining to the box or package.
3. The boxes and packages shall have numbers with information, as follows:

- a) Number of contract.
- b) Port of loading.
- c) Port of delivery.
- d) Consigner.
- e) Number of the box or package.
- f) Gross and net weight.
- g) Name of material or article (a code may be used), as well as numbers, distinguishing marks or signs that the Second Party may think necessary and helpful, depending on the type of supplies. Each package or box must include a list of its contents.

In cases where the equipment - or its parts - is not suitable for putting inside boxes, packages or other containers, the Second Party shall stick on the article a label containing the information mentioned above, and see to it that the label can withstand changes in climatic conditions, storms and handling during transport.

4. The Second Party shall - immediately after the supplies are wholly or partly loaded - inform the First Party of all the cargoes that have been loaded, the name of the transporting ship, the date of its departure, and the expected date of its arrival at the port agreed upon in the Libyan Arab Republic.

The Second Party shall undertake to send by air mail, to the First Party, two photo-copies of all bills of lading and packing forms, within two days of the date of loading,

the forms for each cargo to be sent separately. These papers shall not take the place of the documents mentioned in Paragraph B, Article 4 of this contract.

Article 10

Insurance of Supplies

The Second Party shall undertake to insure at its own expense, the supplies, equipment and machinery, against all danger and error, with a Libyan insurance company, for the duration of their shipment from the port of embarkation to the port of arrival. The insurance must also cover a period of (30) days after taking possession of the supplies in the port of arrival. The Second Party shall also undertake to insure, at its expense, against all risks - whatever the cause - of assembling and operating the equipment and machinery, bearing in mind the provisions of Article (8) of this contract.

Article 11

Inspection, Observation and Supervision

1. The Second Party must notify the First Party when any quantity of supplies agreed upon becomes ready for loading so as to enable the First Party to inspect and test it before loading is complete. Notification should be made not more than thirty days before the appointed date of loading.
2. The representative of the First Party has the right to take

all necessary measures for testing the accuracy of the appliances, implements and parts chosen for investigation. If these should prove to be unsound and inconsistent with the specifications, or if any of the parts lack accuracy, the Second Party must replace them within a period not exceeding thirty days from its being notified by the First Party.

The investigation shall include all experiments and measurements necessary for checking design statements and the standard of accuracy, execution, etc.

3. The representative of the First Party has the right to enter the factories and workshops of the Second Party, at all suitable times, to inspect and test the supplies agreed upon, during and after their manufacture, and to make comments about them. If the supplies - or part thereof - are manufactured in a subsidiary factory, the Second Party must provide all facilities for carrying out inspection and tests, as though the supplies were being made in its own factories.
4. The Second Party - whether in its own factories or those of its subsidiaries - with experts, necessary investigation implements, electric material, fuel, warehouses, workers and all facilities necessary for a more effective inspection and investigation.
5. The supervising engineer appointed by the First Party shall have all the powers of the representative appointed for

inspection and observation mentioned in this Article, whether the contract has to do with engineering, civil, or other similar operations.

He may supervise the operations of the project on the site of the contract, and direct the work and observe its progress. He may, at any time, enter the work sites, in order to view the operations during their execution and he may issue orders and instructions necessary for carrying out the operations or for correcting defects and mistakes, on condition that he puts this in the record book and notifies the Second Party in writing. He may also give out an order, in writing, to stop operations if he feels certain that this is essential for executing the work according to the conditions of the contract and its technical specifications.

6. It is understood that the work of inspection, investigation, viewing, supervision and direction, which the representatives of the First Party carry out in accordance with this Article, does not exempt the Second Party from any commitment or responsibility stipulated in this contract nor does it invalidate any guaranties specified in its provisions.

Article 12

Representatives, Agents, and Relinquishment of Contract

The Second Party is forbidden to take the following action, without prior receipt of a written approval by the First Party:

First: That it should employ, for this contract or by reason of it, any agents or representatives, whether on commission or for any type of payment, inside or outside the Libyan Arab Republic; the Second Party must affirm that the total value agreed upon in this contract and its particulars does not include commissions of any sort.

Second: That it should delegate to others any of the commitments of this contract without the written approval of the First Party.

Should the Second Party violate either or both of these two undertakings, the First Party has the right to take all appropriate measures, including the cancellation of the contract and the confiscation of the letters of credit presented by the Second Party, without the need to resort to the courts or to take any other legal measures, while not prejudicing any rights the First Party may have in the way of compensation.

In cases where the First Party agrees to the delegation of a part of the supplying, operations or assembling to others, the Second Party shall remain fully responsible, in accordance with the provisions of this contract, for all supplying, assembling and operations carried out by others.

Article 13

Training Abroad or at Home

1. If the supplies consist of equipment or machinery that requires the training of Libyan nationals, the Second Party must undertake the training of a number of Libyans, according to the stipulations of Appendix (), to the satisfaction of the First Party, and to the extent agreed upon.
2. Appendix () shall specify who shall bear the expenses of training Libyans, at home or abroad and the expenses of experts and trainers.

Article 14

Boycott of Israel

1. The Second Party shall make a statement disclaiming being domiciled in Israel or possessing Israeli nationality or having a part in any establishment or company existing in Israel, or being connected by any agreement on supplies, assembling, licensing or technical aid, with any establishment or company existing in Israel, or any person resident in it.
2. The Second Party shall affirm - and also undertake - that it has not, and will not, commence any such activities with Israel, whether personally or through an intermediary or some other representative, and that it shall not transport

any of the supplies on Israeli ships, or on ships anchoring at, or setting sail from, Israeli ports.

As a general rule the Second Party must abide by all the regulations and resolutions concerning the boycott of Israel.

3. If the First Party should find that the Second Party has violated its understandings of Clauses 1 & 2 of this Article, it has the right to cancel the contract and confiscate the deposit, without prejudice to its right to claim any compensation due to it, or any other rights.

Article 15

Force Majeure and Emergency

1. Force majeure or emergency consist of sudden events unrelated to either party, which are impossible to anticipate or predict, at the time of the conclusion of the contract, and which make it impossible to execute all the commitments of the contract or parts thereof.

Examples are fate and divine decree, war, revolutions, riots, naval blockades and the like.

Atmospheric changes, rainfall, normal floods, shortage of labour, difficulty of transport, and other matters that can be anticipated, and whose danger can be averted in time, do not fall under force majeure.

2. The Party which is prevented by force majeure from carrying out its commitments must, immediately when this happens, notify the other party in writing of the causes of the delay, supporting their statement by official documents. In such a case neither party is regarded as failing its contractual commitments - as long as force majeure exists.
3. The times appointed in the contract shall be extended by the length of the period of force majeure, on condition that the stoppage of execution shall not exceed six months. If the period of stoppage in supplying goods or in the progress of operations, shall exceed that, the two contracting parties may come to an agreement with regard to measures to be taken for the resumption of the fulfillment of their commitments.

If that should prove difficult, necessary arrangements shall be taken to terminate the contract, without prejudice to their rights and commitments, as specified in the contract.

In the case of force majeure neither party has the right to demand any compensation.

Article 16

Observance of Others' Rights of Invention, Concession or Monopoly

The Second Party shall undertake to observe the rights of others with regard to invention, concession or monopoly, and shall be responsible for all damages that might happen to the First Party as a result of its violation of this undertaking.

Article 17

Export and Import Licenses

The Second Party shall undertake to obtain all necessary permits and licenses, and to take all necessary measures, for exporting and importing the supplies agreed upon or demanded by the nature of the operations or transactions, without any exception.

Article 18

Modification of the Contract

The First Party has the right to modify the subject of the contract by the addition or the subtraction of a proportion which shall not exceed 25% of the value of the contract.

The value of the modifications shall be calculated on the basis of the quotations agreed upon, without any increases; if there are no relevant categories in the contract, the value of the modifications shall be calculated on the basis of world market prices, or on any other basis agreed upon by the two parties.

If the two contracting parties should feel that these additions will make it impossible to complete the operations, the assembling or the supplying within the times agreed upon in the contract, it is possible - after gaining the written approval of the First Party - to extend the time set for carrying out the contract by an extra period proportional to the additions made on the original value of the contract.

Article 19

Taxes, Fees and Royalties

The Second Party shall bear all taxes, fees and royalties imposed by Libyan legislation on the contract and its execution, including customs, stamp duties for concluding and registering a contract, and income taxes in force in the Libyan Arab Republic. There shall be no exemption, unless stipulated by Libyan legislation.

The Second Party shall also bear all taxes, fees and royalties imposed on the contract and its execution abroad. Each party is responsible for the expenses and disbursements it has undertaken to pay.

Article 20

Cancellation of Contract and Withdrawal of Operation

1. The First Party has the right to cancel the contract if the Second Party gravely violates any of its essential commitments;

in particular, the First Party shall have the right to cancel the contract in the following cases:

- a) If the Second Party does not commence the execution of its commitments within, or if it should stop its progress for more than
- b) If it suffers financial difficulties, or becomes bankrupt, or makes a preventive composition to his creditors and also in the case of the Second Party's decease unless there are partners who are willing to carry on the execution of the commitments.
- c) If it violates any of the conditions of the contract, is careless, or fails to carry out an essential commitment, and does not remedy that within fifteen days from the date a letter requiring acknowledgement is sent to it demanding that.
- d) If the Second Party should, personally or through the mediation of one of its employees, resort to deceit, fraud and double-dealing in the execution of the contract.
- e) If the Second Party should fail in fulfilling its commitments with regard to guaranty and maintenance.
- f) If it commits any violation which, according to the provisions of the contract, would entitle the First Party to cancel the contract.

2. Cancellation and the confiscation of the deposit shall take place by means of a registered letter requiring acknowledgment, to be sent by the First Party to the Second Party, without the need of resorting to the courts of taking any other legal action.
3. It is understood that the cancellation of the contract does not prejudice the First Party's right to demand delay fines, or other compensation, for damages incurred as a result of the Second Party's violation of its commitments as stipulated in the contract.
4. If any of the cases mentioned under 1 should come to pass, the First Party, instead of cancelling the contract, may withdraw the work from the Second Party, and complete the unfinished operations and assembling or by elsewhere the articles and supplies that the Second Party did not buy. This shall be done at the expense of the Second Party, in addition to exacting the delay fine. The Second Party shall not be entitled to any sums that might be saved as a result of executing the work at its expense.

In cases where the work is withdrawn, the First Party has the right to impound all or part of what is on the site in the way of installations, machinery, implements, material and otherwise, and to make use of them at the completion of the work. A statement is drawn out of the finished operations and of the machinery, implements and provisions found on the site, within a month of the withdrawal of the

operation, in the presence of the representative of the Second Party, at a time to be appointed by the First Party. If the Second Party should fail to attend, the enumeration will be carried out in its absence, and it is then notified of the result by a registered letter requiring acknowledgment.

Article 21

Amendment of the Provisions of the Contract

The provisions of this contract have been agreed upon by the two parties, and no amendment or alteration to its provisions can be effective unless it has the written approval of both parties.

Article 22

Notices, Notifications and Correspondence

The two parties have agreed that notices, notifications, correspondence and otherwise, dispatched to either party in connection with this contract, to their addresses, inside the Libyan Arab Republic, as given at the beginning of this contract, shall be regarded as valid and causative to all their legal consequences, until one party notifies the other of a change of address.

Article 23

Effectiveness of Libyan Legislation

This contract - and all particulars connected with its execution and interpretation - shall be subject to the provisions of Libyan laws and regulations; the Libyan courts alone shall be responsible for settling disputes arising from this contract.

Article 24

Language of the Contract and its Appendices

Arabic shall be the authorized language of this contract and of the correspondence exchanged about it between the two parties. English may be used in addition to Arabic, if the Second Party is non-Arab, on condition that the Arabic version shall, in all cases, be the one with legal validity.

Article 25

This contract has been drawn up in 25 Articles, and reproduced in 7 copies, three of which have been given to the Second Party, and the remaining ones to the First Party.

Second Party

First Party

.....
Name:
Capacity:
Signature:

.....
Name:
Capacity:
Signature:

APPENDICES OF THE CONTRACT

The following statements and lists shall be considered as appendices to this contract:

- A- List of quantities and prices.
- B- List of spare parts.
- C- List of period of contract.
- D- List of experts and trainers.
- E- Any other conditions which may be required by particular types of supplies.

LIST OF QUANTITIES AND PRICES

By virtue of

The Second Party shall undertake to supply the articles, materials and

shown below, being in conformance with the offer agreed upon,

and having the following particulars:

Serial #	Statement	Number of Article or Code Number	Unit	Quantities	Unit Price	Total Cost	Remarks

Second Party

First Party

SPARE PARTS

The Second Party shall undertake, and shall pledge itself by this affirmation, to supply the First Party with any quantity of spare parts for the equipment, materials and machinery, and with any other appliances stipulated by this contract, for a period of at least ten years from the date of signing this contract, and to carry out the supplying as soon as the First Party makes its demand for the goods, on the basis of a separate contract or contracts, and in conformity with the prices agreed upon by the two parties.

Second Party

First Party

PERIOD OF EXECUTION OF THE CONTRACT

The delivery of supplies and the completion of operations agreed upon shall be carried out within a period of
..... from the date of signing this contract.

Supplying may also be accomplished by instalments, within the following periods:

- 1.
- 2.
- 3.

Second Party

First Party

PROVIDING EXPERTS AND TRAINERS AND
RELEVANT TIME PROGRAMME

The Second Party shall undertake to provide experts and trainers to supervise the work of assembling and operating the machinery and equipment, subject of this contract, and to give Libyan nationals efficient training, according to the following particulars:

Number of Experts:

Their Qualifications:

Their Special Fields:

Required Training Period:

Number of Libyan Nationals to be trained:

Total Number of Training Hours:

Training Outside the Libyan Arab Republic:

Training Inside the Libyan Arab Republic:

Expenses of Experts and the Department responsible for Payment:

Expenses of Trainers and the Department responsible for Payment:

Other Information:

Second Party

First Party

A P P E N D I X

SPECIFICATIONS CERTIFICATE FORM

With reference to our accounts statement No.

Dated, in the amount of

....., contract No.

Dated

We the suppliers guarantee by this certificate the following:

1. That the supplies entered in the above-mentioned statement conform to the most advanced international technological developments, and that they are on a par with the highest standard reached by goods of this type;

In

2. And that they are made of the best type of material, with excellent first class workmanship.
3. And that before these materials were loaded they were examined and inspected by us, and were found fit for use and in conformity with the specifications, the catalogue and the specimens found in the Order.

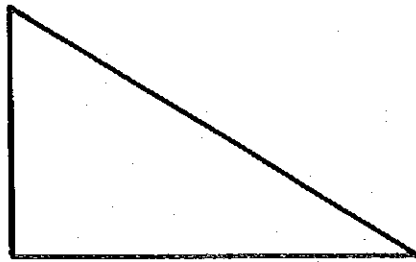
Signature of Supplier

A P P E N D I X

Contract No. Ayn.Qaf/142/

Dated:

We declare that the goods shall be properly packed for shipment, and that every package should have, printed on its two opposite sides, the information shows below:



19

Ayn.Qaf/142

And on the other two sides the following should be printed:

- | | |
|--------------------|--------------|
| 1. Number of Boxes | Gross Weight |
| 2. Box Number | Net Weight |

Benghazi/Tripoli
Libyan Arab Republic

Signature of Supplier

A P P E N D I X

LETTER OF CREDIT FORM

LIBYAN ARAB REPUBLIC

Letter of Credit No.:

In accordance with Contract No.

Dated between yourselves and

..... who shall henceforth be

designated as the Supplier, for supplying

.....

And in pursuance of the provisions of Article 6, of the afore-mentioned contract, which stipulate the Supplier must, within 30 days of signing the contract, lodge a letter of credit amounting to 10% (ten percent) of the total value of the contract, as a final deposit,

We the undersigned, Bank of, undertake by virtue of this letter to place at the disposal of

..... the amount of

which represents 10% of the total value of the contract, this being the value of the final deposit stipulated in Article 6 of the said contract.

We undertake that this guaranty shall bear no interest, and that it will be ready for payment, in cash, party or wholly, as soon as a first demand for that is made by, regardless of any objection raised by the Supplier, by us, or by a third party, whatever its identity,

And that this guaranty shall remain effective until the day of

A P P E N D I X

With reference to Contract No. dated
Between yourselves as one party, and
who shall henceforth be designated as the Supplier, or the Second
Party, for supplying
And according to the provision of Clause No.,
comprising the conditions of payment in the aforementioned
contract, which stipulate that a sum amounting to
....., representing a proportion of %
(.... per cent) of the total value of the contract, shall be
paid in advance to the Supplier,
We, the undersigned, Bank of, undertake by
virtue of this letter to place at the disposal of
..... the amount of,
representing a proportion of% (..... per cent) of the total
value of the contract, this being a guaranty for the advance
payment to be paid by the First Party; we undertake that this
guaranty shall bear no interest, and shall be ready for payment,
in cash, partly or wholly, at the first demand made by the afore-
mentioned administration, regardless of any objection raised by
the Supplier, by us, or by a third party, whatever its identity,
and regardless of any other obstacle. This guaranty shall be
reduced by a sum equivalent to% (..... per cent) of the
total value of the part supplied, this being done after
..... dispatches to us its approval of this
deduction. The letter of guaranty shall be returned to the Bank

concerned for cancellation, at the same time in which we receive the First Party's approval of the last deduction on the guaranty. This monetary guaranty shall remain valid until 19__ ; after this date, and in the case of our receiving no claim for it by the First Party, it shall be regarded as null and void.

SIGNATURE OF BANK

POSTS AND TELECOMMUNICATIONS COMPANY OF LIBYA

Contract of Service for the British Post Office

On the _____ day of the month of _____
 in the year _____ A.H. corresponding with:
 the _____ day of the month of _____
 in the year _____ A.D.

Whereas the Posts and Telecommunications Company of Libya (referred to hereinafter as "the P.T.C.") represented by Mr. A. E. Gherwi as the First Party, and the British Post Office (Referred to hereinafter as "the Consulting Office") whose principal centre is in London and who have taken residence in the Libyan Arab Republic for all the objectives of this contract in Tripoli and are represented by Mr. John Stuart Whyte as the Second Party.

INTRODUCTION

The P.T.C. intends to provide a communications system by submarine cable between Tripoli and Benghazi including land cable extensions to be ready for service by early 1979.

For this reason it has been decided to employ a consulting office which will undertake the work and duties explained below in detail and the two parties indicated above have held introductory discussions which concluded with their agreement that the Second Party undertake the work and duties referred to in its capacity

as the Consulting Office to the First Party in this project, subject always to the conditions explained below.

Therefore the two contracting parties have reached agreement in accordance with the following:

Article 1

The Law Governing the Contract

The preceding Introduction, the agreement to the proposal tendered by the Office and the addenda to the contract and the letter dated 3.6.76 are considered as an inseparable part of the contract, and this contract has been concluded in accordance with, and under the auspices of Libyan law, furthermore, it shall be subject to the provisions of Libyan law in its application and interpretation, and in the event where there is no applicable provision, other legal sources determined by Libyan law shall be reverted to and thereafter the internationally recognised legal provisions and customs relative to work similar to that with which this contract is concerned.

Article 2

The Appointment of the Consulting Office

and the Period of the Contract

The P.T.C.'s choice in accordance with this contract has alighted on the British Post Office in its capacity as Consulting Office for the project of advising on submarine and land based cable

systems between Tripoli and Benghazi so that it may carry out the work and duties defined in Article 3 and Addendum A on the basis of the financial conditions explained in Article 6 and Addendum B of this contract.

Taking into account the detailed provisions found in this contract, the contract is considered operative from the first day of the month of July in the year 1976 A.D.; the above-mentioned Consulting Office must carry out the work which is the subject matter of this contract within the period specified in Addendum A.

Article 3

The Work Assigned to the Consulting Office

In accordance with this contract the Consulting Office undertakes to carry out the work mentioned in detail in Addendum A within the time stipulated therein.

Article 4

The Consulting Office's Obligations in Connection

With the Execution of the Work Assigned to it

In order to guarantee the safe, uninterrupted progress of the project and to carry out the work assigned to it in accordance with the preceding Article and Addendum A, the Second Party is obliged to offer services, undertake the work and provide the number of specialists and officials in the way explained in

detail in the Addendum referred to.

Article 5

The Consulting Office's General Duties

(1) The Consulting Office shall carry out the work assigned to it in its technical, financial and administrative aspects to the best of its ability. It must take such care as would be taken by a specialist in this type of work and make a thorough and complete examination of the documents it has prepared in order to avoid any significant mistake or negligence.

(2) The Consulting Office shall undertake to comply with and implement the laws, rules, decisions and local regulations, and also to respect the administrative statutes and comply with instructions and orders issued by all authorities within their jurisdiction. The Consulting Office must also notify the First Party immediately of any instruction or order which it considers to be an obstacle, preventing it from carrying out any work or duties in the way stipulated in this contract.

(3) The Consulting Office undertakes to respect customs and traditions, both local and national, and shall avoid knowingly doing anything which conflicts with or violates them, and undertakes to avoid violation of the security and public order rules as commonly understood.

(4) If the task of supervision is entrusted to the Consulting Office, the latter undertakes to expend such care in supervising the contractor's work as if it was his own project and it shall inform the P.T.C. immediately in a clear detailed way of any infringement occurring in the execution, or any circumstances occurring during the work, and the P.T.C. shall decide whether to amend, defer or cancel the project, or whether to inspect and take counsel.

The Consulting Office must consult with the P.T.C. on all matters connected with the method of supervising the execution of the project and the progress of the work, and it must obtain the prior written agreement of the P.T.C. (or whosoever is appointed by it from its technical staff for this purpose) in respect of the following matters except on day to day matters which will not change the conditions of the contract or its purpose:

(a) When the Consulting Office, in any contract concluded between the P.T.C. on the one hand and a contractor on the other, is given the authority to issue orders, instructions or directives which result in the introduction of modifications to the work, the general aims of the project or the conditions or method of execution.

(b) When the Consulting Office, in any contract concluded between the P.T.C. on the one hand and a contractor on the other is given the authority to issue orders or instructions including the total or partial stoppage of work for any reason whatsoever.

(c) When the Consulting Office, in any contract concluded between the P.T.C. on the one hand and a contractor on the other, is given the power to settle any dispute which may occur during the execution of the contract or at the final surrender of the work.

(d) When the Consulting Office, in any contract concluded between the P.T.C. on the one hand and a contractor on the other, is given the power to assess damages and additional financial obligations falling to the P.T.C.

(e) If the Consulting Office issues a decision, order, instructions or directives which result in the imposition upon the P.T.C. of obligations other than those clearly stipulated in any contract concluded between the P.T.C. on the one hand and a contractor on the other. Also, if the contract contains a stipulation that the P.T.C. may be given those obligations by agreement of the Consulting Office.

Article 6

Financial Conditions of the Contract

In return for the work which the Consulting Office carries out, the skills in which it is proficient and the service which it offers, the P.T.C. is obliged to pay the amounts stipulated in Addendum B of this contract at the time defined in Addendum B and any other amounts defined in the aforementioned Addendum in Accordance with the conditions mentioned therein.

Article 7

The Compliance with Local Taxation

The Consulting Office, its officials and servants must comply with all the taxes imposed on all forms of income by the Libyan Arab Republic and all other taxes and fees which it may become necessary to pay in accordance with the national laws in force.

Engineering equipment considered necessary for the execution of this project and imported on a temporary basis by the Consulting Office are allowed exemption from customs duties within the limits and conditions stipulated in the customs law and the decree for the temporary import and export of goods, and after the Consulting Office has presented the required securities to the customs authorities.

If the Consulting Office is obliged to pay any customs duty the P.T.C. will refund against documents presented by the Consulting Office proving that it has been paid.

Article 8

The Consulting Office's Failure in its Duties or its Infringement of the Contract Conditions

Part One: If the Consulting Office infringes the provisions of this contract or wilfully fails to meet its obligations, the P.T.C. on its own absolute appraisal and without the necessity of warning or of any legal process, and without prejudice to its rights to

claim any other damages up to the limit of the contract value, may take one of the following courses of action by giving notification in a registered letter:

- (1) Rescind the contract and confiscate the value in the letter of guarantee. In this case the settlement of account with the Consulting Office is completed according to the work which the Consulting Office has completed and which has been handed over to the P.T.C. The P.T.C. is not obliged to pay any other amount, including the expenses incurred in returning the Consulting Office's officials and servants to their country and settling their affairs in Libya.
- (2) Withdraw the work from the Consulting Office and itself undertake, at the Consulting Office's expense, the work which the latter did not complete, either partially or wholly. In this case the Consulting Office has no right to claim for any saving which may be made.
- (3) Withdraw the work from the Consulting Office and come to an agreement with another consulting office for its completion at the Second Party's expense.

In the last two cases the P.T.C. is entitled to recover any expenses or losses it has suffered as a result of the withdrawal of work. This is achieved by deducting from the amount due to the Consulting Office from the P.T.C. for the work completed and handed over to the P.T.C., or due at a future date, whether relating to this contract or another. The P.T.C. may also, without the Consulting Office having the right to object or claim damages, reach agreement with the Consulting Office's officials and servants carrying out work connected with this project the subject matter of this contract regarding their continued services at the P.T.C.'s expense until the project has been completed.

Part Two: The two contracting parties agree that the types of significant infringement of the provisions of this contract are to be considered in inexhaustive examples, as follows:

- (1) If the Consulting Office commits a technical error in its studies or design calculations estimates of quantity or the preparation of plans and drawings relative to the project, or any tender document whether preparatory or final, which exposes the project or part of the project to danger, brings about a loss for

it, diverts it wholly or partially from its original precept, unjustifiably increases its costs or prevents its goals from being realised. The Consulting Office shall not be relieved from full responsibility for the error even if the document or phase of the project containing the error has been approved by the P.T.C.

- (2) If the Consulting Office delays groundlessly and unjustifiably in its preparation of the general and detailed studies, designs and drawings or the engineering documents necessary for its execution.
- (3) If the Consulting Office submits incorrect information or if favouritism is shown towards one of the tenderers where the project is thrown open for public tender and the Consulting Office is used to examine the tenders and makes a recommendation which infringes the principle of equality among the tenderers.
- (4) If the Consulting Office does not meet its obligations as defined in Article 5, Paragraph 4 of this contract.
- (5) If it persists in breaking the laws in force in the country or is disrespectful towards customs and traditions.

- (6) If the Consulting Office resorts to fraud or corruption in its dealings with the P.T.C. or the contractors, if it is discovered that the Consulting Office, directly or indirectly, has initiated any corruption or secret understanding with a P.T.C. official, if it is discovered that the Consulting Office has connived with one of the contractors appointed to carry out the project or that it has received from one of them a gift or monetary or financial promise in return for overlooking an infringement committed by them or another party which has damaged the P.T.C.'s interest, or if it is discovered that the Consulting Office has an interest with one of the contractors which would influence its behaviour towards them in its supervisory task.
- (7) If the Consulting Office without the written agreement of the P.T.C. incorporates in the technical specifications for the project the subject matter of this contract conditions specifying the use of materials, tools and equipment from a certain factory or producer whereby it is impossible for a bidder to submit tenders from other factories or producers for the materials, tools or equipment necessary to the project. The provisions of this Article also apply where the Consulting Office withdraws or resigns

without the P.T.C.'s agreement.

Article 9

Modifications to the Project

The P.T.C. has the right at all times to introduce modifications or changes to the project the subject matter of this contract, concerning its objectives or scope, provided such modifications or changes do not reach the point where they would lead to a fundamental change so that it would be considered a new project; the P.T.C. also has the right to reduce or increase the size of the project. The order to change or modify the project or to reduce or increase its size, must be issued after the written agreement of the two contracting parties to the extra fees due to the Consulting Office or to the reductions of the fees stipulated in this contract.

Any order to modify, change or increase agreed to by the Consulting Office without prior agreement to the fees pertaining thereto is considered tantamount to absolute renunciation by the Consulting Office of any additional fees deriving therefrom.

If the two contracting parties cannot reach agreement on the modifications, changes, reduction or increase, whether from the technical or financial point of view, the contract shall be considered terminated and the Consulting Office shall behave financially as though the P.T.C. had cancelled the contract and in accordance with the conditions and regulations stipulated in Article 12 of this contract.

Article 10

Collapse or Destruction of the Work for a Reason Beyond the Control of the Two Contracting Parties

If the work is totally or partially destroyed during the execution of the project for a reason beyond the control of the two contracting parties and it is necessary for the Consulting Office to undertake new works concerning the design or supervision of the rebuilding or repair of the section or sections of the project which were destroyed or damaged, the Consulting Office is entitled to additional remuneration to which agreement has been obtained in accordance with the stipulation of Article 9 of this contract.

Article 11

Postponement of the Project by the P.T.C.

The P.T.C., at any time and according to its own absolute assessment, may postpone the project the subject matter of this contract and the Consulting Office has no right to oppose the P.T.C.'s decision to postpone the project or to dispute the reason for it. Also, the P.T.C. at any time and according to its absolute assessment may resume the work of the project using its own technical equipment or another consulting office and the Second Party to this contract has no right to object or to claim any damages resulting from the work being extimated to the parties mentioned above.

The Consulting Office, in cases where the P.T.C. decides to postpone the project, the subject matter of this contract for more than a year, may choose between asking that the contract be terminated and remaining bound by it. If it is requested that the contract be terminated, the Consulting Office shall proceed in accordance with the provisions of Article following. In cases where the P.T.C. decides to postpone the project for not more than one year or the Consulting Office accepts a postponement of more than one year and remains bound by the contract, the Consulting Office is entitled to claim expenses incurred as a result of the decision to postpone, agreement on the amount of these expenses must be concluded in writing by the two contracting parties before the termination of the postponement. If agreement as to the amount of expenses in cases of postponement for not more than one year cannot be reached, the contract shall be considered terminated and the Consulting Office shall behave as though the P.T.C. decided to terminate the contract, while retaining its right not to grant compensation stipulated in Article 12 of this contract.

Article 12

Termination of the Contract by the P.T.C.

The P.T.C. at any time and at its own absolute discretion, may cancel this contract. The Consulting Office has no right to object to the P.T.C.'s decision to cancel the contract or to dispute the reasons for it. The P.T.C. may also resume the work

on the project at any time making use of its own technical equipment or another consulting office and the Consulting Office which is the Second Party to this contract is not entitled to object or to claim any damages resulting from the work being entrusted to the parties mentioned.

If the P.T.C. terminates the contract the Consulting Office shall proceed in the following way:-

A. If the contract is confined to one of the three following stages:-

1. The first stage involving studies and the preparation of preliminary plans.
2. The second stage comprising final designs and the preparation of tender documents.
3. The third stage comprising supervision of the work's execution.

The Consulting Office shall be entitled to part of the remuneration defined in the contract for that stage, the part to be paid being directly proportional to the work of the Consulting Office in that stage which has been completed in addition to compensation at the rate of 15% of the fees for the state itself.

B. If the contract contains more than one of the stages mentioned in (A) above the Consulting Office shall be entitled to:-

1. The full amounts mentioned in Addendum B for the stages which the Consulting Office have actually completed.

2. Part of the amount defined in Addendum B for the stage during which the contract was terminated, the part to be paid being directly proportional to the work in that stage which has been completed in addition to compensation at the rate of 15% of the fee for phases A or B and at the rate of 5% for phase C.

The two contracting parties agree that the amounts which result from the application of the provisions mentioned in this Article represent the way in which they have come to terms in respect of the full compensation covering all the losses resulting out of the termination of the contract by the P.T.C.; furthermore, the Consulting Office is not entitled to claim any other compensation or to ask that his compensation be completed in any other or by following any other rules.

Article 13

Damage to Third Parties, Their Property, or Officials and Servants of the Consulting Office

Without prejudice, the P.T.C. is entitled to claim from the Consulting Office damages for losses which may befall the P.T.C.'s property, officials or servants as a result of the work or behaviour of the Consulting Office, its officials or servants. The P.T.C. shall not be responsible for any losses which may befall third parties or their property, or officials or servants of the Consulting Office as a result of work carried out by the Consulting Office, its officials or servants.

Responsibility for these losses shall be borne by the Consulting Office.

The Consulting Office must safeguard the P.T.C. against all claims of the type described above and it is equally obliged to return to the P.T.C. without dispute or delay and without the necessity for a legal appeal any amount imposed upon the P.T.C. or which it is compelled to pay if a claim is made against it for any reason. The P.T.C. must notify the Consulting Office of any claim of this type in order that it may participate in replying to the claim and take any action it sees fit defending its position against it.

If the Consulting Office does not act promptly in paying the compensation which has been ordered in the cases mentioned above, the P.T.C. has the right to deduct the amount of compensation from amounts which may be due to the Consulting Office under this contract or any other. The amount in the letter of guarantee shall not be returned to the Consulting Office as long as there are claims directed against the P.T.C. in the cases mentioned above, and so that these claims may be settled in a way which preserved the rights of the P.T.C. and insurer if against the consequences of its claim for compensation.

Article 14

Ownership of Records and Documents

The P.T.C. is considered to be the absolute owner of all the original records and documents prepared by the Consulting

Office exclusively for the project the subject matter of this contract, including drawings, designs, plans, schedules indexes, specifications and reports and the like, and the Consulting Office must surrender tracings of such drawings and plans to the P.T.C. if requested.

The P.T.C. is entitled to use the records and documents mentioned above in executing the project the subject matter of this contract, or any other projects which it may undertake, supervise or finance wholly or partially. The responsibility of the Consulting Office is limited to the use of these records and documents in respect only of the project which is the subject matter of this contract.

The P.T.C. is also allowed absolute disposal of the mentioned records and documents without the Consulting Office having the right to claim any compensation.

The Consulting Office is considered wholly responsible for any claim or compensation arising from the infringement by itself of any prerogative or right hold in the designs, names, trademarks and the like connected with the records and documents prepared for the project the subject matter of this contract.

Article 15

Resignation From the Contract

and the Use of Other Consulting Offices

The Consulting Office may only relinquish some or all of its rights to a third party with the written agreement of the P.T.C.

and subject to such conditions as the P.T.C. sees fit.

The Consulting Office, at its own expense and with the written consent of the P.T.C., may use other consulting offices; the Consulting Office the Second Party to this contract is considered responsible for these offices and their work for the P.T.C., in accordance with the provisions of this contract.

Article 16

Information With Which the Consulting Office is Provided

Bearing in mind the stipulations of this contract, the P.T.C. will provide the Consulting Office with all necessary information that is available and which may be necessary or useful to the Consulting Office in its undertaking the work and duties entrusted to it in this contract and the Consulting Office should make sure of the information which the P.T.C. provides for its assistance.

Article 17

Facilities Provided for the Consulting Office by the P.T.C.

The P.T.C. shall provide at no cost to the Consulting Office such reasonable facilities as are required for the execution of this project.

Article 18

Settlement of Disputes

If complete mutual understanding and amicable means do not terminate a dispute or disagreement arising out of the application or interpretation of the contract conditions, the jurisdiction for examining it shall be Libyan law.

Article 19

Conformity With Boycott Provisions

The Consulting Office is prohibited from importing into Libya any materials, tools or equipment from Israel or which were manufactured in Israel, and undertakes to respect the rules and regulations of the Boycott office.

Article 20

The Language of the Contract

This contract, consisting of twenty Articles, and twenty pages and two Addenda, is considered as a whole and is indivisible. Twenty copies, with an English translation have been issued in the city of Tripoli.

Should there be any difference between Arabic and English translations, the Arabic text shall be considered for the interpretation of this contract.

Signature of First Party

Signature of Second Party

KOKUSAI DENSHIN DENWA CO., LTD.

KOKUSAI TSUSHIN CENTER P.O. BOX NO. 1
3-2, NISHI-SHINJUKU 2-CHOME
SHINJUKU-KU, TOKYO 160, JAPAN

REF.

CABLE ADDRESS: KDD TOKYO
TELEX: J22500 KDDTOKYO
TELEPHONE: TOKYO 347-7111

Tokyo, November 18, 1976

Mr. A. E. Gherwi
Director General
Posts and Telecommunications Corporation
Tripoli, Libyan Arab Republic

Dear Sir,

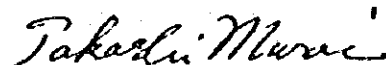
SUBJECT: Scope of Work to be Performed by KDD for
Planning and Implementation of Earth Stations
in the Libyan Arab Republic

In compliance with your request, we have the honor to submit herewith three(3) copies of "Scope of Work to be Performed by KDD for Planning and Implementation of Earth Stations in the Libyan Arab Republic".

We shall be grateful if you will, on close examination thereof, let us know your views on the contents of the draft as early as possible.

We are going to despatch our staff to Tripoli to advance the matters necessary for concluding the contract of consultancy between PTC and KDD after receiving your response to this message and your request for despatching.

Yours very truly,



Takashi Muroi

Manager

International Cooperation Office

(DRAFT)

APPENDIX A

SCOPE OF WORK TO BE PERFORMED BY KDD

FOR

PLANNING AND IMPLEMENTATION OF EARTH STATIONS

IN THE LIBYAN ARAB REPUBLIC

APPENDIX A

SCOPE OF WORK TO BE PERFORMED BY KDD

FOR

PLANNING AND IMPLEMENTATION OF EARTH STATIONS

IN THE LIBYAN ARAB REPUBLIC

KDD shall provide PTC with consulting services described below to facilitate the implementation of earth stations for INTELSAT satellite communications system and domestic satellite communications system organized by PTC.

The consulting services shall be carried out by the following five (5) working phases.

The period of respective phases is given below:

Phase I: Preparation of Basic Design Documents

KDD shall conduct the consulting services for the period commencing within three (3) months after the effective date of the contract, and terminating at the time of submission of basic design documents.

The period of the phase shall be five (5) months.

Phase II: Preparation of Technical Specifications and Training Plan

KDD shall conduct the consulting services for the period starting with the reception of notification from PTC the final conclusion and decision against the submitted basic design documents, and terminating at the time of submission of technical specifications and training plan.

The period of the phase shall be five (5) months.

Phase III: Evaluation of Proposals and Assistance in Conclusion
of Contract of Earth Stations Construction

KDD shall conduct the consulting services for the period starting with the forwarding of invitation letters to bidders, and terminating at the time of concluding the contract of earth stations construction between PTC and the selected contractor.

The period of the phase shall be six (6) months.

Phase IV: Supervision of Construction of Earth Stations

KDD shall conduct the consulting services for the period starting on the effective date of the contract of earth stations construction, and terminating at the time of provisional acceptance of the earth stations complex.

The period of the phase shall be sixteen (16) months.

Phase V: Supervision of Operation and Maintenance of Earth
Stations and of Training

KDD shall conduct the consulting services for the period starting with the completion of provisional acceptance of the earth stations complex, and terminating at the end of two years' supervision of operation and maintenance.

The period of the phase shall be twenty-four (24) months.

1. Scope of Work in Phase I

1.1 Earth Station(s) for INTELSAT System

1.1.1 Study of International Traffic Demand and Future Traffic Estimation

KDD shall study the following items with reference to the materials and data obtained from PTC.

- (1) Study of present status and future plan of international telecommunications network in the Libyan Arab Republic.
- (2) Study of past and present traffic volume, present number of circuits and signalling conditions in each destination or country concerning the services of international telegraph, telex, telephone and others including leased circuits.

In this study, the following factors necessary for traffic estimation will also be included.

- Busy hour and busy hour calls
 - Average words per message
 - Average connecting time, holding time and waiting time
 - Cancelled call rate
- (3) Traffic estimation of each service for future ten years based on the past traffic data considering the presumed annual growth rate which will be obtained taking into consideration the past annual growth rates, typical examples of KDD and/or other countries, transition of the amount of trade, future plan of domestic telecommunications network, merit of wideband transmission system realized by the introduction of satellite communications system.

- (4) Estimation of necessary number of satellite circuits of each service in direct destination and transit destination based on the above-mentioned traffic estimation after distributing all traffic volume to other possible routes through HF, submarine coaxial cable, international microwave link and OH systems.
- (5) Allocation of satellite circuit destinations to the Atlantic Ocean Region and Indian Ocean Region, and recommendation on the initial and final capacity of earth stations, type of communications services and introduction of SPADE terminals.

1.1.2 Site Selection

In selecting a suitable site for an earth station, many factors must be taken into consideration in relation to economy, technology, geographical requirements and telecommunications policy and so on.

KDD will select two or three proposed sites in or in the suburbs of Tripoli and Benghazi cities respectively and make comparison thereof in the form of a table taking into consideration the factors described below.

KDD will also work out two plans concerning the location of the earth station(s) at the request of TPC, i.e. one earth station with two antennas, one for Atlantic Ocean Region satellite and the other for Indian Ocean Region satellite, with the station located in or in the suburbs of Tripoli city only; and two earth stations with one antenna each, one for Atlantic Ocean Region satellite which will be located in or in the suburbs of Tripoli city and the other for Indian Ocean Region satellite in or in

the suburbs of Benghazi city, giving economic, technical, geographical and telecommunications political reasons to expedite PTC judgement in selecting one from the two plans.

The factors will be studied with reference to the materials and data obtained from relevant authorities through PTC.

- (1) Study of the possibility of mutual interference between the proposed earth station(s) and the existing or planned radio station(s) operating on the same frequency band.

In this case, considerations will be given to the following CCIR Recommendations and Reports.

- CCIR Recommendations: 359-3, 355-2, 356-3, 357-2,
(Geneva, 1974) 358-2, 406-3.
- CCIR Reports: 382-2, 388-2, 448-1, 406-3,
(Geneva, 1974) 209-3, 386-2, 387-2, 393-2,
449-1.

- (2) Study of existence of harmful noise with a help of PTC staff and measuring equipment supplied by PTC.

- (3) Study of meteorological conditions in the regions.

Meteorological data, which will be obtained from meteorological observatory through PTC, consist of the following:

- Wind direction
- Wind velocity
- Humidity and precipitation
- Maximum, minimum and average atmospheric temperature
- Sandstorm
- Thunderbolts

- (4) Study of historical seismic data obtained from the meteorological observatory through PTC.
- (5) Study of geographical conditions utilizing maps of the regions on the scale of 1/50,000 and/or 1/250,000 and data obtained from relevant authorities through PTC.
Geographical conditions consist of the following.
 - Skyline
 - Geographical shielding effect
 - Subsoil condition and/or data
 - Water availability
 - Topographical features
- (6) Study of land procurement and area.
- (7) Study of sources of primary power, emergency power, water service and sewage facilities.
- (8) Study of availability of transportation including access road construction.
- (9) Study of housing and dwelling conditions.
- (10) Study of future city planning.
- (11) Study of propagation condition and frequency plan of microwave link (availability of one or two hops line-of-sight link) between the earth station(s) and the existing or planning telecommunications centre.
- (12) Study of air routes concerning radio interference.

1.1.3 Preparation of Coordination Data and Recommendation to PTC

KDD shall prepare coordination data necessary for coordinating relevant adjacent Administrations according to the stipulations of Final Acts of the WARC-ST, Geneva, 1971 and ITU Radio Regulations (639AN), and make necessary recommendation to PTC to commence coordination with relevant Administrations and the IFRB pursuant to the procedures specified in the ITU Radio Regulations.

1.1.4 Preparation of Basic Design of Earth Station(s)

- (1) Preparation of schematic block diagram of earth station(s) taking into consideration the type of services, destinations, number of circuits, etc. described in Items 1.1.1-(4), -(5).
- (2) Preparation of a rough site layout and room layout plan.
- (3) Preparation of basic design of electronic equipment and machinery of the earth station(s) which will mainly consist of the following.
 - a) Antenna pedestal and antenna equipment including tracking receiver, drive and servo control, and control and monitor equipment.
 - b) High power amplifier.
 - c) Low noise receiver.
 - d) Ground communications equipment including up/down converter, FM modulator/demodulator and baseband equipment.
 - e) Telephone multiplexing equipment including engineering service circuit equipment.
 - f) SPADE terminals (optional).

- g) Television system converter (optional).
- h) Control and monitor equipment including television control, monitor and test equipment.
- i) Test and measuring equipment.
- j) Power supply equipment including substation, standby diesel engine generator(s) and no-break power equipment.

1.1.5 Preparation of Basic Design of Microwave Link

- (1) Preparation of recommendable frequency plan, system capacity and system configuration.
- (2) Preparation of schematic block diagram of microwave link and example of propagation profile.
- (3) Preparation of basic design of electronic equipment of microwave link which will mainly consist of the following.
 - a) Antenna including tower(s), feeder and duplexer.
 - b) RF transmitter and receiver.
 - c) Modulator and demodulator.
 - d) Sound/video combiner/separator.
 - e) Switch control and supervisory equipment.

1.1.6 Preparation of Basic Design of Equipment for Telecommunications Centre

- (1) Preparation of schematic block diagram of equipment for telecommunications centre.
- (2) Preparation of basic design of equipment for telecommunications centre which will mainly consist of the following.

- a) Telephone multiplexing equipment including order wire equipment.
- b) Television control, monitor and test equipment.
- c) Echo suppressor.
- d) Voice frequency telegraph equipment.
- e) No-break power equipment including power distribution board.

1.1.7 Estimation of Construction Cost and Number of PTC Personnel for Operation and Maintenance of Earth Station(s) Complex

- (1) Rough estimation of construction cost of earth station(s) complex for INTELSAT system.
- (2) Recommendation of the organization and number of PTC personnel necessary for management, operation and maintenance of earth station(s) complex.

1.1.8 Study and Recommendation of Interface Conditions

KDD shall study and recommend to PTC interface points and conditions between the equipment for the project and the existing and/or planned building(s) and equipment.

- (1) For earth station
 - a) Study and recommendation of interface point, receiving voltage, required power capacity, number of lines and phases, breaking capacity of primary power, and supplier and location of demand power meter.
 - b) Scope of work of PTC and contractor
 - Construction of access road and primary power line.
 - Land procurement and rough adjustment of site.
 - Civil and architectural work including earth station building, related station facilities and water work.

(2) For Telecommunications Centre

- a) Study and recommendation of interface point in each service.
- b) Study and recommendation of interface conditions in each service.
- c) Scope of work of PTC and contractor
 - Building and floor space, station facilities and water work
 - Power supply

1.1.9 Recommendation to PTC of Modification and Extension of the Existing Equipment and Building(s) and/or New Construction Plan

1.2 Earth Stations for Domestic Satellite Communications System

1.2.1 Study of Present Status and Future Plan of Principal Towns and Cities

KDD shall study the present status and future plan of principal towns and cities with reference to the materials and data obtained from relevant authorities through PTC necessary for the site selection, location and construction of the earth stations.

1.2.2 Study of Present Status of National Telecommunications Network and Future Plan in the Libyan Arab Republic

KDD shall study the present status and future plan of national telecommunications network in the Libyan Arab Republic with reference to the materials and data obtained from PTC necessary for the selection of site, type of communications services and establishment of satellite circuits.

1.2.3 Study of Toll Traffic Demand and Future Traffic Estimation

KDD shall study the following items based on the materials and data obtained from PTC.

- (1) Study of past and present traffic status of toll telegraph, telex and telephone services, and television and radio broadcasting services between principal towns and cities.
- (2) Estimation of annual growth rate and toll traffic forecast of each service for future ten years.
- (3) Estimation of necessary number of satellite circuits for each service based on the above-mentioned traffic estimation after distributing the traffic to other existing or planned systems.
- (4) Recommendation of the type and location of earth stations, type of communications services, number of toll circuits and type of communications systems based on the traffic demand.

1.2.4 Site Selection

KDD shall recommend to PTC the proposed site of earth stations for domestic satellite communications system after conducting the same process described in sections 1.1.2 and 1.1.3.

1.2.5 Preparation of Basic Design of Earth Stations

- (1) Preparation of system configuration and fundamental circuit design of domestic satellite communications system.
- (2) Preparation of schematic block diagram of each type of earth stations.
- (3) Preparation of basic design of electronic equipment and machinery of the earth stations.

1.2.6 Estimation of Construction Cost and Number of PTC Personnel for Operation and Maintenance of Earth Stations

1.2.7 Study and Recommendation of Interface Conditions

KDD shall study and recommend to PTC interface conditions between the equipment for the project and the equipment of existing and/or planned toll telephone, television and radio broadcasting stations.

- (1) Interface point between the equipments mentioned above will be at the main distribution frame located in each earth station.
- (2) Study and recommendation of interface conditions in each service at interface point.

1.3 Submission of Basic Design Documents

KDD shall submit to PTC five (5) copies of basic design documents including reports and recommendations.

2. Scope of Work in Phase II

KDD shall provide PTC with the consulting services described below according to the conclusion decided by PTC on a draft of the basic design submitted by KDD in Phase I.

2.1 Preparation of Technical Specifications

KDD shall prepare technical specifications of earth station(s) for the INTELSAT system and domestic satellite communications systems. The contents of the technical specifications will consist of the following.

- a) General description
- b) Product assurance requirements
- c) Description of earth station(s) site and Telecommunications Centre
- d) General performance requirements
- e) Description and characteristics of communications equipment of earth station(s)
- f) Description and characteristics of communications equipment of microwave link
- g) Description and characteristics of communications equipment of Telecommunications Centre
- h) General requirements for earth station building, related facilities and civil work
- i) Spare and tool
- j) Installation work and workmanship
- k) Test and guarantee
- l) Operation, maintenance and training
- m) Publication and drawings
- n) Annex (drawings, figures and reference data)

- Overall block diagrams of earth stations for INTELSAT and domestic satellite communications systems
- Earth station site map
- Site layout and building layout
- Meteorological data
- Subsoil data

2.2 Preparation of Training Plan

The training of operation and maintenance staff shall be carried out by the contractor. KDD shall prepare the plan and schedules of the trainings in factories, on sites prior to the provisional handover and during the operation and maintenance period in Phase V.

The items of training executed by the contractor will be as follows:

- a) Basic and advanced electronic engineering theory
- b) Communications system operation theory
- c) Operation and maintenance procedures and practices of supplied equipment
- d) Specific operation and maintenance procedures for satellite communications earth station
- e) Training in factories and/or on sites
- f) Practices of station administration procedures

The contractor shall prepare the detailed training programmes, text books and materials for the "in-plant" and/or "on-site" training and for the operation and maintenance training.

2.3 Advice on the Negotiation Procedures with INTELSAT, Administrations and Authorities Concerned

(1) INTELSAT

The negotiations and procedures under the provision of INTELSAT documents BG-22-59E (W/7/76) "Procedures governing application, approval, verification, and operation of earth stations in the INTELSAT system".

(2) The negotiations and procedures with Administrations and Authorities Concerned

- Coordination of RF bands 3.7 to 4.2 GHz and 5.925 to 6.425 GHz initiated in accordance with Final Acts of the WARC-ST, Geneva, 1971 with relevant Administration(s)
- Coordination with relevant authorities for establishing international and national satellite circuits

2.4 Advice on General Matters of the Call for Bids

PTC shall furnish to KDD the information on invitation letter, instructions for bid submission, general terms and conditions and contract documents formats, and KDD shall furnish the advice to PTC, if necessary.

2.5 Submission of Technical Specifications and Training Plan

KDD shall submit to PTC five (5) copies of the technical specifications of earth stations for INTELSAT and domestic satellite communications systems (draft), and the training plan (draft).

3. Scope of Work in Phase III

KDD shall provide PTC with the consulting services described below according to the conclusion decided by PTC on a draft of the technical specifications submitted by KDD in Phase II.

3.1 Preparation for the Call for Bids

- (1) Submission of fifty (50) copies of the final technical specifications to PTC.
- (2) Advice to PTC on the selection of bidders, if so required.
- (3) Advice to PTC with respect to the Call for Bids (Tender Open).
- (4) Answer to the questions from the bidders on the technical matters in the technical specifications.

3.2 Evaluation of Proposals

(1) Technical evaluation

KDD shall evaluate the technical proposals submitted by the bidders in due consideration of the following.

- a) Adequacy of the offered proposals
- b) Study on the offered overall system
- c) Flexibility and expansibility of the offered system
- d) Adaptability of the offered conditions to the detailed requirements in the technical specifications
- e) Study on the offered equipment
- f) Study on the offered manufacturing process, implementation method of the project and the detailed schedule
- g) Study on the validity of the system reliability (MTBF and MTR) calculations and the overall performance calculations

- h) Review of the contractor's servicing for long term period including the operation and maintenance, the training and the spare parts
- i) Review of the project management control and engineering services
- j) Review of the technical comments on the bidders' acceptance and non-acceptance conditions

(2) Price evaluation

KDD shall evaluate the offered price in due consideration of the following.

- a) Review of the offered price formats and the breakdown
- b) Preparation of the offered price comparison table
- c) Analysis of the offered price

3.3 Submission of Assessment Report

KDD shall submit the assessment report to PTC including the recommended successful bidder(s).

3.4 Assistance for Conclusion of the Contract

KDD shall assist to PTC for the preparation of the contract and the conclusion with the contractor.

- (1) Advice to PTC on the technical matters at the time of PTC's negotiations with the successful bidder(s).
- (2) Study and recognition of additions, modifications and deletions in respect of the technical requirements requested by the successful bidder(s).
- (3) Advice to PTC for the preparation and conclusion of the final contract.

4. Scope of Work in Phase IV

KDD shall provide PTC with the consulting services described below from the time when the contract concluded between PTC and the contractor comes into effect.

4.1 Supervision of Construction Work

- (1) Supervision of the site(s) preparation conditions and recognition of the acceptance conditions.
- (2) Study and approval on the design review documents including diagrams and drawings. As for the architectural and civil works, the consulting services to be rendered to PTC by KDD shall be limited to monitoring to see whether or not the layout and electrical conditions are in conformity with the specifications and to giving necessary advice in this connection.
- (3) Supervision of the civil and architectural works in progress.
- (4) Supervision of the installation and wiring work of the equipment at the sites.
- (5) Supervision and adjustment of the offered work schedules.
- (6) Review and validation of the components and substitute of equipment.

4.2 Execution of Factory Inspection

KDD shall carry out factory inspection for the equipment to be supplied by the contractor. The following items will be included in the factory inspection test.

- (1) Review and validation of the factory test plan and the schedule submitted by the contractor.

- (2) Review and validation of the test procedures and the measuring equipment submitted by the contractor.
- (3) Inspection of the equipment test in the factory.
- (4) Review and validation of the test data and reports submitted by the contractor.
- (5) Issue of certificates for the factory inspection.

4.3 Supervision of Test at the Sites including Provisional Acceptance Test

- (1) Review and validation of the implementation of the test plan and schedule submitted by the contractor.
- (2) Review and validation of the test procedures and measuring equipment submitted by the contractor.
- (3) Supervision of the on-site test for the subsystems and the system including loop and connection tests.
- (4) Review and validation of the data and reports for the test submitted by the contractor.
- (5) Review of the equipment instruction manuals and the final drawings.
- (6) Inventory of the communications equipment, spares and tools, and the documents delivered.

4.4 Supervision of "In-plant" and "On-site" Training

KDD shall supervise "in-plant" and "on-site" trainings carried out by the contractor. The training will include the following items.

- (1) Review and validation of the training programmes and materials.
- (2) Supervision of the training.

4.5 Supervision of Verification and Line-up Tests

KDD shall supervise the verification and initial line-up tests of the earth stations for the INTELSAT and domestic systems.

4.6 Advice on the Negotiation Procedures with INTELSAT, Administrations and Authorities Concerned

4.7 Submission of Monthly Progress Report

5. Scope of Work in Phase V

KDD shall provide PTC with the consulting services described below after the provisional acceptance of the facilities installed by the contractor under the contract with PTC.

5.1 Evaluation of Test Results

KDD shall evaluate the results of the provisional acceptance test and the verification test with INTELSAT and submit the test results.

5.2 Supervision of the Reliability of the Equipment Installed by the Contractor

- (1) Review of the outage data on the equipment submitted by the contractor. The outage data will consist of the following items.
 - a) Outage number
 - b) Date and time
 - c) Duration of outage
 - d) Services affected
 - e) Name of outage subsystems
 - f) Cause of outage
- (2) Assistance to PTC in the making of outage reports to INTELSAT.
- (3) Recommendations for the improvement of availability of equipment in case of failing to keep the proposed reliability.

- (4) Review of the final acceptance reports submitted by the contractor.

The final acceptance of the earth station complex will be carried out at the end of the guaranteed period of the equipment installed, i.e., the end of the first year of the operation following its provisional acceptance. The final acceptance programme shall be accomplished without interruption to the normal earth station operation. The contractor shall prepare and submit to PTC the reports which will consist of the following. The consultant shall review his reports and submit the results to PTC.

- a) Station performance history to date.
- b) Comparison of the significant performance data with the original performance specifications.
- c) Submission of the station logs demonstrating compliance of the earth station with the requirements specified.
- d) Recommendations for the continued operation and maintenance, and effective utilization of the earth station.
- e) Inventory of components, spares, tools and other materials for operation.

5.3. Supervision of the Operation and Maintenance of the Earth Station

- (1) Advice to PTC and the contractor concerning the operation and maintenance of the earth stations based on the documents of INTELSAT Satellite System Operations Guide (SSOG).
- (2) Review of the station logs for the operation and maintenance.

- (3) Advice to PTC concerning the preparation of reports to INTELSAT.
- (4) Review of the regular maintenance programmes submitted by the contractor.
- (5) Supervision of the trouble shooting and repairing work on the outage equipment.
- (6) Advice to PTC concerning the purchase and inventory control of equipment, components, spares, tools and consumable materials.
- (7) Advice to PTC in modification of the earth station equipment for the establishments of new chain(s) and/or alternating of the radio frequency and channel arrangement.

5.4 Supervision of the On-the-job Training Carried Out by the Contractor during the Operation and Maintenance Period

- (1) Review of the training programmes and the test books.
- (2) Supervision of the On-the-job training.

5.5 Advice to PTC on the Negotiation Procedures with INTELSAT, Administrations and Authorities Concerned

- (1) Assistance to PTC in submitting verification test reports to INTELSAT.
- (2) Assistance to PTC in executing initial line-up tests and in submitting daily reports to the Technical and Operational Control Centre (TOCC) on the progress and test results.

- (3) Assistance to PTC on the handling of INTELSAT documents including information on the Satellite System Operations Plan (SSOP) which will be sent to PTC.
- (4) Advice to PTC in coordination with the Administrations and/or authorities concerned in establishing or changing international circuits.

ADDENDUM A

リビアアラブ共和国衛星通信地球局建設に対する

KDDの提供業務範囲

1976年11月

国際電信電話株式会社

海外協力室

A D D E N D U M A

リビアアラブ共和国衛星通信地球局建設に対するKDDの提供業務範囲

(Scope of Work to be Performed by KDD for Planning and Implementation of Earth Stations in the Libyan Arab Republic)

KDDはリビアアラブ共和国におけるインテルサット衛星通信系へアクセスする衛星通信地球局および国内衛星通信系地球局の建設に関し、P T Cに対し次に述べるコンサルティング業務を提供する。

これらの提供業務は5つの Phases に分けて実施し、それぞれの実施期間は下記を見積る。

Phase I ; 基本設計書 (Basic Design) の作成期間

本契約発行後3ヶ月以内に作業を開始し、基本設計書の提出をもって終了する。期間は作業開始後5ヶ月を見積る。

Phase II ; 技術仕様書 (Technical Specification) の作成期間。

提出された基本設計書に基づき、P T Cが実施内容の最終結論をKDDに通知後、直ちに作業を開始し、技術仕様書の提出をもって終了する。期間は5ヶ月を見積る。

Phase III ; 入札、入札審査および建設契約書締結の期間。

最終技術仕様書の印刷を開始した時点に始まり、P T Cが落札者 (契約者) と建設契約書に署名した時点をもって終了する。期間は6ヶ月を見積る。

Phase IV ; 衛星通信地球局の建設の期間。

建設契約書が発効した時点に始まり、P T Cが衛星通信地球局を仮受取り (Provisional Acceptance) した時点で終了する。期間は16ヶ月を見積る。

Phase V ; 衛星通信地球局の保証期間および初期運用・保守・訓練の実施期間。

衛星通信地球局と仮受取りを完了した時点に始まり、契約者による2年間の初期運用・保守の期間が経過した時点で終了する。期間は24ヶ月を見積る。

1. Phase Iに於ける提供業務範囲
(Scope of Work in Phase I)

1.1 インテルサット系衛星通信地球局
(Earth Station(s) for INTELSAT System)

1.1.1 国際通信の需要および将来予測

KDDはPTCの提供する資料に基づき下記の調査を行う。

- (1) リビア・アラブ共和国における国際電気通信網の現状と将来計画の調査
- (2) PTCに於ける過去および現在の国際通信の対地別、サービス別(国際電報、国際テレックス、国際電話およびその他…専用回線も含む)取扱量および回線数の調査。
各サービスの最繁忙時およびその呼量、平均語数、平均保留時分、平均接続時分、平均待ち時間、キャンセル呼数等需要予測に必要な事項の調査も行う。
- (3) 上記取扱量をもとに年伸び率(過去の実績、KDD and/or 他諸国の実例、国際貿易量との相関、国内電話事情、衛星通信導入に伴なう広帯域効果等により想定)を推定し向う10年間の需要予測を行う。
- (4) 上記需要予測に基づき、衛星通信対地、中継対地および他通信手段(HF、海底同軸ケーブル、国際マイクロ回線、OH回線 etc.)への配分を行い、所要回線数を算定する。
- (5) 衛星対地を大西洋地域、インド洋地域に配分し、設備容量(初期、最終)、通信サービスの種類、SPADE導入の可否を検討し勧告する。

1.1.2 置局選定 (Site Selection)

置局選定にあたっては経済的、技術的、地理的および通信政策的要素を考慮に入れ、Tripoli市およびBenghazi市周辺に各々2~3個所の候補地を選び下記に述べる点からみた比較表を作成提出する。

また、地球局をTripoli市およびBenghazi市周辺に1局ずつ大西洋地域、インド洋地域としてそれぞれ別々に建設すべきか(2局2アンテナ)、Tripoli市周辺1個所に両地域用地球局(1局2アンテナ)を建設すべきか経済的、技術的、地理的および通信政策的な要素を考慮に入れ、各々のadvantage, disadvantageのcomparison tableを作成提出しPTCの判断の材料に供する。

置局選定にあたっては、PTCを通じ関係機関から得た資料に基づき次の検討を行う。

- (1) 国内に現存または計画中のradio station(s)とproposed sitesに於けるearth stationとの相互干渉の可能性の検討。

その場合次のCCIR Recommendations, Reportsを参考にする。

CCIR Recommendations	359-3, 355-2, 356-3, 357-2
(Geneva, 1974)	358-2, 406-3

CCIR Reports	382-2, 388-2, 448-1, 406-3
(Geneva, 1974)	209-3, 386-2, 387-2, 393-2
	449-1

(2) PTCの用意する機材と労務の提供を得て Harmful Radio Noise の存在の Study をする。

(3) PTCを通じ気象機関から得た気象 Data の検討。

気象 Data としては次のものが必要である。

wind direction, wind velocity, humidity, precipitation,
thunderbolt, maximum, minimum and average atmospheric
temperaure, sandstorm

(4) PTCを通じ気象機関から得た地震 Data の検討

(5) Geographical Conditions の Study

PTCを通じて得た Map (5 万分の 1 and/or 25 万分の 1) および Data を利用して
skyline, geographical shielding effect, subsoil condition,
water availability, topographical features の検討を行う。

(6) Study of land procurement and area

(7) Study of sources of primary power, emergency power, water service,
sewage facilities.

(8) Study of availability of transportation including access road
construction.

(9) Study of housing and dwelling conditions.

(10) Study of future city planning.

(11) Study of propagation condition and frequency plan of microwave
link (availability of one or two hops line of sight link)
between the earth station and the existing or planning telecommuni
cation centre.

(12) Study of air routes concerning radio interference.

1.1.3 Coordination Data の作成と勧告

Final Acts of the WARC-ST, Geneva, 1971 および ITU Radio
Regulations (639 AN) の規定に基づき, 隣接国との Coordination に必要な
Coordination Data を作成し, 関連主管庁との Coordination を開始すべき勧告をPT
Cに行う

1.1.4 Preparation of Basic Design of Earth Station(s)

(1) 1.1.1(4), (5)の通信サービス, 衛星対地, 回線数に基づき, Earth Station の Schematic Block Diagram を作成する。

(2) 概略の Site Layout, Room Layout を作成する。

(3) 地球局通信設備の Basic Design を作成する。

地球局通信設備の主なものは次のとおり。

- a) アンテナベデスタル, アンテナ設備 (追尾, 駆動および監視制御装置を含む)
- b) 大電力送信機
- c) 低雑音受信機
- d) 周波数変換, 変復調およびベースバンド装置
- e) 電話多重端局装置 (技術打合回線装置を含む)
- f) スペード端局装置 (Option)
- g) テレビジョン方式変換装置 (Option)
- h) 監視・制御装置 (テレビジョン監視・制御・試験装置を含む)
- i) 試験装置および測定器
- j) 電力設備 (変電所, 自家発電設備, 無停電装置を含む)

1.1.5 Basic Design of Microwave link

(1) Frequency plan, system capacity, system configuration の recommendation の作成

(2) Schematic block diagram, example of profile の作成

(3) Microwave link equipment の Basic Design の作成

Microwave link equipment の主なものは次のとおり。

- a) アンテナ, アンテナタワー (フィーダー, ダイプレクサーを含む)
- b) 送受信機
- c) 変復調装置
- d) 音声/ビデオの合成/分離装置
- e) 切替・監視・制御装置

1.1.6 Basic Design of Equipment for Telecommunications Centre

(1) Schematic block diagram の作成

(2) Equipment for telecommuications centre の Basic Design の作成

Equipment for telecommunications center の主なものは次のとおり。

- a) 電話多重端局装置 (打合回線装置を含む)
- b) テレビジョン監視・制御・試験装置

- c) エコーサブレッサー
- d) 音声帯域電信多重装置
- e) 電力設備(無停電装置, 分電盤)

1.1.7 地球局設備の cost 見積りと地球局要員の算定

- (1) Earth station(s) complex for INTELSAT system 建設費の rough estimate.
- (2) Earth station complexの運営に必要な組織と要員数の recommendation

1.1.8 インターフェース条件の勧告

本プロジェクト既設又は将来の局舎および設備との相互接続条件を PTC に勧告する。

(Interface point and condition)

(1) Earth station side

- a) Primary power の受渡し点, 受電電圧, 電源容量, 線数および相数, breaking capacity, demand power meter の設置の要・不要
- b) Scope of work of PTC and Contractor
 - Construction of access road, primary power line
 - Land procurement and rough adjustment of site.
 - Civil and architectural work including earth station building, related station facilities and water work.

(2) Telecommunications centre side

- a) 通信サービス別の interface point.
- b) 通信サービス別の interface condition.
- c) Scope of work of PTC and Contractor.
 - Building and floor space, station facilities, water work
 - Power supply

1.1.9 既設・新設設備および局舎に対する勧告

Recommendation to PTC concerning modification, extension of the existing equipment and building(s) and/or new construction plan of equipment and building(s).

1.2 国内衛星通信系地球局

(Earth Stations for Domestic Satellite Communications System)

1.2.1 主要都市の現状と将来計画の調査

PTCを通じて得た資料に基づき, 地球局の置, 建設に必要な主要都市の現状と将来計画

を調査する。

1.2.2 国内電気通信網の現状と将来計画の調査

PTCを通じて得た資料に基づき地球局の置局、通信サービス、回線設定に必要な国内電気通信網の現状と将来計画の調査を行う。

1.2.3 市外通信量の需要と将来予測

PTCを通じて得た資料に基づき下記の Study を行う。

- (1) PTCに於ける過去および現在の主要都市間の通信サービス別（電報、テレックス、電話、テレビジョン、放送）通信量の調査
- (2) 年伸び率を推定し、向う10年間の需要予測を行う。
- (3) 需要予測に基づき、既存又は将来導入予定の他の通信手段への配分を行い、所要回線数を算定する。
- (4) 需要予測に基づき、地球局のクラス分けと設置都市（初期・終期）、通信サービスの種別、回線数（初期・終期）、通信方式の動告を行う。

1.2.4 置局選定

1.1.2と同様の方法で Study を行い地球局候補地を動告する。

1.2.5 Basic Design of Earth Stations for Domestic Satellite Communications System

- (1) Domestic Satellite Communications Network の system configuration と fundamental circuit design を作成する。
- (2) 各種地球局の schematic block diagram を作成する。
- (3) 各種地球局設備の Basic Design を作成する。

1.2.6 Estimation of construction cost and number of PTC personnel of earth stations for domestic satellite communications system

1.2.7 インターフェイス条件の動告

各地球局と現存又は将来建設予定の市外電話局、TVおよびラジオ放送局とのインターフェイス条件についてPTCに動告する。

- (1) Interface point は各地球局に設置するMDFとする。
- (2) Interface condition は調査のうえPTCに動告する。

1.3 Basic Design Documentsの提出

KDDは、basic design documents including reports and recommendations を5部PTCに提出する。

2. Phase II に於ける提供事務範囲

(Scope of Work in Phase II)

Phase I で提出された基本設計書に対し、PTC が下した最終結論に従い、次の提供業務を行う。

(1) インテルサット系衛星通信地球局および国内衛星通信系地球局の技術仕様書の作成

技術仕様書には次の内容が含まれる。

- a) General Description (Purpose, Project outline, Scope of Work etc.)
- b) Product Assurance Requirements
- c) Description of Earth Station Site and telecommunications Centre
- d) General Performance Requirements
- e) Description and Characteristics of Electronic Equipment of Earth Stations
- f) Description and Characteristics of Electronic Equipment of Microwave Link
- g) Description and Characteristics of Electronic Equipment of Telecommunications Centre.
- h) General Requirements for Earth Station Building
- i) Spare and Tool
- j) Installation Work and Workmanship
- k) Test and Guarantee
- l) Operation and Maintenance, Training
- m) Publication and Drawings
- n) Annex (Drawings, Figures and Reference Data)
 - Overall block diagram of earth stations for INTELSAT and domestic satellite communication systems
 - Site map of earth stations
 - Site layout and building layout
 - Meteorological data
 - Susoil data etc.

(2) 訓練計画の作成

地球局の運用保守者に対する訓練は契約者によって行われる。KDDは契約者によって実施される工場訓練、仮引渡し前のサイトでの訓練および Phase Vでの運用・保守の期間を行う訓練の計画および実施スケジュールを作成する。

契約者によって行われる訓練内容は次のとおり。

- a) 訓練プログラムの作成(工場および現地訓練, 運用・保守期間の訓練)
- b) テキストブック・訓練材料の準備
- c) 原理および新技術の理論
- d) システム運用の理論
- e) 運用・保守手順, 納入機器取扱い方法
- f) 地球局に独特な運用・保守手順(SSOG)
- g) 工場 and/or 現地に於ける実施訓練
- h) 局管理の実際

(3) INTELSAT, 関連主管庁, 省庁, 通信業者に対する交渉・手続に関するPTCへの助言。

a) INTELSAT

INTELSAT 文書 BG 22-59E(W17176) "Procedures governing application, approval, verification, and operation of earth stations in the INTELSAT system" に基づく交渉および手続に関するPTCへの援助。

b) 関連主管庁, 省庁, 通信業者に対する交渉および手続に関するPTCへの援助

- Coordination of RF bands 3.7 to 4.2 GHz and 5.925 to 6.425 GHz initiated in accordance with Final Acts of the WARC-ST, Geneva, 1971 with relevant administration(s)
- Coordination with relevant authorities for establishing international and national satellite communications circuits.

(4) PTCは招請状, 入札のインストラクション, 入札一般条件および契約文書のフォーマットの情報をKDDに提供するものとし, KDDは必要に応じPTCへ助言する。

(5) インテルサット系および国内衛星通信系地球局の技術仕様書(案)および訓練計画書(案)を各々5部PTCへ提出する。

3. Phase IIIにおける提供業務範囲

Phase IIに提出された技術仕様書に対し、PTCが下した最終結論に従い、次の提供業務を行う。

- (1) 最終技術仕様書を印刷し50部PTCへ提出する。
- (2) PTCの要請があるときは、応札者の事前審査に関する助言を行う。
- (3) PTCの要請があれば入札に関しPTCに対し助言を行う。
- (4) 応札者からの技術仕様書に関する技術的事項の質問に対しPTCに助言する。
- (5) 次の点を考慮し応札者から提出される技術プロポーザルの審査を行う。
 - a) 提出されたプロポーザルの妥当性
 - b) オーバーオールシステムの検討
 - c) 提案されたシステムのフレキシビリティとエキスパンジビリティ
 - d) 技術仕様書の詳細な要求事項に対する適合性
 - e) 提案された機器の検討
 - f) 提案された製造、プロジェクト・履行、スケジュール内容の検討
 - g) システムの信頼度(MTBFとMTTR)の計算書およびオーバーオールの性能の計算書の妥当性の検討
 - h) 運用・保守・訓練および予備品を含めた長期的なアフターサービスのチェック
 - i) プロジェクトマネジメントおよびエンジニアリングサービスのチェック
 - j) 応札者のアクセプタンス・ノンアクセプタンス事項に対する技術的コメントの検討
- (6) 次の点を考慮して提案された価格の評価を行う。
 - a) 提案された価格表のフォーマットおよびブレイクダウン内容のチェック
 - b) 価格の比較表の作成
 - c) 提案された価格の分析
- (7) 成功応札者の推選を含めた審査報告書のPTCへの提出
- (8) 契約者の作成と締結に関するPTCへの援助
 - a) 成功応札者との交渉に際し、技術的事項につきPTCに助言を与える。
 - b) 技術的条件に対する選ばれた契約者からの追加・変更および削除要請の検討と認定
 - c) 最終契約書の作成と締結に関しPTCに助言を与える。

4. Phase IVにおける提供業務範囲

P T Cと契約者の間で締結された契約が発効した時点から次の提供業務を行う。

- (1) サイトの準備状況の監視と引渡し条件のチェック
- (2) 系統図，図面を含むデザインレビュー文書の検討と承認，土木および建築作業についてはレイアウトおよび設備の電氣的・機械的条件が満たされるかどうかの関連事項のチェックと認定を行う。
- (3) 土木および建築作業の進捗状況の監視
- (4) 工場に於ける立会検査の実施
工場立会には次の作業を含む
 - a) 契約者から提出される立会検査の計画とスケジュールのチェック
 - b) 契約者から提出される立会検査要領書および測定器のチェック
 - c) 機器の工場立会検査の実施
 - d) 契約者から提出される試験データおよび報告書のチェックと認定
 - e) 工場立会検査証の発行
- (5) 現地における機器の据付と配線作業の監視
- (6) 提案された建設スケジュールの監視と調整
- (7) 部品，機器の代替品の検討と認定
- (8) 仮引渡し試験を含むサイトでの試験の監視
 - a) 契約者から提出される試験の実施プランとスケジュールのチェックと認定
 - b) 契約者から提出される試験方法，測定器のチェックと認定
 - c) ループ，組合せ試験を含むサブシステム，システムの現地試験の監視
 - d) 契約者から提出される試験データおよび報告書のチェックと認定
 - e) 機器の取扱説明書と完成図のチェック
 - f) 納入される地球局機器，予備品，工具類および文書類の照合
- (9) 契約者が行う工場およびサイトでの訓練の監視
工場およびサイト訓練は次の作業を含む。
 - a) 訓練プログラムと教材のチェックと認定
 - b) 訓練の監視
 - c) 訓練の評価
- (10) インテルサット系および国内衛星通信系地球局の承認
試験および回線設定のためのラインアップ試験の監視。
- (11) インテルサット，関連主管庁，省庁，通信業者に対する交渉および手続に関するP T Cへの援助。
- (12) 月例報告書のP T Cへの提出

5. Phase V に於ける提供業務範囲

契約者が P T C との契約に基づいて納入した設備の仮引渡しが完了した後次の提供業務を行う。

5.1 仮引渡し試験およびインテルサット承認試験の評価と報告書の P T C への提出

5.2 納入された機器の信頼性に関する監視

(1) 契約者が提出する機器の障害データのチェック

障害データは次の項目からなる。

- a) 障害のシリース番号
- b) 障害発生日時
- c) 障害時間
- d) 影響を受けたサービス
- e) 障害の起きたサブシステム
- f) 障害の原因

(2) インテルサットの提出する障害報告書作成に対する P T C への援助

(3) 提案された信頼度を確保できない機器が若しあればその改善に関する勧告を P T C に行う。

(4) 契約者から提出される最終引渡しに関する報告書のチェック

地球局設備の最終引渡しは納入された機器の保証期間の切れる時点、即ち仮引渡し後行われる 1 年間の運用を終了した時点で行われる。

契約者は P T C に対し次のような報告書を作成し P T C に提出する。K D D はこれらの報告書をチェックし結果を P T C に報告する。

- a) 地球局の引渡し時点までの運用状況の履歴。
- b) 地球局設備の主な仕様値に対する実現度を示すデータ。
- c) 地球局の requirements に対する実現度を加味した運用日誌。
- d) 引続き地球局を運用保守する上で必要な事項および有益な事項
- e) 部品、予備品、工具類その他地球局の運用保守に必要な物品の在庫表

5.3 地球局の運用・保守に対する監督

(1) INTELSAT の SSOG に基づく地球局の運用・保守に関し P T C および契約者に対し助言する。

(2) 局運用日誌、定期点検簿のチェック

(3) インテルサットに提出する報告書作成に関する助言

(4) 契約者より提出される定期保守プログラムのチェック

(5) 障害機器のトラブルシューティングと障害修理の監視

(6) 機器、部品、予備品、工具類、消耗品の在庫管理および購入に関する P T C への助言

(7) インテルサットによってオーソライズされた新SSOPに基づく新しいチェーンの増設又は無線周波数、チャンネルサイズ、ベースバンド構成等の変更伴う地球局機器の改修に関してPTCに助言を与える。

5.4 運用・保守の期間契約者によって実施される訓練の監視

- (1) 訓練プログラムと教材のチェックと認定
- (2) 訓練の監視
- (3) 訓練の評価

5.5 インテルサット、関連主管庁、省庁、通信業者に対する交渉手続に関するPTCへの援助

- (1) インテルサットの承認試験結果の提出の援助
- (2) 衛星回線開設に伴うラインアップ試験の援助と、試験の進捗状況、試験結果のTOCCへの報告の援助
- (3) インテルサットからPTCに送付されてくる文書(SSOP情報も含めて)の処理の援助
- (4) 関連主管庁又は通信業者と国際回線の開設又は変更に関してPTCに対して交渉の助言を行う。

以上

