

Global Tender No.V/48/11/APCO PH-II/DP

FOR

**DESIGN, SUPPLY, INSTALLATION AND
COMMISSIONING
OF
APCO PHASE II SYSTEM**

FOR

DELHI POLICE

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IMPORTANT DATES

Pre-bid meeting	05.10.2018 at 1130 hrs
Last date for submission of sealed Bids	19.11.2018 latest by 1100 hrs
Opening of Technical Bids	20.11.2018 at 1100 hrs
Live Demonstration of the quoted System	12.12.2018 onwards

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CHAPTER – 1

INSTRUCTIONS TO BIDDERS

1 General:

- 1.1. On-line bids are invited from the experienced Companies/JV/authorized distributors for the design, supply, installation, integration and commissioning of latest APCO (Association of Public Safety Communication Officials) Phase-II system at Integrated Complex, Operations & Communication, FC-50, Shalimar Bagh, New Delhi (hereinafter referred to interchangeably as the “APCO Phase-II” or the “System” or the “Equipment”) as per the Schedule of Requirement (Chapter-3) and Technical Specifications (Chapter-4) in this document and any other item required for the completion of the project exclusively on Turnkey basis.
- 1.2. The Bidders are advised to study the tender document thoroughly. Submission of tender shall be deemed to have been done after careful study and examination of the tender document with full understanding of its implications.
- 1.3. The **Scope of Work** shall include design, supply, delivery at site, unloading, any other services associated with the delivery of equipment and materials, installation, commissioning, integration, software optimization, providing warranty/ post warranty services for the entire latest APCO Phase-II system and any other related accessories/services for the complete setting up of the proposed system and all type of radios (Static/Mobile/Hand Held) as per the Schedule of Requirements (**Chapter-3**) and Technical Specifications (**Chapter-4**). The successful bidder shall assume full responsibility of the complete System for its entire life cycle (10 years). **The related licenses for import of APCO Phase-II System and wireless sets shall be the responsibility of the bidder from all government organizations. However Delhi Police will provide support for completing all relevant formalities for obtaining licenses.**
- 1.4. It will be imperative on each bidder to fully acquaint himself with all the local conditions and factors which would have any effect on the performance of the contract and cost of the Stores. No request for the change of price or delivery schedule shall be entertained, on account of any local condition or factor once the offer is accepted by the Purchaser.
- 1.5. Bidders shall not be permitted to alter or modify their bids after expiry of the deadline for receipt of bids.
- 1.6. The purchase committee reserves the right to relax any tender term/ condition in larger public interest with the approval of the competent authority.
- 1.7. The JV agreement document should clearly state the Lead Partner, roles and responsibilities of each firm for the successful implementation of the said Project. It should be clearly mentioned in the JV agreement that every firm of the JV shall be responsible jointly and severally liable for the successful completion of the entire project. The Lead Partner shall be authorized to incur liabilities, receive payments and receive instruction for and on behalf of any or all JV partners. If the Bidder uses strength of OEM, in that case OEM should be a JV partner. The scanned copy of agreement shall be submitted with the Bid.

- 1.8. The proposal should fully comply with all the requirements, specifications, terms & conditions of the Tender.

2 Bidder Qualification:

- 2.1 The "Bidder" as used in the tender document shall mean the one who has signed the Bid Form. The Bidder may be either an Indian Company/ Foreign company/Original Equipment Manufacturers (OEM) or leading partner in the JV authorized distributors qualifying the eligibility criteria mentioned at Clause-12, Chapter-1 below.
- 2.2 Indian Distributors/agents, who desire to quote directly on behalf of their foreign principals (manufacturers) have to submit scanned copy of the valid certificate of enlistment from the Central Purchase Organization (eg. GEM/NSIC/MSME etc. for wireless equipments) or any Govt. organization.
- 2.3 In case of Joint Ventures and holding companies, credentials of the partners of JVs cannot be Goods/Equipments, and each partner must comply with all the PQC criteria independently. However clubbed for the purpose of compliance of Pre-Qualification Eligibility Criteria (PQC) in supply of for the purpose of qualifying the Financial Standing Criteria, the Financial Standing credentials of a Holding Company can be clubbed with only one of the fully owned subsidiary bidding company, with appropriate legal documents proving such ownership.
- 2.4 **Applicability to 'Make in India'**: Bidders (manufacturer or principal of authorized representative) who have a valid/approved ongoing 'Make in India' agreement/program and who while meeting all other criteria of the tender, except for any or more of sub-criteria in Experience and Past Performance as defined in Pre-Qualification Eligibility Criteria, would also be considered to be qualified provided:
- (i) their foreign 'Make-in-India' associates meets all the criteria of the tender without exemption, and
 - (ii) the Bidder shall submit appropriate documentary proof for a valid/approved ongoing 'Make in India' agreement/program.
 - (iii) the bidder (manufacturer or principal of authorized representative) shall have to furnish alongwith the bid; a legally enforceable undertaking jointly executed by himself and such foreign Manufacturer for satisfactory manufacture, Supply (and erection, commissioning if applicable) and performance of 'The Product' offered including all warranty obligations as per the general and special conditions of tender.
- 2.5 Foreign manufacturer can directly participate in the tender.
- 2.6 Each bidder shall submit only one bid either by himself or by OEM or as a partner in the joint venture. If a bidder or any of the partner in joint venture participate in more than one bid, the bids are liable to be rejected. .
- 2.7 In case where OEM has submitted the bid, the bids of its authorized dealer will not be considered and EMD, if any, will be returned straightway.

3 Bid Security(Earnest Money):

- 3.1. The **scanned copy** of Bid Security Deposit (Earnest Money) amount of **Rs.2,00,00,000/- (Rs. Two Crores only)** in the form of Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (**Annexure T-7**), from

any of the commercial banks, **in favour of Deputy Commissioner of Police, Communication, Delhi** or through Online at **Account No.10945983774, IFSC Code No.SBIN 0000726** shall be uploaded alongwith Technical Bid. Failure to do so will result in the rejection of the bid. The original DD/Pay Order/Bankers Cheque or Bank Guarantee shall be submitted by the bidder at the time of tender opening. Failure to do so will result in rejection of the bid.

- 3.2. The bidders registered with Central Purchase Organization (e.g. MSME, MSE, National Small Industries Corporation (NSIC) and Startups as recognized by Department of Industrial Policy & Promotion (DIPP) etc. for the requisite System are exempted from depositing of Earnest Money. The bidders shall have to enclose scanned documentary proof to authenticate their firm's registration with these organizations for the specific item to avail this exemption. The original document projected for EMD exemption can be verified/ checked.
- 3.3. The Bid Security (Earnest Money) shall be valid for 45 days beyond the bid validity period of six calendar months from the date of opening of the Bid by the Purchaser. No interest will be payable by the Purchaser on this amount. The Bid Security (Earnest Money) may be forfeited:
- a) if a Bidder withdraws his bid during the period of bid validity ; or
 - b) in the case of the finally selected Bidder, if the Bidder fails;
 - i) to sign the Contract in accordance Clause 1 of Chapter-2; or
 - ii) to furnish Contract Performance Security in accordance with Clause 2 of Chapter-2;or
 - iii) if at any stage any of the information/ declaration is found false.
- 3.4. **Bid Security** (Earnest Money) in respect of the finally selected Bidder will be discharged upon the Bidder signing the Contract, pursuant to Clause 1 of Chapter-2 and furnishing the Performance Guarantee, pursuant to Clause 2 of Chapter-2.

4 Period of Validity of Bids: Bids shall remain valid for **Six (06) calendar months** from the date of Bid opening of technical bid. A bid valid for a shorter period may be rejected by the Purchaser as non-responsive.

5 Terms and conditions of Tendering Firms:

- 5.1 Printed terms and conditions of the Bidders shall not be considered as forming part of their Bids.
- 5.2 Bidder must state categorically whether or not his offer conforms to all the tender terms and conditions (**Chapter-1 & Chapter-2**). If there is a variation in any of the terms and conditions, the extent of variation and the reasons thereof shall be clearly mentioned in the technical bid.
- 5.3 Bidder must state categorically whether or not his offer conforms to the Schedule of Requirement (**Chapter-3**) and Technical Specifications (**Chapter 4**) of the tender.

6 Bid Requirements:

- 6.1 The Bidder shall quote for the items and quantities as listed under the Schedule of Requirements (**Chapter-3**) in the Price Schedule format (**Chapter-5**) and it shall be enclosed in the commercial bid.
- 6.2 The Successful Bidder(s) shall be required to furnish **Performance Security for Ten Percent (10%)** of the Contract value in the form of Contract Performance Bank Guarantee, at the time of award of Contract as per the prescribed proforma

- (Annexure-T7 of Chapter-7 & Clause-2 of Chapter-2). The performance security can also be furnished in the shape of Account Payee Demand Draft/FDR/Bank Guarantee in favour of the Dy. Commissioner of Police (Communication) Delhi. The Performance Security should be valid for at least 6 months beyond the date of completion of all contractual obligations of the Supplier including the warranty/guarantee obligations. No interest is payable by the Purchaser on Performance Security.
- 6.3 Bids not accompanied with prescribed Bid Security will be rejected.
- 6.4 Conditional bids, Telex/Fax bids and incomplete bids will be summarily **rejected. Only online bids will be accepted and no physical bids will be accepted.**
- 6.5 The bid shall contain no interlineations, erasures or overwriting on scanned copy of submitted document and all pages of the Bid must be signed and sequentially numbered by the Bidder.
- 6.6 The bidder shall ensure that all columns relevant to the bidder of price schedule for completion of the project as per Bill of Quantity and specifications are completely and properly filled. The price bid shall not be considered and bid shall be summarily **rejected, if the price schedule is not properly filled.** No clarification whatsoever shall be entertained after opening of the price bid.
- 6.7 The price of tender shall be calculated in Indian Rupees. Indian Bidders have to quote the price in Indian Rupees (INR) only. The price for foreign bidder will be considered from RBI notified basket of foreign currencies i.e. US Dollar or Euro or Pound Sterling or Yen etc in addition to the Indian Rupees except for expenditure incurred in India. All the offers will be converted to Indian Rupees based on the "Bill currency selling" exchange rate on the date of tender opening (Techno-commercial offer) as per RBI reference Rate.
- 6.8 The L-1(lowest firm) will be decided by taking into account the total cost of **the equipment after loading all duties, taxes, insurance and inland freight charges i.e. FOR destination cost plus LC charges (whatever to be borne by Delhi Police) and CAMC (Comprehensive AMC) charges for 07 (Seven) years on NPV basis. The CAMC rates will be considered as a loading factor. The CAMC charges for 07 years will be loaded in the project price for deciding the lowest bidder.** In case both Indian and foreign bidders have quoted in the tender, the comparison of the offers would be done on the basis of FOR/FOT destination including all applicable taxes and duties (On the principle of the total outgo from Procuring Entity's pockets). In case there are no domestic bidders, a comparison of offers can be made on the basis of CIF/landed costs since the rest of costs would be same for all bidders.
- 6.9 **Evaluation of Commercial Bids:**
- (i) The Commercial Bids of only the technically qualified bidders will be opened for evaluation.
 - (ii) Since the payments to the bidder will be made over a period of over 10 years, the Discounted Cash Flow (DCF) method will be used to compare different payment terms, including advance payments and progressive stage payments to the bidder so as to bring them to a common denomination for determining lowest bidder.
 - (iii) Delhi Police will evaluate the offers received by adopting DCF method with a discounting rate in consonance with the government rate. The DCF is defined in the Glossary of Management and Accounting Terms, published by the Institute of Cost and Works Accountants of India. DCF method would be used for evaluation of bids.
 - (iv) Detailed methodology for applying DCF technique is as below:

- a. Net Present Value (NPV) method will be used for evaluation of the Commercial Offer. The Net Present Value of a contract is equal to the sum of the present values of all the cash flows associated with it. The formula for calculating NPV of a commercial offer is illustrated below.
- b. Discounting rate to be used under the method is to be RBI lending rate on loans at the time of opening of commercial bid. Bid evaluation committee will evaluate the offers received by adopting Discounted Cash Flow (NPV) method with a discounting rate of as per RBI lending rate on loans.
- c. NPV will be calculated on the annual cash outflows.
- d. Standard software for example 'Excel', 'Lotus 1-2-3' or any other spreadsheet will be used for NPV analysis.
- e. The NPV will be calculated using the formula below:
- f. $NPV = C_0 + C_1/(1+r)^1 + C_2/(1+r)^2 + C_3/(1+r)^3 + C_4/(1+r)^4 + C_5/(1+r)^5 + \dots + C_n/(1+r)^n$
Where, $C_0 \dots C_n$ are the yearly cash outflows as illustrated below
- i. C_0 is the sub-total for equipment cost including hardware, software and Services provided during Implementation state including 3 years warranty period
- ii. C_1 and C_2 are Cost of Operations and Maintenance Services for the 2nd year and 3rd year which will be presumed as '0' i.e. No cost since it has been absorbed in warranty.
- iii. C_3 is Cost of CAMC for the 4th year after warranty period.
- iv. C_n is Cost of CAMC for the nth year after warranty period. The n shall be calculated for the period of CAMC.
- v. r is the annual discounting rate as specified above.

6.10 **The payments to the supplier may be made through Electronic Fund Transfer (EFT) into their designated bank accounts. Scanned copy of the bank Account Number with the branch Code of the Bidder and mandate form duly filled in all respect may be uploaded with the technical bid.**

6.11 Suo motu discounts and rebates offered by the bidder after opening of the financial bid shall not be considered for the purpose of ranking the financial offer. However, if such a firm does become L1 at its original offer, such suo motu rebates can be incorporated in the contracts. This also applies to conditional rebates, for example, rebate for faster payments, and so on.

7 Bid Prices:

- 7.1 The Bidder shall quote the Prices in the **Price Schedule (Chapter - 5)** of this document, as per the Schedule of Requirement, Technical Specifications and Terms & Conditions of the Tender.
- 7.2 The price should be quoted for all items strictly in line with the price schedule.
- 7.3 No conditions should be written in the price bid.
- 7.4 The Purchaser will make all payments, under this contract, in Indian rupees.
- 7.5 The taxes applicable to CAMC shall be paid as per the Govt. ruling at the time of billing.

8 **Contents of Online Bid:** The Bids prepared by the Bidder shall comprise of the following two components:-

- | | |
|----|-------------------------------------------------------------------------------------|
| a. | Technical Bid comprising of the following scanned documents and to be |
|----|-------------------------------------------------------------------------------------|

	filled on the format sheets provided in the Tender Document. This is mandatory:
i.	Bidders Particulars (Annexure T1, Chapter 7)
ii.	Bid Form (Annexure T2, Chapter 7)
iii.	Bill of Material as per Schedule of Requirement (Chapter-3) clearly giving the country manufacture, nomenclature, make, model no. & quantities of all the items
iv.	Technical Specifications compliance sheet (Chapter 4)
v.	Warranty Certificate (Annexure T3, Chapter 7)
vi.	Earnest Money for Rs.2,00,00,000/- (Rupees Two Crores only) in the form of Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee from a Commercial Bank in favour of DCP (Communication), Delhi (Clause 3 of Chapter 1). (Scanned copy of EMD)
vii.	Relevant documents asked as per Clause 12 of Chapter-1
viii.	All technical brochures/documents relevant to the Bid (Clause 12 of Chapter 1)
ix.	Company details for eligibility criterion in the format as at Annexure T-4 .
x.	Copies of GST Registration and copy of Latest Deposit Challan of GST as per enclosed proforma at Annexure T-5(Claude 12.2, Chapter 1)
xi.	Certificate towards owners/partners, non- blacklisting and non criminal cases as per (Clause 12.2, Chapter 1)
xii.	Proforma for Contract Performance Bank Guarantee(Annexure T7, Chapter 7)
xiii.	Tender acceptance letter (Annexure T-8, Chapter 7)
xiv.	Authorization letter (Annexure T-9, Chapter 7)
xv.	Check List of Technical Bid (Annexure T10, Chapter 7)
xvi.	Bid Letter (Annexure T-11, Chapter 7)
xvii.	ECS form (Annexure T-12, Chapter 7)
b.	Commercial Bid comprising of Price Schedule (Chapter-5) &CAMC Rates for 7 years after Guarantee/ warranty Period of 3 years. The Price Schedule will be filled in excel sheet/ spreadsheet provided with the tender document.

9 Procedure for Submission of Bids:

9.1 It is proposed to have a **Two-Cover System** for this tender.

- a. Technical Bid shall be uploaded in "**pdf**" format on the website of <https://eprocure.gov.in/eprocure/app>.
- b. Commercial Bid shall be uploaded in "**excel/ spreadsheet**" format provided with the tender document on the website of <https://eprocure.gov.in/eprocure/app>.

10 Instructions for Online Bid Submission: As per the directives of Department of Expenditure, this tender document has been published on the Central Public Procurement Portal (URL: <http://eprocure.gov.in>). The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at:

<https://eprocure.gov.in/eprocure/app>.

10.1 Registration:

- a. Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal: <https://eprocure.gov.in/eprocure/app> by clicking on the link “Click **here to Enroll**” on the CPP Portal is free of charge.
- b. As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
- c. Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
- d. Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.), with their profile.
- e. Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.
- f. Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.
- g. The foreign bidders can participate in the tender by obtaining digital signatures issued by any of the Digital Signature Certificate (DSC) vendors approved by CCA, India (<https://cca.gov.in>). The following documents are required to be submitted by foreign nationals i.e. (1) Identity proof like passport copy etc, (2) Bank Account Statement in country of residence, duly attested by Indian Embassy/High Commission/Consulate/Apostille in the country where the applicant is currently located(atleast six months of Bank transactions) with the proof indicating the account is owned by the individual, (3) Copy of the Trade license attested by any one of the authorities as specified in point no.2 above, (4) An authorization on company's letter head, (5) Copy of authorization letter or invitation letter from department for participation in the tender by any one of the tender inviting authority.

10.2 Searching For Tender Documents:

- a. There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.
- b. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
- c. The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

10.3 Preparation of Bids:

- a. Bidder should take into account any corrigendum published on the tender document before submitting their bids.
- b. Bidder should go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.
- c. Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black and white option.
- d. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

10.4 Submission of Bids:

- a. Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- b. The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- c. Bidder has to select the payment option as "offline" to pay the tender fee / EMD as applicable and enter details of the instrument.
- d. Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the Tender Processing Section, latest by the last date of bid submission. The details of the DD/any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
- e. A standard Price Schedule provided with tender document (excel sheet/spread sheet) format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the Price Schedule provided with tender document (excel/spread sheet) file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the Price Schedule provided with tender document (excel sheet/spread sheet) file is found to be modified by the bidder, the bid will be rejected.

- f. The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- g. All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.
- h. The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- i. Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- j. The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

10.5 Assistance to Bidders:

- a. Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
- b. Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is 1800 233 7315.

11 Schedule of Tender:

- 11.1 The tender document can be downloaded from Central Public Procurement Portal website: <https://eprocure.gov.in/eprocure/app>. Bid submission will be closed at 1100 Hours on 19.11.2018.
- 11.2 Bidder must upload their bid on the CPP Portal well in time i.e. on or before the last date/time of closing of bid. Late/delayed bids will not be entertained at all. The Department may, at its discretion, extend the deadline for submission of bids in which case all rights and obligations of the Department and the Bidder will be the same.
- 11.3 The online Technical bids will be opened at **1100 Hrs. on 20.11.2018** in the **Committee Room, Provisioning & Logistics, 5, Rajpur Road, Delhi**. The bidders or their authorized representatives may be present, if they so desire.
- 11.4 Submission of online scanned copies of unwanted/irrelevant documents /out of contest document to disturb/misuse the online procurement system will be taken seriously and stringent action will be taken against the bidders, besides action for rejection of bids and blacklisting of firm will be initiated.
- 11.5 As per instructions of the Govt., the tender document has been published on the Central Public Procurement Portal: <http://eprocure.gov.in>. The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates before the stipulated date & time.
- 11.6 The pre-bid meeting will be held on **05.10.2018 at 1130 hrs** in the **Committee Room, Provisioning & Logistics, 5, Rajpur Road, Delhi-110054**.

- 11.7 Prospective bidders desirous to seek clarifications regarding Tender Specifications/ Terms & Conditions shall **submit their queries in writing and duly signed by the bidder at least 48 hours before the pre-bid meeting**. However, if for any valid reason, clarifications are not sought by the bidder within the stipulated time, Delhi Police may, at its discretion, entertain such queries at the pre-bid meeting in the presence of the bidders attending the meeting. The same, however, should be in writing and duly signed by the bidder. The queries will be discussed at the pre-bid conference and within two weeks necessary clarifications would be posted by Delhi Police on the Websites of <https://eprocure.gov.in/eprocure/app>. apart from furnishing clarification in writing for which the bidders should state their address, fax and e-mail ID clearly on their query letters.
- 11.8 The authorized representatives of bidders, who intend to attend the tender opening are required to bring with them letters of authority from the corresponding bidder.

12 Tender Evaluation Process: Stage-wise evaluation will be carried out as stated below:

12.1 **Stage –I: Pre-Qualification Bid Evaluation:** The Bids which comply against **Clause- 3, 4, 6 & 11** will be taken up for Stage –I evaluation. The bidder shall furnish/upload the **scanned copy** of details and requisite certificates/documents regarding its eligibility in the prescribed format as at **Annexure T-4**.

- a. Evaluation will be carried out for the compliance against the pre-qualification criteria.
- b. The entire documentary proof shall be legible & readable otherwise the document may not be considered for evaluation.
- c. No content in the documentary proofs should be scored/ shaded/deleted/ erased otherwise the document may not be considered for evaluation.
- d. No new documents (other than those mentioned in the proposal) will be accepted for evaluation after opening of the Technical Bid. However any supporting historical documents for those already mentioned in the bid may be accepted.

12.2 **Pre-Qualification Eligibility criteria for Indian Bidders:**

S No	Pre-Qualification Criteria	Documentary Proof to be submitted
1.	The Company /JV/ authorized distributors should be Indian Company.	Copy of certificate of incorporation and name change certificate (if any). In case of authorized distributors, the bidders shall submit the ink signed copy of authorization from the OEM and support for providing support for entire period of 10 years of the contract.
2.	In case of JV, it can have a maximum of three members. In addition, total stake of Indian Co. in	Scanned copy of contract agreement as per clause 1.7 on a non-judicial stamp paper of Indian Rupees one

	JV should be 51% or more with management control in JV in Indian Co's hand and with Indian Citizen.	hundred, duly signed by all the authorized representative of all the firms to be uploaded along with the bid. The original agreement should be submitted at the time of technical bid opening.
3.	In case of authorized distributors, their principal manufacturer should meet all the criteria of the tender without exemption and the bidder himself should have been associated as authorized distributor of the same or other principal manufacturer for same set of services as in present bid (supply, installation, satisfactorily, commissioning, after sales services) for same or similar product for past three years ending on the date of opening of the tender.	A documentary proof shall be uploaded with the technical bid.
4.	A legally enforceable tender specific authorization from the principal manufacturer in the prescribed form assuring full guarantee and warranty obligations as per the general and special conditions of the contract.	The authorization from the OEM as per Annexure-T9 shall be uploaded and original copy of the same shall be submitted at the time of tender opening.
5.	Bidder or OEM should have proven experience in setting up of latest APCO system/similar set of services nationally/ globally during the last 5 years having value of minimum Rs.50 crores in single project or Rs.35 crores separately in two projects or Rs.25 crores separately in three projects. The Indian bidder having "Make In India" program with their foreign OEM having experience in setting up of latest APCO system/similar set of services nationally/ globally during the last 5 years as above will be exempted.	<p>Work order copy from any government / government undertaking/ public sector/ Airport / Metro rail with one year satisfactory certificate shall be uploaded with the technical bid.</p> <p>The Indian bidder having an appropriate certificate from a certifying agency or "Make In India" program with their foreign 'Make-in-India' associates shall be uploaded with the technical bid to avail the exemption.</p> <p>The bidder (manufacturer or principal of authorized representative) shall have to furnish alongwith the bid; a legally enforceable undertaking jointly executed by himself and such foreign Manufacturer for satisfactory manufacture, Supply (and erection, commissioning if applicable) and</p>

		performance of 'The Product' offered including all warranty obligations as per the general and special conditions of tender.
6.	In case of JV, each partner should have proven experience in setting up of latest APCO system/similar set of services nationally/ globally independently during the last 5 years having value of minimum Rs.50 crores in single project or Rs.35 crores separately in two projects or Rs.25 crores separately in three projects.	Work order copy from any government / government undertaking/ public sector/ Airport /Metro rail with one year satisfactory certificate shall be uploaded with the technical bid.
7.	The OEM should own the intellectual properties rights for the software involved in the Project.	Self-declaration on Intellectual property (IP) rights should be submitted.
8.	The annual total turnover of the OEM/Bidder should not have been less than Rs.30 Crores on an average during the last consecutive three years	Copy of the audited balance sheets, profit and loss account statement for the last consecutive three Audited financial years. The copies should be attested by an auditor for certifying true copies
9.	In case of JV, the annual turnover of the leading company should not have less than Rs.20 Crores and other company should not have less than Rs.10 Crores on an average during the last three consecutive years. It is not applicable for PSUs of India.	Copy of the audited balance sheets, profit and loss account statement for the last consecutive three Audited financial years. The copies should be attested by an auditor for certifying true copies.
10.	The bidder should have qualified technical staff in the following fields – i) Trunking system installation and configuration - (1 No. Engineering Graduate in related field) ii) Network management and optimization - (1 No. Engineering Graduate in related field) iii) Switching center configuration - (2 No. Certified Engineer/ Diploma Holder in related field) iv) Microwave system installation and configuration- (2 No. Certified Engineer/ Diploma Holder in related field)	The list has to be enclosed along with the technical qualification (may be subject to verification) and also self-certification from the authorized signatory.

11.	All the bidders participating in the tender must submit a scanned list of their owners, partners, etc. and a certificate to the effect that the firm is neither blacklisted by any Government Department nor any Criminal Case is registered against the firm or its owner or partners or directors anywhere in India.	Self-Certification from the authorized signatory for submission of the bid
12.	The bidder should have a local office and APCO OEM authorized service center in Delhi/NCR or alternately the bidder shall give an undertaking for setting up the local office in Delhi/NCR within 15 days from the date of provisional acceptance order.	Copy of the rent Agreement/ latest Telephone bills Or Undertaking letter for setting up the local office within 15 days from the date of provisional acceptance order for the functioning of office, for keeping it functional with respect to this APCO Phase-II project until completion of the contract period should be submitted. Necessary proof to be submitted before issuance of purchase order.
13.	The APCO OEM should have registered office established in India	Copy of registration documents/ rent agreements for last 2 years to be submitted. Delhi Police reserves the right to inspect the office prior to price bid opening.
14.	The bidders should have their firm registered with GST Department.	Scanned copies of the same shall be submitted with the Technical Bid alongwith their latest GST deposit challan/return. Proforma for the same is given at Annexure-T5 of Chapter-7.
15.	Companies PAN,TAN and GSTIN details	Copies to be submitted
16.	Valid dealer possession license for the products quoted (APCO switch, base stations, Static, Mobile, Portables, Microwave radios).	The bidder shall hold and submit the Dealer possession License (DPL) for all the wireless equipments involved in the project.
17.	The radio system infrastructure (Base station & Switch) and Radios (Portable, Mobile and Static) shall be of the same make from the same OEM (original equipment manufacturer).	Manufacturer authorization certificate must be produced
18.	The bidder should submit an Authorization letter for authorizing the tender signing authority for	A Board resolution / Authorization letter for authorization from the board of directors / competent authority or

	bidding the tender.	Power of Attorney authorizing the tender signing authority.
19.	The OEM/Bidder/Prime Bidder should not have suffered any financial loss for more than one year having eroded by more than 30% during the last three years, ending on the relevant date.	A self declaration certificate is required.

12.3 Pre-Qualification Eligibility criteria for Foreign Bidders:

S No	Pre-Qualification Criteria	Documentary Proof to be submitted
1.	The Bidder should have proven experience in setting up of latest APCO/similar system nationally/ globally during the last 5 years having value of minimum Rs.50 crores in single project or Rs.35 crores separately in two projects or Rs.25 crores separately in three projects.	Work order copy from any government / government undertaking/ public sector/ Airport /Metro rail with one year satisfactory certificate shall be uploaded with the technical bid.
2.	The APCO Phase II system bidder should own the intellectual properties rights for the software involved in the Project.	Self-declaration on Intellectual property (IP) rights should be submitted.
3.	The annual total turnover of the bidder (OEM) should not have been less than Rs.30 Crores on an average during each of the last consecutive three years .	Copy of the audited balance sheets, profit and loss account statement for the last consecutive three Audited financial years. The copies should be attested by an auditor for certifying true copies
4.	The bidder should have qualified technical staff in the following fields – i) Trunking system installation and configuration - (1 No. Engineering Graduate in related field) ii) Network management and optimization - (1 No. Engineering Graduate in related field) iii) Switching center configuration - (2 No. Certified Engineer/Diploma Holder in related field) iv) Microwave system installation and configuration- (2 No. Certified Engineer/ Diploma Holder in	The list has to be enclosed along with their technical qualification (may be subject to verification) and also self-certification from the authorized signatory.

	related field)	
5.	All the bidders participating in the tender must submit a scanned list of their owners, partners, etc. and a certificate to the effect that the firm is neither blacklisted by any Government Department nor any Criminal Case is registered against the firm or its owner or partners or directors anywhere.	Self-Certification from the authorized signatory for submission of the bid
6.	The bidder should have an office in India and APCO OEM authorized service center in Delhi/NCR or alternately the bidder shall give an undertaking for setting up the office in India and Service Centre in Delhi/NCR within 15 days from the date of provisional acceptance order.	Copy of the rent Agreement/ latest Telephone bills Or Undertaking letter for setting up Local office within 15 days from the date of provisional acceptance order for the functioning of office, for keeping it functional with respect to this APCO Phase-II project until completion of the contract period should be submitted. Necessary proof to be submitted before issuance of purchase order.
7.	Companies PAN in India, TAN and GSTIN details	Companies should get PAN/TAN/GSTIN registration, process initiated in 15 days upon receipt of contract and completion in 60 days in India, if required.
8.	Valid license for the products quoted (APCO switch, base stations, Static, Mobile, Portables, Microwave radios).	The bidder shall hold and submit the possession License for all the wireless equipments involved in the project.
9.	The radio system infrastructure (Base station & Switch) and Radios (Portable, Mobile and Static) shall be of the same make from the same OEM (original equipment manufacturer).	Manufacturer authorization certificate must be produced
10.	The bidder should submit an Authorization letter for authorizing the tender signing authority for bidding the tender.	A Board resolution / Authorization letter for authorization from the board of directors / competent authority or Power of Attorney authorizing the tender signing authority.
11.	The bidder should not have suffered any financial loss for more than one year having eroded by more than 30% during the last three years,	A self declaration certificate is required.

	ending on the relevant date.	
12.	As per Technical field evaluation, the bidder may offer to give a live demonstration on an existing operational system in APCO Phase-II in India/abroad within the stipulated period of tender. Failure to do so shall be deemed rejection of the bid.	A self declaration certificate is required.

12.4 Stage-II - Technical Bid Evaluation: Only those Bids which comply against Stage – I (Pre-Qualification Evaluation) will be taken up for Stage-II evaluation as below:

- a. Evaluation will be carried out based on the Technical Evaluation Criteria mentioned below. The Technical Bid will be evaluated based on the compliances filled up in the Technical bid and also all the terms and conditions of the tender. The tenders that do not confirm to the tender conditions and tenders from firms without adequate capabilities for execution of the work as per tender requirements shall be liable for rejection.
- b. The bidder shall also submit the **scanned copy of** Bill of Material as per Schedule of Requirement (**Chapter-3**) clearly giving the country of manufacture, nomenclature, make, model no. & quantities to be supplied for new latest APCO Phase-II system under this Contract. It shall be **uploaded** with the Technical Bid.
- c. Bidders shall indicate complete specifications and all features of the proposed system. The legible scanned copy of technical specifications along with literature/ brochures of quoted system must be attached with the technical bid by the bidder. The Bidder shall also provide, Equipment Data Sheets, and conformance chart for Technical Specifications etc.
- d. The bidder is required to submit all the required technical documents in the tender itself. Technical evaluation will be carried out only after verification of the following technical documents:

Sl. No	Document Name
1.	Demonstration License for the equipment to be demonstrated (i.e for APCO Ph-II, 800 MHz Radio sets and Microwave link)
2.	Team responsible for Project Management upto completion of the project
3.	Communication networking and Electrical layout at the base station sites (to be submitted separately for each base station site, control centre and dispatch centers).
4.	Microwave network layout with redundant configuration for backhaul to reach the control centre.
5.	Proposed switching centre layout
6.	Tower design with appropriate load considerations to withstand maximum wind speed of 150 Kmph as per specifications
7.	Path profile diagrams for microwave links

8.	Link budget calculations for microwave links.
9.	Link budget calculations for the proposed APCO Phase II system (should be submitted for each site separately)
10.	Individual Coverage diagrams for each base station with -85 dbm signal strength indications
11.	Combined expected coverage diagram with -85 dbm signal strength indications
12.	Antenna system proposed for each base station
13.	Azimuth and elevation of the antenna system for each base station
14.	Surge and lightning protection system for each base station and control Centre. Protection should be provided for all the components in the project
15.	Dispatch console configuration
16.	Estimated duration to complete the project with detailed proposed schedule of work accompanied with Gantt Chart. Day one of project commencement may be counted from the day of issuance of purchase order. Also the PERT (Program Evaluation Review Technique) chart for the project should be submitted illustrating serial tasks and concurrent tasks.
17.	Test Equipment to be provided for field test to measure the received signal strength during acceptance test procedure
18.	List of critical spares to be provided with the bid and nature of faults that could occur (i.e. as to why it is considered as critical spare)
19.	Base station configuration as per requirement
20.	Power system configuration proposed for each base station location
21.	Antenna system for microwave radio with azimuth and elevation details
22.	Details of the software to be installed in the proposed system (networking management, programming, any other software necessary).
23.	Compliance statement for all technical specification with reference page number

12.5 Technical field Evaluation: Only those Bids which fulfill Stage – I and stage – II will be taken up for Stage –III evaluation as below:

- a. The bidders shall arrange **presentation and live demonstration of the quoted System for the latest APCO Phase-II system** during the period 12.12.2018 onwards to show that their quoted System fully conforms to this tender.
- b. The bidders are advised to make all necessary arrangement for the presentation and the live demonstration of their quoted system well in advance as they will be required to adhere to the time schedule.
- c. The bidder may offer to give a live demonstration on an existing operational system in APCO Phase-II in India/abroad. All logistics expenses for such demonstration including air travel will be borne by the bidder.
- d. **The live demonstration of the quoted systems is a mandatory requirement to show conformity with the tender specifications and shall include the following:**
 - i. Installation of at least two APCO Ph-II base radios (repeaters) per base station in 800 MHz band at any two proposed repeater sites.
 - ii. Installation of one Master Switching System for Field trial/survey/technical evaluation of the proposed APCO Phase-II system in 800 MHz band.

- iii. Establishment of microwave links as per proposed solution for Field trial/survey/technical evaluation between the two repeater sites.
 - iv. APCO Ph-II system connectivity through LAN/ Delhi Police Cyber Highway MPLS/VPN Network with the facility of automatic changeover from microwave link to MPLS/VPN network seamlessly.
 - v. Field trial/survey/technical evaluation of installed APCO Ph-II base stations in standalone and wide area configuration using proposed at least five each Handheld, Static/mobile sets alongwith necessary accessories.
 - vi. All the technical parameters of the APCO Ph-II system and major components viz. NMT/NMS, Dispatcher Console etc specified in the tender shall be demonstrated using appropriate test equipment to be brought by the bidder for Field trial/survey/technical evaluation alternatively the bidder can arrange for Field trials/survey/technical evaluations at any installed and operational user location or any government lab at their own risk and on 'No cost, No commitment' basis.
 - vii. Management Information System (MIS)/ Historical reports.
 - viii. APCO Ph-II system operational and management features and capabilities.
 - ix. Handheld, Static/mobile radio samples alongwith necessary accessories of the bidders will be tested among each other's system for the Field trial/survey/technical evaluation/IOP purpose.
 - x. Arrangements for Field trials/survey/technical evaluations for installed/proposed APCO Ph-II shall be made at the cost of the bidder.
 - xi. Bidders will be provided with Space and raw power by the purchaser for Field trial/survey/technical evaluation only, any other items/equipments etc. required for Field trials/survey/technical evaluations of the proposed APCO Ph-II system shall be made by the bidder.
 - xii. Testing with handheld/mobile set will be carried out in a high speed moving vehicle to check hand off feature. There should not be any interruption in ongoing communication.
 - xiii. Any other features/ capabilities bidder want to demonstrate.
- 13** After evaluation of the Technical bids and the live demonstration, the short-listed Bidders will be intimated. The list of short listed Bidders will also be posted on the website of <https://eprocure.gov.in/eprocure/app> and Notice Board at Integrated Complex, Shalimar Bagh Delhi-88. The decision of the committee on technical suitability of the offer shall be final and shall not be open for discussion.
- 14** The Commercial bids of the short-listed Bidders will be **opened on-line in the Committee Room at Provisioning & Logistics, 5, Rajpur Road, Delhi** and such short-listed bidders will be intimated about the date and time accordingly. The short-listed bidders or their authorized representatives may remain present, if they so desire.
- 15** **Delivery of the Stores at Delhi Police premises shall be completed by the Supplier in** accordance with the terms specified by the Purchaser within **12 weeks** from the date of Award of Contract. The installation, testing, integration and commissioning of the proposed system shall be completed within a period of **12 weeks** after the delivery of the Stores at Delhi Police premises or within a total period of **24 weeks** from the date of award of Contract.
- 16** **Purchaser's right to accept any bid and to reject any or all bids:** The Purchaser reserves the right to accept any bid, and to annul the bid process and reject all bids at any time, without assigning any reason, prior to placement of supply order/ signing of

contract, without thereby incurring any liability to the affected Bidder(s) or any obligation to inform the affected Bidder(s) of the grounds for the Purchaser's action.

(S.K. SINGH)
ADDL. DY. COMMISSIONER OF POLICE-II:
OPS. & COMN.: DELHI

CHAPTER – 2

CONDITIONS OF CONTRACT

1. Award of Contract:

- 1.1 Prior to the expiry of the period of bid validity, the Purchaser will notify the finally selected Bidder and issue Letter of Intent. If a need for extension of the Price validity period arises, it should be extended by mutual agreement. The notification of award/placement of supply order will constitute the formation of the Contract.
- 1.2 At the time of placement of the supply order, the Supplier shall sign the contract with the Purchaser. The Supplier shall bring alongwith him, the power of attorney, the contract performance bank guarantee and common seal etc. for signing the contract.
- 1.3 In case of authorized distributors; a tripartite agreement shall be signed among the Purchaser, the finally selected bidder(s) and the OEM to ensure continuity in providing technical support/services as per the contract.

2. Contract Performance Bank Guarantee/Performance Security:

- 2.1 The Supplier shall furnish Performance Security for **Ten Percent (10%) of the value** of the Contract within 14 days of the award of LOI, in the form of **Contract Performance Bank Guarantee**, as per the prescribed proforma (**Annexure T7, Chapter 7**), from ascheduled Commercial Bank. The Performance Security can also be furnished in the shape of Account Payee Demand Draft/FDR.
- 2.2 The Contract Performance Bank Guarantee/ Account Payee Demand Draft/ FDR will be in the name of the **Deputy Commissioner of Police (Communication)**, Delhi Police, Integrated Complex, FC-50, Shalimar Bagh, Delhi-110088.
- 2.3 The Contract Performance Bank Guarantee should be valid for a period of **3 (three) years and 6 (Six) months** from the date of award of the Contract. This will be released after the successful completion of warranty period.
- 2.4 In the event of delay in acceptance of the Stores, the Supplier shall, at the request of the Purchaser, extend the validity of the Contract Performance Bank Guarantee so as to cover the warranty period.
- 2.5 **CAMC Performance Bank Guarantee/ CAMC Performance Security:** On completion of the 3 years warranty period, the Supplier shall furnish an Annual Maintenance Contract (CAMC) Performance Bank Guarantee/CAMC Performance Security for **Five Percent (05%) of the total Contract Price** from ascheduled Commercial Bank. The CAMC Performance Security can also be furnished in the shape of Account Payee Demand Draft/FDR.
- 2.6 The CAMC Performance Security/Bank Guarantee shall be in the name of **Dy. Commissioner of Police, Communication**, Delhi.

- 2.7 The CAMC Performance Bank Guarantee/ FDR should be valid for a period of **07 years and 06 months** from the date of expiry of the warranty period. This will be released after the successful completion of CAMC period of 7 years.
3. **Payment Schedule for Indian Bidder:** The standard payment terms subject to recoveries, if any, under the Liquidated Damages clause will be as follows: -
- 3.1 **Advance:30% of the Contract Price** shall be paid as advance against a Bank Guarantee as per prescribed proforma at **Annexure T-7**, of equal amount, from a Scheduled Bank after signing the Contract. This Bank Guarantee should remain valid for a period of six months from the date of signing the contract and the same will be released after delivery of all the equipments at the consignee's premises. The supplier shall renew the bank guarantee if the purchaser so asks, in case the goods are not delivered within the period of enforcement of bank guarantee.
- 3.2 **Delivery at Site:** Progressive payment of **40% of the supplied equipment cost alongwith applicable taxes on 100 % supplied equipments** shall be paid on transfer of title of the stores as per specifications and receipt of supplier's bills complete in all respect. The Purchaser reserves the right of pre-dispatch inspection at the Bidder's premises.
- 3.3 **Acceptance at Site:** The **Final Payment** of remaining **30% of the Contract Price** shall be paid after successful installation and commissioning of the entire system and acceptance of all the sites by Delhi Police.
- No interest is payable by the Purchaser in case of delayed payments.
4. **Payment Schedule for successful Foreign Bidder:** The payment will be made in RBI notified basket of foreign currencies i.e. US Dollar or Euro or Pound Sterling or Yen etc in addition to the Indian Rupees except for expenditure incurred in India (including agency commission, if any); which shall be quoted in Indian currency. All offers will be converted to Indian Rupees based on the 'Bill currency selling' exchange rate on the date of tender opening from RBI published rate as specified in the tender document. The contract price will be considered in Indian Rupees and at the time of payment the corresponding amount of Indian Rupees will be converted into currency/ currencies in which the bidder had quoted and the conversion charges shall be borne by the bidder. The standard payment terms subject to recoveries, if any, under the Liquidated Damages clause shall be made after deduction as follows: -

- 4.1 **Advance:30% of the Contract Price** shall be paid as advance through Letter of Credit (LC) against a Bank Guarantee as per prescribed proforma at **Annexure T-7**, of equal amount, from a Scheduled Bank within one week from the receipt of bank guarantee. This subjective LC will be issued alongwith the supply order. The Bank Guarantee should remain valid for a period of six months from the date of signing the contract and the same will be released after delivery of all the equipments at the consignee's premises in good condition. The supplier shall renew the bank guarantee if the purchaser so asks, in case the goods are not delivered within the period of enforcement of bank guarantee. An undertaking from the concerned bank should also be submitted that the bank guarantee will automatically be renewed until the confirmation letter for releasing the same not issued by the Purchaser.
- 4.2 **Delivery at Site:** Progressive payment of **40% of the supplied equipment cost alongwith applicable taxes on 100 % supplied equipments, all duties, freight charges etc.** shall be paid within 15 days on transfer of title of the stores as per specifications and receipt of supplier's bills complete in all respect. This subjective LC will be issued alongwith the supply order. The Purchaser reserves the right of pre-dispatch inspection at the Bidder's premises.
- 4.3 In case the delivery date of the contract is extended to take care of delay in supply, for which the supplier is responsible, the tenure of Letter of Credit (LC) will also be extended, but the expense incurred for such an extension (of LC) is to be borne by the supplier'.
- 4.4 **Acceptance at Site:** The **Final Payment** of remaining **30% of the Contract Price** shall be paid within one month after successful installation and commissioning of the entire system and acceptance of all the sites by Delhi Police. This subjective LC will be issued alongwith the supply order. No interest is payable by the Purchaser in case of delayed payments.
- 4.5 Any new Government levies/taxes imposed or increased in taxes after the contract date shall be paid as per actual against submission of documentary evidence and in case of decrease thereof, the same shall be adjusted against future bills or from the performance security of the contractor.
5. **Packing, Forwarding & Shipment:** The Supplier shall provide proper packing of the Stores to prevent their damage or deterioration during transit to the final destination site. The Supplier shall notify Purchaser of the date of each shipment from his works and the expected date of arrival of goods at the site.
6. **Incoterm for bidders:** The terms FOB and CFR shall be defined in accordance with latest 'INCOTERM'.
- 6.1 **Landed Price:** The following components would be added to FOB price to calculate the landed price of an imported offer:

- (a) Ocean freight as quoted by the bidder & if not quoted then Ocean freight as advised by Ministry of Shipping including firm and variable component.
- (b) Insurance charges as per IR's open cover policy (It is a type of marine *insurance policy* in which the insurer agrees to provide coverage for all cargo shipped during the *policy* period.) and upto the consignee location from Sellers factory location
- (c) Assessable Value is to be calculated by adding Port/landing charges as applicable as per Customs Rules. Aggregate Customs Duty is to be calculated on the assessable value and the total landed cost is to be worked out by adding the assessable value with the aggregate Customs Duty.
- (d) Landed cost = CIF (cost, insurance, freight) value (add agency commission to the FOB cost, if any plus Insurance on FOB cost plus freight)+ port handling charges on CIF value as applicable+ customs duty as applicable.
- (e) Thereafter, other charges as leviable and as required in terms of tender conditions (viz. training, installation & commissioning charges etc. as quoted, if any) are to be added to the total landed cost to arrive at the total cost of the offer.
- (f) The bidder shall include all charges in the tender for delivery & installation of equipments at customer premises for completion of project.

6.2 **Port Clearance:** The clearance of imported / spares shall be done by the contractor on behalf of the Purchaser.

6.3 **PACKING:** The items tendered will have to undergo arduous transportation before reaching the destination and will have to be stored and handled in tropical climatic conditions (including monsoons) before they are put to the actual use. It is, therefore, imperative that packing for every item is decided by taking into consideration, inter-alia, the above vital factors shall be done by the contractor, so as to eliminate damage/deterioration of item in transit/ transshipment/ handling or during storage.

6.4 **IMPORT LICENCE:** The contractor will have to apply to the proper Government Authority for grant of requisite import licence/foreign exchange for such items as require import, within 14 days of the advance letter of acceptance/telegraphic acceptance and the purchaser will only render such assistance as considered necessary.

7. **Delivery, Installation and Commissioning:**

7.1 Delivery of the stores at Delhi Police premises shall be completed by the Supplier in accordance with the terms specified by the Purchaser within 12 weeks from the date of Award of Contract subject to the condition that the Purchaser provides the following to enable the Supplier to start the manufacture of the equipment:

a. Trunked Radio frequency spots within the frequency band available namely the 806-825/851-870 MHz band.

b. Microwave Radio frequency spots in 7 GHz band.

- 7.2 The installation, testing, integration and commissioning of the proposed system shall be completed within a period of 12 weeks after the delivery of the stores at Delhi Police premises or within a total period of 24 weeks from the date of award of contract.
- 7.3 The related licenses for import of APCO Phase-II System and wireless sets shall be the responsibility of the bidder from all government organizations. However Delhi Police will complete all relevant formalities of obtaining licenses. The delivery period of stores shall be counted from the date of getting required licenses.
- 7.4 The delay in providing sites shall be the responsibility of the Purchaser. The successful bidder shall apply for site preparation and it will be Purchaser's responsibility to provide site with basic infrastructure including raw power.
- 7.5 **Delivery of Stores:**The Supplier shall notify the Purchaser about the delivery of the Stores to the Delivery Site two weeks in advance of the expected date of partial or complete delivery.
- 7.6 **Transfer of Title:** Upon each partial delivery of the Stores at the Purchaser's delivery site, an inventory of the Stores shall be taken jointly by the Supplier and the Purchaser to be completed within five (5) working days of such delivery to ensure that the supply is complete and in order. After the inventory of each partial delivery of the Stores has been completed to the entire satisfaction of the Purchaser, the title of those Stores will be transferred to the Purchaser. In the event of short shipment or damage to the Stores inventorized, the title of only those items of Stores that are in order will transfer to the Purchaser.
- 7.7 The Supplier shall ensure that its representatives are present for the inventorisation of the Stores supplied under the contract failing which the Purchaser shall proceed with the inventorisation in the Supplier's absence and the Purchaser's inventorisation report shall be binding on the Supplier.

8. Inspection and Tests :

- 8.1 The Factory Acceptance Test Procedure (the "Factory ATP"):
- i) The system will be fully programmed and tested in OEM's factory for System Integration. This testing will be conducted by the supplier/OEM to demonstrate the radio system features, programming and functional operation.
 - ii) **Customer Witnessing Test Plan:** After the radio system has been stacked, racked, wired, powered, programmed and tested by the Supplier, there will be a scheduled demonstration for the Purchaser at OEM's location. At this time, five (5) nominees of the Purchaser shall witness the following test demonstrations:
 - a) The Equipment layout and wiring for all radio sites in the system.
 - b) Equipment and cable labeling.
 - c) Radio system voice and data communication operation as specified in the tender document.
 - d) Pertinent features of the APCO Phase II system.
 - e) Inter site Microwave link connectivity.
 - f) Console dispatch positions in operation.

- g) Trunking System Control and Switching Equipments (TSCSE) log-on and operation.
 - h) Mobile Radio Operation with GPS capability.
 - i) Portable Radio Operation with GPS capability.
 - j) IP voice logger.
 - k) Digital vehicular portable repeater operation.
 - l) MIS reports for system health check up and operation.
- iii) Should any inspected or tested Goods fail to conform to the Technical Specifications of the Tender, the Purchaser may reject them and the supplier shall either replace the rejected Goods or make all alterations necessary to meet the aforesaid specifications at no extra cost.
 - iv) After the Purchaser's representative Witnessing the Test & approves the system operation, the Goods will be shipped.
 - v) The expenditure incurred in sending the five (5) nominees of the Purchaser for the Customer's Witnessing Plan in respect of travel, accommodation, meals and local transportation shall be borne by the supplier. The bidder shall arrange FAT programme for maximum one week to ensure complete demonstration & testing of essential parameters as per schedule above.
- 8.2 The purchaser shall have the **right to inspect** and/or test the stores for conformity to the contract specifications. Should any inspected or tested Goods fail to conform to the Technical Specifications of the Tender, the Purchaser may reject them and the supplier shall either replace the rejected Goods or make all alterations necessary to meet the aforesaid specifications at no extra cost.
- 8.3 The supplier shall test the complete system after installation at site and prepare a test report. This shall be compared with the Factory Acceptance Test report to ensure that there is no deterioration in the Equipment parameters during storage, transportation and installation.
- 8.4 After the installation and optimization phase, the System's fixed infrastructure equipment shall also be tested, jointly by the technical teams of the Supplier and Purchaser, to set and optimize parameters. The test data shall be recorded for each applicable component.
- 8.5 Supplier's Program Manager shall be responsible for the coordination and scheduling of the final ATP activities; a schedule will be worked out with the Purchaser prior to the Final Acceptance Testing.
- 8.6 The Purchaser will ensure that its authorized nominees commence the Final Acceptance Testing in accordance with **Clause 8.7** below within Six (6) weeks from the supplier's notice. The warranty Period shall commence after the final ATP is completed and thereafter final Payment shall become due and payable to the supplier.
- 8.7 **Final Acceptance at Site Test Procedure (Final ATP):** The Supplier shall **submit to the Purchaser the finalized ATP documents within 30 days** from the date of Contract, for approval. Once the ATP is mutually agreed by both parties, the ATP shall form part of this Contract. Inspection and Testing of the system shall be performed in accordance with the ATP. The successful completion of the ATP will be the sole criterion for Final Acceptance of the System.
- i) For the purpose of taking over the system Final Acceptance Testing shall be carried out at the Purchaser's site.

- ii) After the system is fully installed, optimized and ready for the Final Acceptance Testing, the same will be carried out to validate system features and functional operation in the field in accordance with the Final ATP.
 - iii) An Inspection Team comprising the authorized nominees of the Purchaser and the supplier respectively shall carry out the Final Acceptance Testing.
 - iv) The Inspection Team shall test the complete system to ensure that the System meets the Agreed Specifications.
 - v) The Purchaser shall have the right to reject the complete System if, in its opinion the same does not meet the Agreed Specifications and if the Supplier does not set right the shortcoming in the System, within 30 days of written intimation to the supplier.
- 8.8 When the Final ATP is successfully completed, an Acceptance Certificate shall be prepared by the Inspection Team and submitted to the Purchaser for take-over of the System and further necessary action.
- 8.9 The installation or commissioning shall not be deemed to have been completed unless the system is accepted by the Purchaser.
- 8.10 Before the system is taken over by the Purchaser, the supplier shall supply installation, operation, repair and maintenance manuals of the Equipment/System. This shall include the following:
- a. System Interface Drawings.
 - b. System Interconnection and Block Diagrams.
 - c. User Operation Manuals.
 - d. Detailed Equipment Maintenance Manuals.
 - e. As Built-up Drawings.
- 8.11 Complete documentation of all the measurements conducted during the installation period shall be submitted by the supplier for future reference. Five copies of this documentation shall be supplied to the Purchaser.
- 8.12 The technical problems faced during installation, testing and commissioning period and their solutions shall be submitted by the supplier at the time of handing over the completed works to the Purchaser. Five sets of this documentation shall be supplied.
- 9. New Technology/Upgrade:** The supplier shall share with the Purchaser any subsequent upgrade of the technology that may become available so as to ensure that the system provided under this contract is not rendered obsolete. The Upgrade may be by way of software/hardware upgrade or by way of buy-back scheme on mutually agreed prices based on standard depreciation and terms and conditions between the Purchaser and the Supplier. The Supplier will from time to time notify the Purchaser of any relevant new technology applicable to or information on upgrading of the Purchaser's System and if so requested by the Purchaser, the Supplier shall quote the terms and cost for such supply.
- 10. System Security:** The supplier shall give confirmation that the digital end to end encryption to be deployed in the system shall be temper proof and based on encryption AES 256 which makes it difficult to decipher by an unauthorized interception/ tapping. Digital encryption shall use AES 256 bit encryption. The key can be changed by the keyloader/ Over the Air (OTAR). In the absence of keystream generation function, key variable and/or the synchronizing input, it will be almost difficult for a third party to decode the messages thus providing high grade security.

The Supplier shall provide all the necessary technical documentation/support, as and when the requirement for secured channels arises in the System, to ensure the Purchaser to seek necessary certification from the SAG.

11. Change Order:

- a. Either the supplier or the Purchaser may request, at any time, by written notice, changes in the Equipment and/or services purchased in this Contract subject to the agreement of the other party.
- b. If any changes notified under this clause causes an increase or decrease in the cost of or time required for the performance of this Contract, an equitable adjustment shall be made to the Contract Price or Payment Terms or Implementation Plan or all, and the Contract shall be modified in writing accordingly, Neither Supplier nor the Purchaser is obligated to comply with any changes hereunder unless and until the parties reach agreement as to the aforementioned equitable adjustment and the same is reflected as an addendum to this Contract.

12. Compliance with Legal Provisions: Except where otherwise agreed and specifically undertaken by the Purchaser, the Supplier will apply to the proper Government Authority in India or abroad for grant of requisite import License/foreign exchange permits, approvals, registration etc. and the Purchaser will only render such assistance as considered necessary in India.

13. Insurance: The Goods supplied under the Contract shall be fully insured on a warehouse-to-warehouse basis by the Supplier against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery.

14. Inspection and Tests:

- 14.1 The Purchaser shall have the **right to inspect** and/or test the **Stores** for conformity to the Contract Specifications.
- 14.2 Should any inspected or tested Stores fail to conform to the specifications, the Purchaser may reject them and the Supplier shall either replace the rejected Stores or make all alterations necessary to meet specification requirements free of cost to the Purchaser.
- 14.3 The Supplier shall provide installation and standard test procedures for the individual equipment and for the complete System offered.
- 14.4 The Supplier shall test individual equipment and the complete System after installation at site. The Supplier shall submit complete documentation of all the measurements conducted during installation period for future reference of the Purchaser.
- 14.5 A document comprising of the technical problems faced during installation, testing, integration and commissioning period and their solutions shall be submitted by the Supplier at the time of handing over the completed works to DCP(Ops & Comn), Delhi Police.

- 14.6 For the purpose of taking over the Stores/system supplied, an **Acceptance Test** shall be carried out at the Purchaser destination site. The equipment that meets the acceptance test shall only be accepted by the Purchaser.
- 14.7 The installation or commissioning shall not be deemed to have been completed unless all the Stores and System are accepted by the Purchaser.
- 14.8 Before the equipment is taken over by the Purchaser, the Supplier shall supply installation, operation, repair and maintenance manuals of the equipment/system. This shall include the i) System Interface Drawings, ii) System Interconnection and Block Diagrams, iii) User Operation Manuals & iv) Detailed Equipment Maintenance Manuals.

15. Guarantee/ Warranty:

- 15.1 The Supplier shall provide comprehensive on-site **Guarantee/ Warranty** for all Stores/equipment supplied under the Contract at least for a period of **3 (three) years from the date of final acceptance of the System**. The batteries for portable Radios shall be warranted for 18 months. An undertaking to this effect shall be furnished as per **Annexure-T3, Chapter-7** along with the Technical Bid.
- 15.2 The Supplier must have a maintenance base in Delhi/NCR to provide maintenance service, of the System being offered, efficiently and promptly. The Supplier shall undertake to establish a maintenance base in Delhi/NCR within 15 days from the date of provisional acceptance order for the functioning of office, for keeping it functional with respect to this APCO Phase-II project until completion of the contract period, in case the Supplier does not have a maintenance base in Delhi/NCR already.
- 15.3 If the performance of any individual equipment or System fails to meet the contract specifications then the same shall be replaced by the Supplier free of cost during the term of the warranty/guarantee period.
- 15.4 The Supplier shall provide necessary Software upgrades/updates free of cost during the warranty/guarantee period.
- 15.5 The maintenance services, including spares shall be free of cost during the warranty/guarantee period.
- 15.6 During the term of warranty/guarantee the service/repair calls will have to be attended by the Supplier within two hours from the time of such calls. The defective card/item/equipment should be repaired / replaced on the same day at Purchaser's location. In case of major defects requiring the defective card/item/equipment to be taken to the Supplier's workshop, an immediate substitute card/item/equipment will be provided by the Supplier for the smooth operation of the System. The to and fro transportation of the card/item/equipment will be the responsibility of Supplier.
- 15.7 Apart from the service/repair calls, the service engineer deputed by the Supplier will visit the site once every month to assess the serviceability of the System and four times in a year to carry out the Preventive Maintenance and diagnostics of the system installed at Main Site and Repeater Sites during the Warranty Period. The wireless sets (Mobile as well as Hand Held) will be repaired on the basis of complaints received from the purchaser.

- 15.8 Delays in attending the calls and or repairing the defective card/item/equipment beyond time limit specified in this Clause, without providing the substitute, will attract penalties in accordance with **Clause 23 of Chapter 2**.
- 15.9 If the Supplier fails to repair or replace the defective Equipment/ Item, the Purchaser will be free to get the same repaired/replaced from the market and its cost will be adjusted from the Supplier's Contract Performance Bank Guarantee or recovered from the Supplier.
- 15.10 The supplier shall depute their Technical Team on round the clock basis at main site, NDMC site and other important repeater sites during the national arrangements to ensure uninterrupted operation.
- 16. Post-Warranty Services And Maintenance:**
- 16.1 The Supplier shall be responsible for the comprehensive on-site maintenance of the entire System including both hardware and software, at a reasonable price, for a minimum period of seven years after expiry of the warranty/guarantee period assuming the life span of the System to be 10 years. The bidder shall indicate the estimated life span of the quoted System. An undertaking to this effect shall be furnished as per **Annexure-T3, Chapter-7** along with the Technical Bid.
- 16.2 The Supplier shall quote the rates for comprehensive Annual Maintenance of the entire System including both hardware and software in the Price Schedule (Chapter-5) for all the 7 years after expiry of the warranty/guarantee period of three years.
- 16.3 The payment towards CAMC shall be payable quarterly after successful completion of the maintenance service during that period.
- 16.4 Under the CAMC, the Supplier shall provide comprehensive maintenance services of the entire System including the spares and there shall be no hidden cost.
- 16.5 Preventive maintenance service of the System under CAMC must be carried out once in three months.
- 16.6 During the period of CAMC, the service/repair calls are to be attended by the Supplier within two hours from the time of such calls. The defective card/item/equipment should be repaired the same day at Purchaser's location. In case of major defects requiring the defective card/item/equipment to be taken to the Supplier's workshop, it should be returned within, six weeks duly repaired and immediate substitute card/item/equipment will be provided by the Supplier for the smooth operation of the System. The to and fro transportation of the card/item/equipment will be the responsibility of Supplier.
- 16.7 Delays in attending the calls and or repairing the defective equipment beyond time limit given in this Clause, without providing the substitute, will attract penalties. CAMC charges of the delayed period will not be paid if the delay is more than Eight (08) hours from the specified time limit on pro-rata basis.
- 16.8 If the Supplier fails to perform any of the Services of the Contract within the time period specified in the tender, the Purchaser shall, without prejudice to its other remedies under the tender, deduct from the pending bills/Contract Performance Bank Guarantee, by way of penalty, a sum equivalent to Half Percent (0.5%) of the price of the CAMC rates for each and every week (part of a week being treated as full week) of delay until actual performance.

- 16.9 If the Supplier fails to repair or replace the defective card/item, the Purchaser will be free to get the same repaired/replaced from the market and its cost will be adjusted from the Supplier's pending bills/Security deposit or recovered from the Supplier.
- 16.10 The Supplier shall not retract from the responsibilities under the CAMC Contract once the Contract is signed. However, in the unlikely case of violation, the Purchaser will be at liberty to forfeit the Contract Performance Bank Guarantee and make recoveries from the firm besides initiating legal proceedings against the firm.
- 16.11 The Purchaser shall also have the right to decide whether or not to enter into the maintenance agreement with the Supplier.

17. Training:

- 17.1 The scope of work envisages that the Bidder shall undertake to train communication engineers and other staff nominated by Delhi police in different aspects of equipment design, functioning, field installation, testing, commissioning, system management, operation & administration, maintenance and repair. The Bidder should provide training programmes for the purchaser's Engineers, Technicians and system users.
- 17.2 The supplier shall at every stage of installation; testing and commissioning provide all facilities for adequate training of Delhi Police personnel who may be deputed to work on the project.
- 17.3 In first part Delhi Police will depute its twenty (20) engineers / Technicians for training at the works of the manufacturers factory premises for the period of Four (04) Weeks. In case of works out side India, all the expenses including fare, lodging and boarding should be borne by the supplier. The Team of Delhi Police Officers should also be part of system acceptance at factory level.
- 17.4 In second part the supplier should provide Four (04) Weeks training to the 50 engineers/Technician of Delhi Police at the premises of Purchaser at no extra cost. Both training part should cover the following aspects:
- a. The system architecture, different features of main switch and repeater sites.
 - b. Description of dispatcher console, portable/mobile radios, digital voice logger etc.
 - c. Description of microwave links and antenna systems.
 - d. Description of all functional assemblies of the system, including controls, indicators and monitoring system.
 - e. Line up procedures for the system and adjustment of operating parameters and other Operation and maintenance procedures.
 - f. Practical replacement procedures/practices for major assemblies including RF units, to the experienced technicians of police in the complete trouble shooting and maintenance of the equipment, both at the board replacement and preferably at the board repair level.

Third part-User Operational Training:

- a. This training programme will be conducted at the user's location and will be structured so as to train up to 25 of the purchaser's supervisory and training personnel who will in turn train individual operators.
 - b. The engineers and technicians should be taught the functionality of each equipment in the system and to identify common hardware/software failures.
- 17.5 Bidder will provide complete details on the training programs to be offered including:

(a) Material to be covered, (b) Number of hours of training per operator or technician for each specific course and (c) Supporting documentation to be provided.

18. Spare Parts: The Bidder will submit undertaking from the manufacturer (OEM) that supplies of necessary maintenance equipment and spare parts will be made available for all Items/ Equipment and the complete System for a period of 10 (Ten) years on a continuing basis and life time spares after 10 years.

19. Use of Contract Document & Information: The supplier shall not, without the Purchaser's prior written consent, disclose the contract, or any provision thereof, or any specifications, plan, drawing, pattern, sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the supplier in the Performance of the contract.

20. Sites Preparation:

20.1 The site for installation of the equipment/materials shall be provided by the Purchaser/Consignee as per the required specifications.

20.2 Site Plan and equipment layout plan for the trunked radio system shall be prepared by the supplier including power supply equipment within one month from the date of award of contract. The lay out plan shall show inter connecting cables routes between various equipments at the Main Control Room and the repeater sites.

20.3 The Main Control Room and Repeater Stations including Microwave Equipment shall be installed by the Supplier at site. The supplier shall ensure minimum use of microwave frequency by re-using the frequency of other sites having no interference. The bidder will project the number of microwave frequency and BTS frequency required for completion of the project with the architecture diagram within a month of the award of the contract. Interconnection of Radio Equipment to power supply, Antenna system and feeder cable including interconnecting cable connector's etc. shall be the responsibility of the Supplier. Installation shall be as per standard procedures.

20.4 The Purchaser shall be responsible for the provision of site building, floor space, sufficient lighting, raw power, for ensuring ease of access to the Purchaser's sites by land and for all applications, permits, approvals and clearance in connection with the aforesaid purpose.

20.5 The repeater antenna shall be installed and aligned to receive optimum signal level by the Supplier, Similarly, connecting feeders shall be connected to antenna and Radio Equipment by the Supplier as per standard procedures.

20.6 Earthing arrangements for all the equipment shall be completed as per standard practice.

21. Responsibility of Completion & Software Optimization:

21.1 Any fittings or items which may not be specially mentioned in the tender document but which are necessary are to be provided by the Supplier without any extra charge for completeness of the work under this tender.

21.2 The System software and user interactive windows shall be configured after carrying out thorough study of the operations at Integrated Complex, Shalimar Bagh. Thereafter these may be further optimized after installation based on the feed back from the actual users over a period of six months.

22. Delay in the Suppliers Performance:

22.1 Delivery of the Goods and performance of Services including Warranty and Post Warranty Services shall be made by the Supplier in accordance with the time schedule specified by the Purchaser. Delay by the Supplier in the performance of its Delivery or Service obligations shall render the Supplier liable to imposition of Liquidated Damages in accordance with **clause-21** below and thereafter, upon reaching the maximum deduction set out therein, to termination for default in accordance with **Clause-27** below accompanied by forfeiture of Bank Guarantee/Performance Security.

22.2 If the bidder fails to complete the work within the stipulated period, the Purchaser reserves the right to get the work completed from open market and difference of bill, if any, will be recovered from the bills of the Supplier.

23. Liquidated Damages: If the Supplier fails to deliver any or all of the Goods or perform the Services within the time period specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, (not by way of penalty) a sum equivalent to 0.5% of the price of the delayed goods or unperformed service for each & every week (part of a week being treated as a full week) of delay until actual delivery or performance, upto a maximum deduction of 10% (Ten Percent) of the undelivered Equipment/Services.

24. Force Majeure:

24.1 Force Majeure means an event beyond the control of the supplier and not involving the supplier's fault or negligence and which is not foreseeable. Such events may include, but are not restricted to, acts of the purchaser either in its sovereign or contractual capacity, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes, lockouts and freight embargoes.

24.2 If there is delay in performance or other failures by the supplier to perform its obligation under its contract due to event of a Force Majeure, the supplier shall not be held responsible for such delays/failures. In case of Force Majeure delay, the supplier shall give notice within 10 days of Force Majeure to the Purchaser.

24.3 If a Force Majeure situation arises, the supplier shall promptly notify the purchaser in writing of such conditions and the cause thereof within twenty one days of occurrence of such event. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

- 24.4 If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period **exceeding sixty days**, either party may at its option terminate the contract without any financial repercussion on either side.
- 24.5 There may be a Force Majeure situation affecting the purchase organization only. In such a situation the purchase organization is to take up with the supplier on similar lines as above for further necessary action.
- 25. Patent Indemnification:** The Supplier shall indemnify the Purchaser against all third party claims of infringement of patent, copyright, trademark, license or industrial design rights, software piracy arising from use of the goods or any part thereof in the Purchaser's country.
- 26. Assignability:** Neither this Contract nor any rights under it may be assigned by either Party without the express prior written consent of the other Party. However, upon assignment of the assignor's interest in this Contract, the assignor shall be released and discharged from its obligations hereunder only to the extent that such obligations are assumed by the assignee.
- 27. Severability:** If any portion of this Contract or any of the Contract Documents hereto is held to be invalid, such provision shall be considered severable, and the remainder of this Contract hereof shall not be affected.
- 28. Governing Law:** This Contract including the Contract Documents shall be governed by and construed in accordance with the laws of India and the Delhi Courts shall have jurisdiction in this regard.
- 29. Termination for Default:**
- 29.1 The Purchaser may without prejudice to any other remedy for breach of Contract, by Thirty (30) days written notice of default sent to the Supplier and upon the Supplier's failure and neglect to propose and/or execute any corrective action to cure the default, terminate this Contract in whole or in part:
- (i) If the Supplier fails to deliver any or all of the Stores within the time period(s) specified in the Contract; or
- (ii) If the Supplier fails to perform any other obligation(s) under the Contract.
- 29.2 On termination of the Contract for default, the Performance Security deposit of the Supplier will be forfeited.
- 29.3 On termination of the Contract for default, action will be taken to black list the Supplier.
- 30. Termination for Insolvency:** The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, without compensation to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.
- 31. Termination for Convenience:**

- 31.1 The Purchaser shall have the right to terminate the Contract in whole or in part at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of work under the contract is terminated and the date upon which such termination becomes effective.
- 31.2 The Goods those are complete and ready for shipment within Ninety (90) days after the Supplier's receipt of notice of termination shall be purchased by the Purchaser at the Contract terms and prices. For the remaining Goods the Purchaser may elect:
- (a) To have any portion completed and delivered at the Contract terms of prices, and/or
 - (b) To cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and for materials and parts previously procured by the Supplier.
32. **Resolution of Disputes:** In the case of dispute or difference arising between the Purchaser and the Supplier relating to any matter connected with this contract, the same shall be settled through amicable negotiations between a maximum of Two (2) officers nominated by the competent authority of Delhi Police and Two (2) employees nominated by the Supplier, failing which, the dispute shall be submitted to arbitration in accordance with the provisions of the Arbitration and Conciliation Act, and the Arbitrator's decision shall be final & binding. The language of arbitration shall be English. The venue of the conciliation and/or arbitration proceedings shall be in Delhi, India.

CHAPTER - 3

Schedule of Requirement

DIGITAL RADIO TRUNKING SYSTEM OPEN STANDARD APCO-25 Phase-II

Typical system configuration with minimum required specifications, the successful bidder shall indicate higher specifications if any, for full functioning, successful and trouble free installation, commissioning, operation and maintenance of the system supported by all necessary hardware, licensed software and documents along with the technical bid.

A. System Equipments:

Sr. No.	Requirement	Qty.	Unit Price Rs.	Total Cost Rs.
1.	Main Control Room Equipments (Master Site): a. Digital Open Standard APCO 25 Phase II Radio Trunking System Control and Switching Equipment (TSCSE) IP Based with hot standby controller b. Network Management System comprising of Network Management Server (NMS) and Network management Terminals (NMT) with two clients c. Packet Data and Text Messaging Server d. AES 256 encrypted Dispatch Consoles collocated at Central Police Control Room e. 60 Channels IP based Digital Voice Logger System f. Hardware and Software for AVLS/APLS Server and Client g. 50" LED Monitor of reputed make for AVLS/APLS h. Telephone interconnect Gateway with E1 over QSIG/SIP over IP based	01 01 Lot 01 45 01 01 Lot 02 01		
2.	APCO 25 Phase II Repeater/ Base Station Equipments: a. Repeater Stations with Redundant Repeater Site Controller, Masts/ Towers of required height, Antenna System, Transmitter Combiner, Receiver Multicoupler, Tower Top Amplifier, Couplers, Cables, Surge and lightning protection system, accessories etc. b. 7 Carrier RF Repeaters/ Base station APCO-25 Phase-II Radio Trunking (800 MHz) c. 3 Carrier RF Repeaters/ Base station APCO-25 Phase-II Radio Trunking (800 MHz)	01 lot 01 07		
3.	Antenna Masts/ Towers as per specifications	08 Lot		
4.	Redundant 7 GHz Microwave links to connect all repeater stations to master site with necessary tower and accessories.	11 Lot		
5.	APCO 25 Phase-II Full keypad Static Radio with GPS, AES 256 encryption and accessories as per Technical Specifications.	200		
6.	APCO 25 Phase-II Full keypad Mobile Radio with GPS, AES 256 encryption and accessories as per Technical Specifications.	1250		

7.	APCO 25 Phase-II Full keypad Portable Radio with GPS, AES 256 encryption, belt clip, Li-ion or better battery, Single unit battery charger and accessories as per Technical Specifications. a. 06 Position rapid Multi Unit chargers b. Spare Li-ion 2100 mAh or better batteries c. Light weight Speaker Microphone, earphone with clip, complete hand free kit for each Hand Held Radio d. Suitable carrying case	1500 50 3000 1500 1500		
8.	APCO P25 Phase II Digital Vehicular Repeater System (For Coverage Enhancement) with all accessories.	05		
9.	Programming kits: a. Repeater / Base Station Equipments b. Static Radios c. Mobile Radios d. Portable Radios e. Inter Site Link Test Equipments f. Portable programming laptop for repeaters and Master switch	12 10 10 20 06 09		
10.	AES encryption for APCO infrastructure and Key Management System: a. Hardware and software for OTAR with two clients b. Hardware and Software for OTAP with two clients c. Key loader with interface cables	01 lot 01 lot 05		
11.	Commensurate capacity 1+1 redundant online UPS's for all offered equipments with phase changeover switch for UPS and direct mains with maintenance free battery bank for 8 hours backup for: a. For Repeater sites of 7 carrier b. For Repeater sites of 3 carrier c. Central Police Control Room, Shalimar Bagh	01 Lot 07 Lot 01 Lot		
12.	Test Equipments/ Tools: a. Radio Communication Test Set for APCO P25 Phase II Trunked radio system with auto test and auto alignment facility. b. Through Line Power meter c. Any other item required for field testing	01 15 01 lot		
13.	Temperature Maintenance System: a. Sufficient numbers of Weather Control System at Repeater sites of 7 carrier with automatic change over every 6 hours. b. Sufficient numbers of Weather Control System at Repeater sites of 3 carrier with automatic change over every 6 hours. c. Sufficient numbers of Weather Control System at APCO switching centre with automatic change over every 6 hours.	01 Lot 07 Lot 01 Lot		
14.	Miscellaneous: a. Critical Spares for the system infrastructure b. Earthing policy c. Transient protection	01 lot 01 lot 01 lot		
15.	Manuals of System components, TSCSE, repeater radios,			

	static/mobile radios, portable radios, Digital Voice Logger, antenna system, inter site link equipments etc.: a. Operating Manuals b. Service / maintenance Manuals c. Programming Manuals	100 05 12		
16.	Any other hardware/software/system equipment required to meet the technical specifications of the tender	01 Lot		

B. Services:

Sl.No.	Requirement	Qty.	Unit Price Rs.	Total Cost Rs.
1.	Project Management, Installation, Commissioning, Programming, Acceptance testing	01 lot		
2.	Master and Repeater site preparation alongwith cable tray inside the room, power cabling, earthing, surge protectors etc.	01 lot		
3.	Three years on site comprehensive warranty for all equipment's (except batteries)	01 lot		
4.	Training: a. Repair/ Maintenance Training at the works of the manufacturers factory premises b. Repair/ Maintenance Training at the premises of Purchaser c. User Operational Training at the user's location	01 lot 01 lot 01 lot		
5.	Master Switching Site shifting charges to new Police Headquarter building at Parliament street	01 Lot		

C. Accessories:

S.No.	Requirement	Qty.	Unit Price Rs.	Total Cost Rs.
1.	4 Channel conventional network Gateway	01		
2.	Bluetooth headset for portables	500		
3.	Vehicular Charger for portable radios	1000		

Note:

1. The Bidder shall quote for the items and quantities as listed above in the Price Schedule format (Chapter-5) and it shall be uploaded in the commercial bid.
2. The bidder shall also submit the **scanned copy of** Bill of Material as per Schedule of Requirement (**Chapter-3**) clearly giving the country manufacture, nomenclature, make, model no. & quantities of all the items to be supplied for new latest APCO Phase-II system under this Contract. It shall be **uploaded** with the Technical Bid.
3. The Project shall be completed on turnkey basis and any other item/ hardware/ software/ service required for successful completion of the project shall be provided by the finally selected bidder within the quoted prices.

CHAPTER – 4

TECHNICAL SPECIFICATIONS OF DIGITAL RADIO TRUNKING SYSTEM OPEN STANDARD APCO-25 Phase-II FOR DELHI POLICE

S.No.	Description
1	SYSTEM OVERVIEW:
1.1	<p>Introduction : Delhi Police intends to install Fully Digital Open Standard APCO-25 Phase-II Radio Trunking System, in 800 MHz Frequency Band, fully ready for Wide Area Multiple site Operations for all over Delhi coverage.</p> <p>a. System infrastructure and control room site equipments should be IP based.</p> <p>b. Flexibility: The system must have flexibility for future up gradation as the system is expected to serve the communication requirement of Delhi Police for at least next 10 years.</p>
1.2	Dispatch Center Sites: Dispatch Site at Shalimar Bagh, at the office of the Deputy Commissioner of Police, Ops & Communication, Delhi.
1.3	Multi Channel Operation: The system should be capable of supporting minimum 20 operational channels per site. The bidder should specify with technical limitations the maximum number of channels the proposed system can support per site.
1.4	Modular Expansion : The system must have the capability of modular expansion in channels by adding extra repeaters only (upto the capacity) at each site.
1.5	Efficient Channel Utilization: The system shall not unnecessarily tie up multiple channels at multiple sites, for all call types, for the same user. The system must be efficient in order to minimize the number of channels used in any given conversational scenario. The bidder shall describe how the channel can be efficiently allocated.
1.6	System Reliability: Purchaser is very concerned about the reliability of such an expensive system. This Digital Open Standard APCO-25Phase-II Radio Trunking (800 MHz) System will be used all over Delhi. The Bidder must substantiate technically that their proposed system is very reliable or has adequate reliability mechanisms included in its architecture / design portfolio. No degradation in the system trunking features is permissible in case of failure of a controller. All field replaceable units must be hot swappable.
1.7	Roaming: Subscriber radio should be capable of accessing any and all sites within the system for ease of roaming.
1.8	<p>Number of Talkgroups :</p> <p>a. A Talkgroup is defined as group of members having the same functions or role and where there is a need to communicate to each other. The system should support at least 500 Talkgroups, with the capability to expand. The bidder should specify the maximum number of talkgroups the proposed system can support.</p> <p>b. It should be possible to further divide the talkgroups into sub-talkgroups based on the operational requirements. The Bidder should specify the maximum levels of sub-groups / hierarchy supported by the system.</p>

	<p>c. Any subscriber radio can be programmed to be a member of any talkgroup either at initial implementation or at any time in the future. Bidders should describe how this process would take place and what would be the restrictions when a subscriber radio is added in a talkgroup.</p> <p>d. All subscriber radios should be capable of being assigned with talkgroups address designators. All subscriber radios operating with the same talkgroup must receive both sides of every conversation addressed to or from the talkgroup.</p>
1.9	<p>Number of Unique Individual Radio ID :</p> <p>a. The signaling language will permit the system to assign not less than 30,000 unique individual radio IDs (Identification), with the capability to expand. The bidder should specify the maximum number of unique individual radio IDs the proposed system can support.</p> <p>b. All radios must have the capability of being a member of any or all talkgroups. Regardless of the talkgroup affiliation, the radio ID for subscriber radio should not change. Each subscriber radio must have its unique individual radio ID, independent of talkgroup and/or telephones interconnect capability.</p>
1.10	<p>Up gradation / Updation: The system and subscriber radio features and facilities should preferably be software upgradable.</p>
1.11	<p>The equipments / items of the proposed system should meet all EMI/EMC standards wherever applicable.</p>
1.12	<p>Interoperability: The entire system shall be IP based such that future expansion of sites is possible. Other Manufacturer's Radio terminals of Digital Open Standard APCO P25 Phase II should operate on the system with standard trunking features. Bidder shall submit test report/certificate for the proposed subscriber radios and repeater in compliance to APCO P25 Phase II requirement. The bidder shall demonstrate the interoperability with sample sets of other vendors.</p>
1.13	<p>The proposed trunked radio system shall comply with the latest applicable P25 suite of standards adopted as TIA and/or ANSI documents at the time of the proposal submission.</p>
1.14	<p>The bidder should offer portable radios, Mobile/ Static radios, Repeater stations and main Trunking controller/ switch of single OEM.</p>
1.15	<p>Frequency Planning:</p> <p>a. The successful bidder shall perform radio frequency planning ensuring efficient use of the available frequency pairs. The frequency plan including calculations shall be submitted to Delhi Police for review, as part of the Design stage. The system shall operate in 800 MHz band with minimum channel separation 12.5 KHz.</p> <p>b. The successful bidder shall perform radio frequency planning for microwave link in ring topology ensuring efficient use of available frequency pairs. The frequency plan including calculations shall be submitted to Delhi Police for review, as part of the Design stage.</p> <p>c. The successful bidder shall enclose detailed calculations as part of the Design stage, to establish that there will be no interference/ illegal carrier from other radio communication links operating in this area in the same band of frequencies.</p> <p>d. The use of radio frequency spectrum in India is regulated by the Wireless</p>

	<p>Planning and Coordination (WPC) Wing of the Ministry of Communications, Government of India. Frequency clearance for the use of specific frequencies is to be obtained. Based on the frequency plan proposed by the successful bidder, approval from WPC shall be obtained. The bidder, if so required by the WPC, shall incorporate specific changes in the frequency plan, after mutual discussions.</p>
2	SYSTEM FEATURES :
2.1	<p>Signaling Channel Concept :</p> <p>a. This Digital Open Standard APCO-25 Phase -II Radio Trunking System should operate using the dedicated signaling control channel protocol concepts with high speed data of 9.6 Kbps or better.</p> <p>b. Every repeater channel should be capable of acting as control channel with redundancy at a particular instant of time. All repeaters should be capable of acting as control channels with four levels of redundancy at a particular instant of time. If the active signaling channel fails, one of the other signaling capable RF voice channel will automatically take over as the signaling control channel and become fully operational. Bidder should explain the signaling scheme in detail.</p>
2.2	<p>Priority Levels:</p> <p>a. The proposed system should allow a dispatch console operator to preempt or over-ride a particular subscriber radio into a selective call, group call to pass important conversation.</p> <p>b. A minimum of 8 (eight) levels of priority should be incorporated in the system to ensure timely processing of calls, including group call, individual calls as well as telephone calls. A System Manager Terminal (refer to section : System Manager Terminal) should assign individual and group priority levels to all subscriber radios. The levels of priority are classified as follows.</p> <p>c. Emergency Priority – This should be highest level of priority upon activation of the emergency button, the next available voice channel should be immediately assigned regardless of system loading.</p> <p>d. Operation Priority – This should be the next 7 levels of priorities, to be assigned according to the requirements of the users.</p>
2.3	<p>Automatic Retry: In an adverse signaling condition, when a subscriber radio's request for voice channel, is not properly received by the system on the first try, the subscriber radio should automatically send the request again, until the request is acknowledged or the maximum allowed number of retries is reached. The bidder should specify the maximum number of retries for the system.</p>
2.4	<p>Out of Contact Indication :</p> <p>a. Whenever a subscriber radio leaves the coverage of the signaling channel, and attempts to access the system (via PTT), an audible alert should be sounded. These alerts should have distinct tones other than any other audible tones generated by the subscriber radio. This will enable the end user to determine that the radio unit is out of contact with the system.</p> <p>b. Dispatch console should be alerted by visual or audio indication if called</p>

	radio is out of range/ contact.
	c. In addition to audible alert, a visual indication of this condition is preferred to be displayed on the operator console & NMT/ SMT.
2.5	Queuing of Request for Voice channel: If the system becomes fully loaded (all available RF voice channels are assigned) the second and lower precedence level requests for a voice channel will be placed in a queue. The queue will cause the system to assign voice channels (as they become available). According to the priority levels bidders should specify the length of queue.
2.6	System Busy Tone : When the system is fully loaded and the subscriber radio requests for a voice channel by pressing the PTT, a distinct system busy tone should sound on the radio, as long as the PTT button is pressed.
2.7	Busy queuing call-back :
	a. The system should provide a call-back feature when any subscriber radio is placed into a system busy queue.
	b. The system will cause the subscriber radio to emit an audible alert, specific for call back, and the subscriber radio should access the assigned channel.
2.8	Continuous talk-group Affiliation Notification: The system should broadcast continuous updates of the channel assignments of talkgroups to all subscriber radios enabling the late entrant radios to automatically join conversation in progress.
2.9	Message / transmission type of Talkgroup : The different user groups supported on this system will have different call characteristics, and hence may be supported more efficiently by being message trunked (a certain post transmission access time exists) or by being transmission trunked (the post transmission access time is zero). It should be possible to select message trunked or transmission trunked via the system manager terminal. The repeater hang time should be programmable. The bidder should specify this operation.
2.10	Individual Subscriber Radio Disable :
	a. The system must allow the system manager terminal to disable over the air any subscriber radio(s) currently operational on the system. The system manager terminal must indicate when it succeeds in disabling the subscriber radio. A disabled subscriber radio must not be able to transmit/receive nor otherwise join into any voice conversation on the system.
	b. If for any reason the trunked system is shutdown or disabled, any disabled subscriber radios must remain disabled.
	c. A disabled subscriber radio can only be re-enabled by the system manager terminal. Once this is accomplished, an indication will be sent to the system manager terminal.
	d. To preserve system throughput, the operation of enabling and disabling radios be done through the control channel.
	e. Bidder should describe the above process in detail.
2.11	Multiple Voice Channel:
	a. RF Voice Channels should be assigned as needed and no user should be dependent on any given voice channel for communications, the failure of any one RF voice channel will not be apparent to the user.
	b. In the event of a RF voice channel failure, the controller should not assign

	that particular repeater and will simply continue assigning the remaining voice channels.
2.12	<p>Transmitter Low Power Shutdown:</p> <p>a. In addition to the receiver interference condition, the site controller should detect a loss or decrease in repeater transmitter output power. If the output power of the transmitter falls below a certain threshold level, the site controller should not assign that channel.</p> <p>b. This threshold should be set such that a channel will automatically be taken out of service when its output power drops to a level where communications become degraded.</p>
2.13	<p>Site Trunking: It is imperative that the failure of a site link will result in that site going into site trunking mode and work independently from the rest of the sites in the system. Site trunking mode should still provide limited trunking features just like any single site trunking system. Bidder to specify the features that will be available in single site operation.</p>
2.14	<p>System Fallback Mode: Only when the above multiple points redundancy fail, the site should have a last mode to provide conventional communications via repeaters having battery revert option. Bidder should describe how their system fallback mode works in detail.</p>
2.15	<p>System should support Over the air programming (OTAP) and Over the air rekeying (OTAR) for subscriber radios.</p>
2.16	<p>Encryption: AES encryption for APCO P25 Phase-II infrastructure and key management system should be latest with minimum 256 bits so that the communication through this system is made fully secured. Contractor shall deploy Key Management Centre and ensure that Over The Air key management is deployed for updating keys in radio units in a secure manner. Bidders must include key management tools that support OTAR delivery of crypto keys either via direct connection to the network or via a wireless connection conforming to SFPG Recommendations. Key Management Centre at PHQ and Shalimar Bagh shall be provided with license to support terminals from other manufacturers. It shall be possible to Stun/Kill the compromised terminals. OEM certification to be provided.</p>
2.17	<p>Digital voice and Encrypted Digital Voice transmission: The proposed system should be capable of supporting Digital voice and data. The proposed system should also support Encrypted Digital voice call with the following features.</p> <p>a. Radios equipped with secure capability can have the option to communicate in either the encrypted or clear mode.</p> <p>b. End-to-end encrypted radio communication between two or more radios must be ensured without compromising on voice quality. This means that for a call involving two or more repeater sites, the voice signal remains in encrypted forms both over the air as well as through the link (microwave or optic fiber or wire line) connecting the sites.</p> <p>c. Monitoring of all call, both non-encrypted and encrypted from a dispatch console.</p> <p>d. Transmitting to the subscriber radio from a dispatch console in either</p>

	<p>non-encrypted or encrypted mode.</p> <p>e. The FIPS 140-2 level-3 certified encryptor module must be built-in into the radios.</p>
3	SITE ASSIGNMENT:
3.1	Received Signal Strength Measurement: Roaming subscriber radios operating in the system should be equipped with the capability to monitor signal strengths of the adjacent repeater sites. This allows the subscriber radios to automatically select the site with the best signal, instead of re-affiliating with the next available site when the audio quality at the current site becomes unacceptable. Rest of subscriber radios should be able to operate only in the pre-specified site.
3.2	<p>System Database Updating :</p> <p>a. When a radio user enters a site and changes the talkgroup selector on his radio or switches on the radio, the radio should automatically transmits its unique ID and its talkgroup affiliation to the system controller. Upon the receipt of such a information from the subscriber radio, the system controller should determine the site affiliation of the radios, and update its database with all these new information pertaining to the radio. The whole process should be automatic.</p> <p>b. To allow the system controller to maintain an accurate, up-to-date database on the location of each subscriber radio, the system must also be able to determine if a radio is out of range, switched off or re-affiliated with another site. Thus, calls should not be assigned to users who are not active on the system.</p>
3.3	<p>Dynamic Site Assignment :</p> <p>a. Where members of a talkgroup are not present at a site, that site should not be activated for a conversation involving the said talkgroup. This should ensure that valuable channel resources are not tide-up unnecessarily, and is a critical requirement in this wide area system.</p> <p>b. The System Controller should be programmable via the system manager terminal with information which will designate subscriber radio as either wide area users or single site users. Programming by individual radio for site assignment is unacceptable in this system because of the multiple numbers of sites and the expected large number of users.</p>
3.4	System Handover : As a subscriber radio moves out of a site into another site in the wide area system the radio should automatically affiliate on to the new site. The call in progress must follow the user to the new site. The process must minimize the potential audio loss for soft handover. The Bidder should explain how a system handover process works on his system.
3.5	Subscriber should get traffic channel allotted within 300 msec for single site operation and for multisite operation, bidder should specify channel allocation time.
4	CALL TYPES:

4.1	Selective Call : The trunked system should permit any properly equipped subscriber radios to selectively call another radio, regardless of their talkgroup affiliations or locations within the wide area system. Without involving other subscriber radio users in the system, this should provide privacy to the parties involved in the private conversation. The two radios communicating in the selective call mode should be capable of displaying the other radio ID on the radio display.
4.2	Group Call: The system should allow subscriber radios to be grouped into talkgroups/sub-groups. Under normal operation, group members will communicate with the dispatch console operator as well as with other members in the same talkgroup. The subscriber radio user should be able to talk to other talkgroups that are preprogrammed on the radio by manual selection on the radio. The proposed subscriber radios should receive and display the ID of the transmitting radio.
4.3	<p>Collective Call :</p> <p>a. It should be possible to group any combination of talkgroup into a higher level group for purposes of multi talkgroup/collective calling.</p> <p>b. Collective calls can be configured to interrupt group calls or wait until all group traffic has ceased before being processed.</p> <p>c. Subscriber radios should respond to a collective call without requiring the subscriber radio users to change the talkgroup affiliation. Each collective call should require only one RF voice channel to conserve frequency resources.</p>
4.4	Emergency Call: The proposed system should immediately allocate a voice channel on priority to the authorized radio subscriber even when all the channels are busy, by pressing a single button on the subscribers' radio. The emergency channel assigned will remain with the radio subscriber for a preset period of time.
4.5	<p>Telephone Interconnect Call:</p> <p>a. The bidder should describe the operation of telephone communication in detail and limitations if any.</p> <p>b. Telephone communication IP PABX (SIP over IP)/ E1 over QSIG in case of Mobile /Static/ Hand-held radio to Landline and vice-versa must be supported by the system.</p>
5	<p>COVERAGE AND FIELD TEST:</p> <p>a. The proposed system must provide radio coverage throughout the National Capital Territory of Delhi for Hand Held radios as well as mobile radios with minimum 8 repeater sites mentioned at clause 7.</p> <p>b. The proposed system must provide in building coverage throughout Delhi.</p> <p>c. The proposed system must also provide coverage in the underground sections of Delhi Metro. All the necessary hardware and software to be provided by the Vendor.</p> <p>d. The prospective bidders to submit portable inbound/outbound RF coverage calculations and coverage plots of Delhi considering suitable number of repeater sites mentioned at clause 7 with minimum -85dbm signal strength, to confirm that the required RF coverage stated above can be achieved.</p> <p>e. The RF coverage is defined as the digital Bit Error Rate (BER) that provides a minimum Delivered Audio Quality (DAQ) - 4 or above audio signal for both outbound (talk-out) and inbound (talk-back) communications</p>

- with 95% reliability from a location (to be tested at different time periods).
- f. The DAQ shall be defined as follows:

DAQ	Definition
1	Unusable speech present but not understandable.
2	Speech understandable with considerable effort. Requires frequent repetition due to noise or distortion.
3	Speech understandable with slight effort. Requires occasional repetition due to noise or distortion.
3.5	Speech understandable without repetition. Some noise or distortion present.
4	Speech easily understandable. Little noise or distortion.
4.5	Speech easily understandable. Rare noise or distortion.
5	Perfect. No distortion or noise discernible.

- g. The audio quality shall be tested by the joint team of successful bidder and Delhi Police at different places in Delhi city. DAQ-4 or above audio signal for both outbound and inbound should be ensured by the successful bidder.
- h. The signal/audio quality to be tested inside the building (25%), outside on the fringe area of the coverage (50%), vital locations (15%), underground metro stations of Metro (10%) etc.
- i. Field test shall be carried out after completion of each base station installation in order to estimate coverage and DAQ levels in different locations.
- j. After full completion of all base station installations for checking of handing over, interference, compatibility with existing network and other features.
- k. After completion of microwave networking in order to estimate the required data throughput of 2 Mbps from each base station to the control Centre irrespective of the number of hops in between, automatic change over in case of cutoff of a link.
- l. The signal strength in various locations in Delhi city shall be measured while testing audio quality. The equipment for measuring the signal strength shall be provided by the bidder for testing.
- m. The test equipment to be calibrated by government approved lab.

6

MAIN SYSTEM EQUIPMENTS:

Introduction : The backbone system should consist of one main control site and suitable number of repeater sites to provide reliable, secure digital voice and data communication among the main police control room, districts/ unit control rooms, static/ mobiles and portable radios throughout Delhi. The repeater sites should be linked to the main control site through appropriate microwave link and Cyber Highway of Delhi Police as stand-by to the microwave link.

6.1

Main Control Room Equipments (Master Site): Digital Open Standard APCO 25 Phase II Radio Trunking System Control and Switching Equipment (TSCSE) IP Based:

- a. The TSCSE will be installed at main control room site. The TSCSE should support Digital Open Standard APCO 25 (Phase-II). It will perform automatic multisite signaling and control functions for wide area call. It must support minimum 30,000 subscriber radios and 500 talk groups. The proposed system should support at least 20 sites. The TSCSE should

	<p>support encrypted and clear digital voice calls, data call etc. There should be provision for dispatch console connectivity, voice logger, telephone interconnect, text messaging, packet data service, Over the Air Programming (OTAP), Over the Air Re-keying (OTAR), Network/ System manager terminal NMT/ SMT, Encryption Key Loader, intersite link data etc.</p>
	<p>b. There shall be two clients for OTAR and OTAP facility, one at CPCR, PHQ and other at Integrated Complex, Ops & Comn, Shalimar Bagh.</p>
	<p>c. The TSCSE should have control over the RF channel assignment of the system. It should identify an available RF channel at each site before directing the concern subscriber radio or group of radios to the available voice channel.</p>
	<p>d. The TSCSE controller should be configured in 1+1 hot stand-by in such a manner that a single point of failure on one link will not affect the normal operation.</p>
	<p>e. Any failure in the main TSCSE will be detected and all functions should be taken over by hot stand-by TSCSE automatically without losing any information or data.</p>
6.1.1	<p>Features of TSCSE :</p>
	<p>a. IP based centralized Redundant Switching / Routing Equipment b. Operational voltage - 230 V AC/ - 48V DC c. Management terminal PC with 21" LED monitor or better d. Expandability- Modular e. Lightening protection in power source as well as communication path f. Licensed copy of all system and application software's g. Sufficient communication ports for Switching / Routing Equipment for inter site link configuration h. Bidder should specify capacity of Switch support for: i. Maximum number of Repeater / Base sites. ii. Maximum number for RF / Communication channels iii. Maximum number of Radio terminals iv. Maximum number for Dispatch Consoles v. Maximum number for PABX / PSTN connections vi. Maximum Talk Group vii. Maximum Logical radio ID i. Capability to support Data applications. j. PC to PC data transfer facility. k. Status SDS, Text Messaging facility min. 100 character</p>
6.2	<p>Network Management System: The Network Management System should consist of latest server PC with minimum 21" LED monitor and all necessary software's. It should perform administrative work, configuration management, accounting management, performance management, security management and fault management of the system. The System Manager Terminals should have the capability to access the function and features of the APCO 25 Phase II Open Standard Digital Trunking System. There shall be two NMT's one at CPCR, PHQ and other at Integrated Complex, Ops & Comn, Shalimar Bagh.</p>
6.2.1	<p>General</p>
	<p>a. Administration and maintenance activities remotely on the sub-systems.</p>
	<p>b. System support for number of NMTs.</p>
	<p>c. The NMT should provide map of the equipments such as switch controllers, radio base stations, switches and servers / workstations in radio system with status and alarm indication.</p>

	<p>d. The NMT should provide user-friendly GUI to the NMS administrator and operators with pull-down menu, function keys, online help screens, windows, color pictures and statistical graphs for easy operation and interpretation of information.</p> <p>e. The software for network management system shall be of the same make as the OEM for APCO P25 Phase II System.</p>
6.2.2	<p>Fault Management: The fault management feature should have the capability to monitor and display the status and status history of system components and when needed perform diagnostics. In case of link failure, the alarms shall synchronize automatically after a link restoration assuring that system managers always have complete and accurate history of events.</p>
6.2.3	<p>Configuration Management</p> <p>a. Subscriber Management for</p> <ol style="list-style-type: none"> i. Radios ii. Talk group / Multi-Group iii. Status / Message Management <p>b. Infrastructure Management</p> <ol style="list-style-type: none"> i. Switch Controller Management ii. Radio Base Station Management <p>c. System Software Management</p>
6.2.4	<p>Accounting Management: The accounting management feature should have the capability of tracking the activity of radio users on the system and allow the customer to produce reports about the air-traffic on the system.</p>
6.2.5	<p>Performance Management: The performance management feature should have the capability to monitor, control and optimize the utilization of system resources.</p>
6.2.6	<p>Security Management</p> <p>a. System should support multiple number of network management user accounts.</p> <p>b. Access rights to the various network management applications.</p> <p>c. Multiple levels of access rights to users for performing tasks with these applications.</p> <p>d. The security management feature should have the capability of allowing the establishment of authorized log-on names and passwords to the NMS.</p>
6.2.7	<p>Maintenance of NMS</p> <p>a. Necessary licensed OS, Application and Recovery software to maintain NMS server and terminals.</p> <p>b. Database backup facility.</p>
6.3	<p>Dispatch Consoles: The central police control room should be equipped with dispatch console equipments capable of having communication with the subscriber radios under their respective jurisdictions and control/coordinate their activities. The dispatch console control electronics should comprise of distributed independent multi processors. Each console should be capable of independent operation. The console equipment should be provided with all necessary control to access the APCO P25 Phase II trunked system. The audio routing and interconnection in the console should be based on digital voice switching technology providing virtually no cross talk, even in multiple patching conditions and high immunity to radio frequency fields. It should be equipped with the following minimum features:</p> <p>a. Licensed copy of all system and application software.</p>

	<ul style="list-style-type: none"> b. Dispatch console should be able to control the following: <ul style="list-style-type: none"> i. Individual calls (Digital & Encrypted AES 256 bits) ii. Group calls (Digital & Encrypted AES 256 bits) iii. Data services iv. Radio subscriber repeater site wise Tracking v. Patched-group calls vi. Status, SDS and Text messaging minimum 100 characters. vii. Group membership management
	c. Radio enable / disable facility
	d. More than 2 Dispatch Console operation facility
	e. The Dispatch console with latest professional Computer (PC) with 19" LED Monitor or better.
	f. The Dispatch console with Graphical User Interface (GUI) and follows Windows design standards such as: pull-down menus, drag and drop capability, visual icons, on-line help, graphical toolbar and re-sizing capabilities.
	g. The GUI should be mouse driven.
	h. Group / Individual calls should initiate by selecting a talk-group from the graphical display.
	i. The Dispatch console should show call history.
	j. Dispatch console should control the Dynamic talk group.
	k. A Goose neck micro phone as an input device for voice communication.
	l. A foot switch for PTT activation using the foot.
	m. A reputed make headset with all dispatcher consoles and external speakers.
6.4	Digital Voice Logger System (DVLS) IP based: - The system shall provide audio recording of all channels. This system must be able to reconstruct the total scenario of radio communication and Data between the wireless dispatcher and the PCR van related to an incident. System must provide scenario replay in a simple way to reduce such time dramatically. Replay of the scenario should be possible based on radio I.D. / talk group I.D., Alias, etc as well as date / Time criteria. The system should have the capability to store and retrieve the selected audio calls to an archived media such as DVD/Pen drive etc. Primary storage media should have the capability to store the audio calls for at least 1 year. User must have an account name and password and the administrator must define who has the access to what in the system. User may log in to the recorder and may only have access to his own calls. It should be capable of recording 60 channels simultaneously. The proposed DVLS should be integrated with ERS-112 DVLS so as to provide complete scenario replay.
6.5	Automatic Vehicle/Person Location System (AVLS/APLS):
	<ul style="list-style-type: none"> a. An automatic Vehicle/Person Location System (AVLS/APLS) working on the APCO P25 Network Radios, for monitoring and management of designated radios on 50" LED monitor, shall be provided. b. The AVLS/APLS Server and Client shall be a standalone application subsystem and comprise of hardware, software and network to be located at the Master Site CPR. This application shall be supported on a separate Dispatcher for AVL/APL, with the Fault Management Controller. The Dispatcher shall show a map of the city. Mobiles & Handhelds which have the GPS feature enabled and are out in the open for the GPS to be activated, shall be tracked on the Dispatcher screen. The Dispatcher screen shall show the coordinates of the location of a user along with the

	<p>User ID and shall track its movement as it moves. For, providing this feature, a separate AVL/APL Server shall be provided and interfaced to the Radio system. The Server shall have features such as message queues and prioritization so as to avoid network congestion that might be caused by sending automated message for the AVL/APL application, when a large number of user congregate within the area of a single base station.</p>
	<p>c. The person in control shall be able to know the location of vehicles and Personnel (carrying Radio Units with GPS) automatically over a defined period of time.</p>
	<p>d. The Radio Units having built-in GPS should support the following:</p> <ul style="list-style-type: none"> i. GPS activity indicator ii. Current position information iii. Position information sending on request or on triggers (eg: time, distance, Status message) iv. Position sending during emergency calls
	<p>e. The radio shall automatically update its GPS location when one of the following events happens:</p> <ul style="list-style-type: none"> i. When polled ii. After moving a pre-defined distance iii. After a pre-defined time has lapsed iv. When an emergency call is made v. Bidder shall demonstrate GPS accuracy of ± 10 meters or better
	<p>f. Digital Map: The Base Map shall be provided by Delhi Police; however the bidders will be responsible for integration and display of all APCO P25 GPS enabled resources on the Map.</p>
7	<p>Repeater Stations:</p> <p>a. At present Delhi Police is having 4 repeater sites for APCO Smart Zone System. It is estimated that atleast 8 repeater sites are required for all over Delhi coverage. The following probable locations have been identified for establishing repeater sites with self supporting/ roof top towers to be erected by the successful bidder:</p> <ul style="list-style-type: none"> i. PS Bawana: Ground base tower of minimum height 80 mtrs ii. PS Vijay Vihar: Ground base tower of min. height 80 mtrs iii. NDMC building, Janpath: Tower of min height 21 mtrs on top of the building iv. PS Welcome: Ground base tower of minimum height 80 mtrs v. Welcome Hotel Sector-10 Dwarka: Tower of min height 21 mtrs on top of the building vi. PS Ambedkar Nagar: Ground base tower of minimum height 60 mtrs vii. PS Metro Station Qutub Minar, Ghitorni: Ground base tower of minimum height 60 mtrs viii. PS Jaffar Pur Kalan: Ground base tower of minimum height 60 mtrs ix. PS Nihal Vihar: Ground base tower of minimum height 60 mtrs x. PS Burari: Ground base tower of minimum height 60 mtrs <p>b. The minimum height as mentioned above is indicative. The prospective bidders may carry out the survey of above locations and propose suitable height of masts/towers for installation of the antenna for all over Delhi coverage. The repeater site locations may be changed on mutual</p>

	<p>agreement between Delhi Police and successful bidder to achieve the desired RF coverage.</p> <p>c. The requirement of 8 Repeater sites is indicative, however if required, additional repeater site(s) will be installed by the successful bidder to achieve the desired RF coverage.</p>
7.1	<p>Repeater Site Controller: Site controller should provide the necessary control and signaling functions to interact with the main system controller in dynamic allocation of channels to the requesting subscriber radios. The site controller should differentiate between local and roaming users and allocate the channels accordingly. The site controller should support all types of calls. Site controller should have redundancy and redundant site controller should automatically take over if working controller gets failed. All database updating should take place in working and redundant site controller.</p>
7.2	<p>Repeater System: The repeater should be of Digital Open Standard APCO-25 Phase-II Radio Trunking (800 MHz) and capable of handling digital radios in the network.</p> <p>a. The repeater should be linked to the control and switching equipment installed at the main control room site.</p> <p>b. The repeater system shall be capable of supporting Dual Receiver Diversity so that there is better talk in coverage.</p> <p>c. There should be at least one transmitter and two receivers for each RF channel in the system. Each transmitter and receiver should be capable of operating independently and simultaneously with any or all of the other repeaters in the system.</p> <p>d. The repeater station should be designed for continuous unattended 24 hours of operation. Loss of one RF channel must not affect the operation of the other channels.</p> <p>e. Every repeater module/ base radio must have an independent power supply such that PSU failure shall not affect more than one repeater.</p> <p>f. The repeater station should be capable of monitoring the integrity of its equipments. Automatic alarm reporting to the system manager, operator console and diagnostic aids for detecting and isolating problems should be provided.</p> <p>g. The controller should shut down the respective repeater channel when it detects a carrier on a channel that has not been assigned to members of the system. The controller will not assign that repeater channel until the unwanted carrier is moved. As soon as the unwanted carrier disappears the system controller should automatically put back the repeater channel in operation.</p> <p>h. The repeater should be housed in the free standing in-door cabinets. Every repeater cabinet should come with a surge protection. Diagnostic indicator / meter should be provided at site for maintenance and repair work.</p> <p>i. Repeater hang time: The bidder should describe in detail the use of repeater hang time in operation of their proposed system. The description should focus on how the proposed system will maximize the efficient use of the trunking channels and what flexibility the user has in changing hang time.</p> <p>j. In case of failure of site controller the repeater should first revert to fail soft trunked mode and then to conventional mode.</p> <p>k. Repeater channel should be capable to configure for conventional operation.</p> <p>l. Whenever new control channel is assigned as a control channel, field</p>

	radios should acquire that as control channel automatically. Repeater should meet or exceed the following specifications.
7.2.1	<p>General:</p> <ul style="list-style-type: none"> a. AC Supply Voltage: 220 V AC, 50 Hz \pm10% b. DC Supply Voltage: Bidder to mention the operating DC voltage c. Frequency Generation: Synthesized d. Temperature Range: -30⁰C to + 60⁰ C e. Channel Spacing: 12.5 KHz for APCO 25 (12.5 or 25 KHz selectable for conventional operation) f. Vocoder: AMBE+2 or better
7.2.2	<p>Transmitter:</p> <ul style="list-style-type: none"> a. Frequency: 851-870 MHz b. Modulation: APCO 25 Phase II standard, Bidder to specify. c. RF Power Output: 100 W programmable d. Duty Cycle: 100%, 24 x 7 basis e. RF Output Impedance: 50 ohms f. Frequency Stability: \pm 1 PPM or better at – 30⁰C to +60⁰ C g. Adjacent Channel Power: -60dBc or better h. Audio Distortion: < 3% at 1 KHz, at 3 KHz deviation (clear mode)
7.2.3	<p>Receiver:</p> <ul style="list-style-type: none"> a. Frequency Range: 806-825 MHz b. Frequency Stability: \pm 1 PPM from-30⁰C to +55⁰C c. Channel Spacing: 12.5 KHz for APCO25 (12.5 or 25 KHz selectable for conventional operation) d. Sensitivity: - 117 dBm or better at 5% BER Static e. Frequency Generation: Synthesized f. Modulation: APCO 25 Phase II standard g. Adjacent Channel Selectivity: 75 dB or better h. Inter Modulation: 80 dB or better i. Spurious and Image: better than 100 dB j. RF input impedance: 50 ohms k. Audio Distortion: <3% at 1 KHz
7.3	<p>Repeater Stations Tower/Mast:</p> <ul style="list-style-type: none"> a. Required number of tower/mast of suitable height and weight for installation of antenna system at all repeater sites will be the responsibility of finally selected bidder. b. The height of the towers should be selected in such a way that it provides RF coverage all over Delhi for smooth communication. c. The prospective bidders shall mention the height of the towers/ masts considered while designing the network for all over Delhi coverage. d. All towers, nuts & bolts etc shall comply with the requirements of Standard EIA/TIAand India Standard (IS). In case of anyconflict between the two standards, the Indian Standards shall prevail. e. The towers shall be self-supporting galvanised steel structure. f. Type of tower: Appropriate height monopole/three/four legged light weight Tower (Antenna mount Platform, cable Tray, Safety climbing Ladder, etc) Hot Dip Galvanized roof top tower with tower load as per tender requirement. IS: 8500 – Structure micro alloyed (ordinary and high strength quality), IS: 2062 – Structured steel (fusion welding quality). g. Ladder and platform: From bottom to top of the tower with guard with resting platform at 15m and working platform at 30m etc. h. Lightning Arrester:Advanced protection system (Early Steamer Emission). i. Tower Earth: All legs of the tower shall be separately earthed with 70 Sq

	<p>mm multistrand copper wire. Earthing shall be provided with suitable earth enhancing compound.</p> <ul style="list-style-type: none"> j. The towers shall be equipped with Aviation Warning Lights in conformity with the relevant requirements of ICAO. All proposed tower facilities shall be marked and lighted as per Indian Aviation Administration rules and requirements. k. Foundation and structural design diagram: The bidder should inspect the building/sites and design the foundation taking into consideration of the building parameters and propose the tower. l. Structural design & foundation design details for towers to be submitted. m. During construction of the Tower foundation, the Contractor shall be responsible for the safety of the site and the structures nearby. The earthing design shall be as per IS 3043 or better standard for radio Towers. n. A means of preventing unauthorized access onto the ladder shall be provided. o. The Tower/ Mast should be able to withstand at least upto 150 km/hour wind speed of the concerned Seismic Zone as currently defined by the Indian Meteorological Department (whichever is higher) while supporting the maximum number of antennae plus four additional antennae required of the same type/size, located at full height. p. The tower loading must take into account the wind load, seismic conditions (Zone IV), antenna loads, all tower accessories and at least 100% safety margin against structural failure for the actual anticipated configuration.
7.4	<p>Repeater Antenna System:</p> <ul style="list-style-type: none"> a. Repeater site will require high gain Omni/ directional antenna, for transmit, and receive and one wide band for both T_x/R_x as standby. Bidder to assess the requirement for Omni/ Directional antenna as per RF coverage requirement at a particular site. b. The antenna systems should be connected via continuous 1x5/8" LDF (or better) cable for Tx/ Rx with proper connectors and grounding kit to the combiner / receiver multicoupler. Cable installation should be as per standard telecom procedure with minimum signal loss. All antenna systems should be installed with proper lightning protection. Site must have adequate grounding system; reputed make lightning / surge protection devices should be used in the antenna/ power supply systems. c. The antenna should be able to withstand at least upto 150 km/hour wind speed. d. The bidder should specify power handling capacity of antenna. e. The bidder should provide specification sheets of the antennas, receiver, multi-couplers, transmitter combiners, and any other equipment necessary to assure a complete system. f. Gain of antenna should be selected in such a way that it provides RF coverage all over Delhi for smooth communication. g. The outdoor antenna shall be robust construction utilizing corrosion resistant material. The feeder cable connections shall be weatherproof and fully sealed. h. Inline RF Power Monitoring shall be provided for Tx Antennas. i. Transmitter Combiner: <ul style="list-style-type: none"> i. The design of the transmitter combiner should be such that it caters to redundancy and maintenance. ii. Combiner should be of auto tune type field tunable. iii. The transmitter combiner should be expandable and should meet the following minimum specifications: <ul style="list-style-type: none"> A. Channel Separations: 150 KHz or better

	<p>B. Isolation Tx- Tx: 60 dB or better C. Insertion Loss (5 Channel) : 3.6 dB or less D. Operating Temperature: -30 to 60°C</p> <p>j. Receiver Multicoupler : i. The receiver multicoupler should be expandable type with all unused ports terminated with 50 ohms. ii. A band pass cavity filter should be supplied with the multicoupler to reject out of band RF signals.</p> <p>k. Tower top receiver pre-amplifier of minimum 20 dB gain should be supplied at each repeater site to improve radio coverage.</p>
7.5	<p>Redundant 7 GHz Microwave link to Control Inter Site Link (1+1 Microwave):</p> <p>a. All the repeater sites should be connected to TSCSE through Microwave Link. Repeater and control/switching equipment linked by suitable capacity Microwave link in ring topology along with required hardware (e.g. mux/ demux) and having hardware redundancy i.e. 1+1 hot standby configuration. In case of Microwave link failure the system should work in Wide area on the existing Cyber Highway link (MPLS/VPN Network) of Delhi Police.</p> <p>b. Frequency Band : 07 GHz</p> <p>c. Power Output : Bidder to specify</p> <p>d. Antenna Gain : Bidder to specify</p> <p>e. 230 V AC operations.</p> <p>f. Interfacing ports – IP / E-1.</p> <p>g. Link management terminal with license software</p>
8	<p>GENERAL RADIO FEATURES:</p> <p>a. The activation of the transmit control (PTT) should initiate a request for a channel via the signaling channel. The request should include the talkgroup to which the radio set is designated. In the event that the request is not acknowledged by the control channel the unit should automatically attempt re-access until the access is accomplished; or if no RF voice channel is available an indication of busy should be presented at the subscriber radio and automatically retry call (Call prompt) when RF voice channel is available.</p> <p>b. The subscriber radios should be microprocessor controlled multi channel (minimum100) synthesized type of radio having minimum 30 numbers Dynamic Regrouping Talk groups and 25 numbers Conventional/ Talk around talk groups capability.</p> <p>c. The subscriber radios should be able to perform the following tasks: i. Process call request in response to activation of the PTT switch. ii. Encode and transmit inbound service request to system. iii. Automatic switching of RF channel. iv. Generate alarm alert tones.</p> <p>d. The subscriber radios should include base stations, mobile/static radios and portable (handheld radios). The radios should include full keypad type. It should support but not limited to following features: i. To initiate a conversation with any subscriber radios operating in the same or multiple site system, on a one to one basis (selective call), regardless of the current group affiliation and locations of both parties. To selectively alert any subscriber radio operating in the same multisite system, regardless of the current talkgroup affiliations and location of both parties. ii. To initiate telephone interconnect call to any landline parties by keying in the land line telephone number via the radio keypad. iii. To initiate short data text messaging for any subscriber radio. iv. Radio should support Digital and AES 256 encrypted voice call.</p>

	<ul style="list-style-type: none"> v. Radio should support Data call.
	<ul style="list-style-type: none"> e. All subscriber radios should come with alpha numeric display. Following information should be initiated on the display depending on the radio's mode of operation: <ul style="list-style-type: none"> i. Min. 12 characters should be displayed regarding called/caller radio ID/ alias. ii. The talkgroup ID/alias during a talkgroup call. iii. Call type with continuous caller ID. iv. Battery level indicator, Tx/ Rx indicator v. Received Signal Strength Indicator (RSSI) vi. Out of contact indicator vii. The numbers of the landline subscriber during a telephone interconnect call by the radio user.
	f. All subscriber radios should be capable of being software programmed (PC Programmable), via radio programming software.
	g. Over the air programming (OTAP) facility should be available to programme the radio remotely.
	h. Radio should support Over the Air Re-keying (OTAR) for encryption management.
	i. Offered radios should be of open standard to operate in other manufacturers Digital Open Standard APCO 25 Phase-II System with GPS and AES 256 encryption facility.
	j. The user/mobile terminals employed in the network shall be of a type/model certified by an internationally accredited agency with respect to ITU/ETSI/TEC standards or any other international standard as may be approved by the Government. They should carry a marking specifying their compliance with such standards.
	k. All the specifications will be tested with the help of test equipments provided by the vendor however in case field/lab test of any specification is not possible then OEM certification should be provided to verify the same.
8.1	Digital Open Standard APCO 25 Phase-II, Static Radio:
	All Static Radios should have:
	a. Minimum 6dB gain Static Antenna with installation clamp, surge and lightning protectors, 30 meters standard low loss RF LDF cables, patch cables and standard connectors etc. for static locations.
	b. Full alphanumeric keypad
	c. Full color LCD/TFT display with 3 lines or text, 12 characters or better.
	d. Microphone with keypad
	e. Night mode for low intensity display
	f. Suitable SMPS Power Supply cum battery charger
	g. 5 Watt or better Internal / provision for External speaker
	h. 4 meters or above Battery cable with fuse and reverse polarity protection
	i. Static operation mounting brackets, screws, clamps & installation kit
	j. Digital voice and data Operation
	k. Supply Voltage : 12 V DC Nominal
	l. Frequency Generation : Synthesize
	m. Temperature Range : -30 ^o C to 60 ^o C
	n. Ruggedness: Water & Dust IP56 or better and Vibration resistant MIL standard 810 C,D,E,F&G.
	o. Head phone for hands free operation
	p. Protection for reverse polarity and final PA Stage impedance mismatch
8.1.1	Transmitter:
	a. Frequency : 800 MHz (806 – 825 MHz)

	<ul style="list-style-type: none"> b. RF Power minimum 25 W Programmable power control c. Channel Spacing : 12.5 KHz for APCO 25 (12.5 or 25 KHz selectable for conventional operation) d. Frequency Stability: ± 1.5 PPM or better at -30°C to 60°C e. Output Impedance – 50 Ohms f. Audio Distortion - < 3% at 1 KHz, at 3 KHz deviation (clear mode) g. Modulation : APCO 25 Phase-II Standard h. VSWR: Better than 1.5
8.1.2	<p>Receiver:</p> <ul style="list-style-type: none"> a. Frequency : 800 MHz. (851- 870MHz) b. Sensitivity : -116 dBm at 5% BER or better c. Frequency Stability: ± 1.5 PPM or better at -30°C to 60°C d. Channel spacing – 12.5 KHz for APCO 25 Phase II and 12.5/25 KHz for conventional, if provided. e. Adjacent Channel Rejection Selectivity : 60 dB or better f. Spurious and Image: better than 75 dB g. Audio output 5 Watt or better h. Audio Distortion – Less than 3% at 1 KHz in conventional mode, if provided
8.1.3	<p>Other features:</p> <ul style="list-style-type: none"> a. APCO 25 Conventional / Talk around (Optional) b. Group scanning with priority selection c. Status Messaging d. Late entry e. Remote enable/disable facility f. Display with backlight – Alphanumeric g. Text Message using keypad (Minimum 100 character) h. Terminal to terminal file transfer operation i. Call history j. Roaming Feature within RF coverage area of the sites. k. Auto retry l. Port for headset attachment and data communication, radio programming m. Audio Visual Alerts (Bidder should Specify)
8.2	<p>Digital Open Standard APCO 25 Phase-II, Mobile Radio:</p> <p>All Mobile Radios should have</p> <ul style="list-style-type: none"> a. Minimum 3dB gain mobile RF and GPS Antenna with installation clamp, 5 meters or above standard RF co-axial cable with standard connectors for PCR vans/ other police vehicles. b. Full alphanumeric keypad c. Microphone d. Internal / provision for External speaker e. 4 meters or above Battery cable with fuse and reverse polarity protection f. Digital voice and data Operation g. Vehicle operation mounting brackets & installation kit. h. Supply Voltage : 12 V DC Nominal i. Frequency Generation : Synthesize j. Temperature Range : -30°C to 60°C k. Ruggedness – Water & Dust IP56 or better and Vibration resistant MIL standard 810 C,D,E,F&G l. Protection for reverse polarity and final PA Stage impedance mismatch

8.2.1	Transmitter
	a. Frequency : 800 MHz (806 – 825 MHz)
	b. RF Power minimum 25 W Programmable power control
	c. Channel Spacing : 12.5 KHz for APCO 25 (12.5 or 25 KHz selectable for conventional operation)
	d. Frequency Stability: ± 1.5 PPM or better at -30°C to 60°C
	e. Modulation : APCO 25 Phase-II Standard
	f. VSWR-Better than 1.5
	g. Output Impedance – 50 Ohms
	h. Audio Distortion - < 3% at 1 KHz, at 3 KHz deviation (clear mode)
8.2.2	Receiver :
	a. Frequency : 800 MHz. (851- 870MHz)
	b. Sensitivity : 116 dBm at 5% BER or better
	c. Frequency Stability: ± 1.5 PPM or better at -30°C to 60°C
	d. Channel spacing: 12.5 KHz for APCO 25 Phase II and 12.5/25 KHz for conventional, if provided.
	e. Adjacent Channel Rejection Selectivity : 60 dB or better
	f. Spurious and Image: better than 75 dB
	g. Audio output: 5 Watt or better
	h. Audio Distortion: Less than 3% at 1 KHz in conventional mode, if provided.
8.2.3	Other features:
	a. APCO 25 Conventional / Talk around (Optional)
	b. Group Call (Digital & Encrypted)
	c. Group scanning with priority selection
	d. Status Messaging
	e. Late entry
	f. Remote enable/disable facility
	g. Display with backlight – Alphanumeric
	h. Text Message using keypad (Minimum 100 character)
	i. Terminal to terminal file transfer operation
	j. Call history
	k. Roaming Feature within RF coverage area of the sites.
	l. Auto retry
	m. Port for headset attachment and data communication, radio programming
n. Audio Visual Alerts (Bidder should Specify)	
8.3	Digital Open Standard APCO 25 Phase-II, Portable Radio:
	All Hand Held Portable Radios should have
	a. Suitable Helical Antenna
	b. Full colour LCD or TFT display with 3 lines of text
	c. Full alphanumeric keypad
	d. Three Li-ion minimum 2100 mAh or better batteries
	e. LED light notification
	f. Rapid single unit battery chargers for 230 Volt AC operations.
	g. Carrying Case / Belt Clip
	h. Temperature Range : -30°C to 60°C
	i. Ruggedness – Water, Dust and Vibration resistant MIL standard 810

	C,D,E,F,G
	j. Ingress Protection IP 67 (Battery and Radio)
	k. Frequency Generation : Synthesize
8.3.1	Transmitter :
	a. Frequency : 800 MHz (806 – 825 MHz)
	b. RF Power minimum 3 W Programmable power control
	c. Channel Spacing : 12.5 KHz for APCO 25 Phase II (12.5 or 25 KHz selectable for conventional operation)
	d. Frequency Stability: ± 1.5 PPM or better at -30°C to 60°C
	e. Output Impedance – 50 Ohms
	f. Modulation : APCO 25 Phase-II Standard
	g. Audio Distortion - < 3% at 1 KHz, at 3 KHz deviation (clear mode)
8.3.2	Receiver :
	a. Frequency : 800 MHz (851- 870MHz)
	b. Sensitivity : -116 dBm at 5% BER or better
	c. Frequency Stability: ± 1.5 PPM or better at -30°C to 60°C
	d. Channel spacing – 12.5 KHz for APCO 25 Phase II and 12.5/25 KHz for conventional, if provided.
	e. Adjacent Channel Rejection Selectivity : 60 dB or better
	f. Spurious and Image: better than 75 dB
	g. Audio output 500 milliwatt or better
	h. Audio Distortion – Less than 3% at 1 KHz in conventional mode, if provided
8.3.3	Other features:
	a. APCO 25 Conventional / Talk around (Optional).
	b. Group scanning with priority selection
	c. Status Messaging
	d. Late entry
	e. Remote enable/disable facility
	f. Display with backlight – Alphanumeric.
	g. Text Message using keypad (Minimum 100 character)
	h. Terminal to terminal file transfer operation
	i. Call history
	j. Roaming Feature within RF coverage area of the sites.
	k. Auto retry
	l. Man Down
	m. Ports for hands free kit, headset attachment and data communication, radio programming.
	n. Audio Visual Alerts (Bidder should Specify)
9	DIGITAL VEHICULAR REPEATER SYSTEM (FOR COVERAGE ENHANCEMENT):
9.1	GENERAL
	a. Frequency Band: 800 MHz
	b. Channel spacing: 12.5 KHz for APCO P25 Phase II

	c. Full duplex and simplex operation
	d. In-Band or Cross-Band configurations
	e. Power supply: Bidder to quote
	f. Number of channels: Minimum 100
	g. Operating temperature: -10°C to +60°C
	h. Antenna impedance: 50 Ohm
	i. Duty cycle: Continuous
9.1.1	TRANSMITTER:
	a. Power Output: 10 W or better (programmable per channel from 1W to 10W)
	b. Max Spurious Output: -20dBm
	c. Frequency Stability: +/- 1.5ppm
	d. Audio Distortion: <2%
9.1.2	RECEIVER:
	a. Receiver Sensitivity: -115 dBm or better
	b. Frequency Stability: +/- 1.5 dBm
	c. Selectivity: 12.5 / 25 kHz 60 dB / 75 dB
	d. Intermodulation: 70 dB
	e. Audio Output (Repeater Detect Audio): 600 mV RMS nominal, flat response
	f. Audio Distortion: <2% or better
9.1.3	POWER SUPPLY & BACKUP
	a. Backup: 15 hours or above
	b. Power supply: Suitable charger and sealed maintenance free battery for the requirement
9.1.4	ANTENNA
	a. Type: Multiple dipole antennas capable to adjust the dipoles
	b. Gain: 9dB Gain or better
	c. Antenna Impedance: 50 Ohm
	d. V.S.W.R.: Less than 1.5
	e. Accessories: Suitable accessories for fixing etc.
9.1.5	CABLE
	a. Cable type: RF Low loss Cable – 100 Mtrs in one length & suitable Connectors both ends at less than 5dB loss or better for 100 Mtrs at 800MHz band and 50 ohm impedance and suitable short cable.
10	RADIO PROGRAMMING KIT:
	a. The bidder should include in his proposal all necessary radio programming and Encryption Key Loading kits needed for the operation of the Digital Open Standard APCO 25 Phase II Trunked radio system including radio programming licensed software, interfacing hardware, laptop computer programmer and required radio terminal cables for: <ul style="list-style-type: none"> i. Base Stations, ii. Static/ Mobiles iii. Portables

	<ul style="list-style-type: none"> iv. Inter site Link Equipment b. Any other kit required
11	<p>KEY MANAGEMENT HARDWARE AND SOFTWARE:</p> <ul style="list-style-type: none"> a. Over the Air Rekeying (OTAR) hardware and software for Encryption with two clients. b. Over the Air Programming (OTAP) hardware and software with two clients: Bidder should explain in detail how OTAP/OTAR will interface with offered system and working of OTAP/OTAR. c. Key loader with interface cables for loading the encryption keys manually.
12	<p>POWER SUPPLY:</p> <p>Commensurate capacity N+N redundant online UPS's with phase changeover switch for UPS and direct mains, of reputed make such as TATA Libert, APC etc with maintenance free battery bank for 8 hours backup for all the repeater sites and central police control room. The proposed UPSs should be very robust and reliable to provide uninterrupted power supply round the clock having following minimum features:</p> <ul style="list-style-type: none"> a. Input Voltage Range : 160 VAC to 280 VAC b. Input Frequency Range: 47 Hz to 53 Hz c. Output Voltage : 230 VAC d. Output waveform: Pure Sine Wave e. Voltage regulation : $\pm 1\%$ f. Efficiency : > 90 % g. Power factor : 0.8 or better h. Control Panel Display : Yes i. Alarm (in case of failure) : Yes j. Online monitoring : Yes k. Design modular : Yes
13	<p>TEMPERATURE MAINTENANCE SYSTEM:</p> <p>Temperature Maintenance System of reputed/ standardized make (O General, Daikin, Hitachi, Mitsubishi etc.) with all accessories, and having at least five star ratings for all repeater stations and Central Control Switch site.</p> <ul style="list-style-type: none"> a. Sufficient Weather Control System should be provided at each base station with automatic change over every 6 hours. b. Sufficient Weather Control System should be provided at APCO switching centre with automatic change over every 6 hours. c. Weather Control System should be unmanned, so machine should be rugged, reliable, maintenance free and designed for long life. d. The proposed temperature maintenance system should be able to provide sufficient cooling to the system round the clock at all locations as per system design parameters.
14	<p>TEST EQUIPMENTS /TOOLS:</p> <p>License shall supply all tools, test instruments and other accessories to the testing party of Licensor and /or TEC for conducting tests, if it so desires, prior to commissioning of the service or at any time during the currency of the License. In the interest of security, suitable monitoring equipment as may be prescribed by the licensor for each type of system used will be provided by the Licensee at his own cost for monitoring, as and when required. The bidder should include in his bid essential test and measuring instruments & tools for proper upkeep, calibration and maintenance of the system & radios as mentioned below:</p>

	<ul style="list-style-type: none"> a. Suitable Radio Communication Test Set having all technical features of Base Station, mobile, static, handheld sets and accessories etc. for APCO P25 Phase II Trunked radio system with auto test and auto alignment facility. b. Through Line Power meter etc. c. Any other item essential for field testing.
15	MISCELLANEOUS:
5.1	<p>Critical Spares:</p> <ul style="list-style-type: none"> a. The bidder shall enclose a list of critical spares for TMCSE, Repeaters, digital voice logger, inter site link equipments, dispatcher consoles with price to ensure high availability of the network during the warranty period. b. The bidder shall explain the criticality of these spares.
5.2	<p>Earthing Policy:</p> <ul style="list-style-type: none"> a. Main earth shall be provided at UPS Room. Main Earth shall be terminated by the successful bidder at a copper strip. b. The Clean Earthing arrangements for Telecom Equipment's must be protected using a mesh of copper "earth" strips of appropriate cross-sectional dimensions, forming a local Clean Earth Bus. c. An earthing system (Main earth and clean earth) shall be designed to assure personnel safety and protection of installations against damage. It shall also serve as a common voltage reference and to contribute to the mitigation of disturbances. d. The earthing system shall generally meet the requirements of IEEE 1100, NFPA 780, IEC 1024. e. The earth resistance at any point on the Clean Earth shall be below 0.5 ohm, and that for the Main Earth shall not exceed 2.0 ohm at any location and under any soil and/or climatic condition. f. All metal work and metallic items (including chassis) shall be earthed to the Main Earth to ensure the safety of personnel. g. The earthing connection shall be inspected periodically at intervals frequent enough to ensure that the earth connection meets all the requirements.
5.3	<p>Transient Protection:</p> <ul style="list-style-type: none"> a. Despite the provision of earthing as specified above, failure of communication equipment do occur on account of finite earth resistance during occurrence of high voltage transients. b. An effective transient protection system must protect the communication equipments from transients of the following specifications as a minimum: MIL-STD-704A or equivalent.
16.	<p>ENGINEERING SERVICES:</p> <ul style="list-style-type: none"> a. The finally selected Bidder shall design, supply, install, test and commission the proposed Digital Trunk Radio System. b. The Bidder shall furnish complete technical details with all calculations for engineering, planning and dimensioning of the system/network, concerned relevant literature, drawings, and installation materials regarding the applicable system. c. The successful bidder will be responsible for system performance including a guarantee of radio coverage, installation of base station sites and IP based Communication Dispatch centre equipment, microwave backbone,

	<p>optimization of the radio infrastructure, training of system users and maintenance personnel, and achieving satisfactory system performance.</p> <p>d. Acceptance tests of system components, software and equipment provided pursuant to this specification must be passed to the satisfaction of Delhi Police.</p> <p>e. Three years on site comprehensive warranty for all equipments (except consumables batteries which should have 2 years standard warranty) should be provided. The warranty period will begin from the date of acceptance of entire system by Delhi Police. During warranty period, the system components restoration time in case of failure should be less than 2 hours however the entire system should never fail.</p>
16.1	<p>Installation work Plan:</p> <p>a. The successful bidder should submit a preliminary installation work plan, installation test and procedures and installation schedule chart.</p> <p>b. The bidder should provide all technical details supported by technical documents, brochures etc. for system, system component, radios, other required peripherals and accessories.</p> <p>c. The bidder should then work together with Delhi Police to finalize the work plan 15 days prior to commencement of installation.</p>
16.2	<p>Site preparation:</p> <p>a. Delhi Police shall provide space at master site and all repeater sites with civil infrastructure and raw electrical supply.</p> <p>b. It shall be the responsibility of finally selected bidder to install all other infrastructure/equipments necessary for the smooth functioning of master site and repeater site.</p> <p>c. The bidder should submit all equipment/ Master site/ repeater site preparation plan including Antenna installation drawings, Tower & foundation drawings, RF cabling & electrical loading drawings, routing along with earthing plan involved for total requirements of the installation.</p>
16.3	<p>System Acceptance Test:</p> <p>a. On completion of the installation, the bidder should conduct a system acceptance test. The bidder should propose a detailed system acceptance test plan, which should be jointly reviewed and finalized by Delhi Police and the successful bidder.</p> <p>b. The bidder should provide the test equipment required during the system acceptance test period with model number and quantity of these equipments. The bidder should repair or replace at no additional cost to Delhi Police, should any of the proposed equipment is found faulty during the system acceptance test period.</p> <p>c. The bidder to provide the detailed testing methodology to be adopted alongwith the test booklet procedure.</p>
16.4	<p>All that is required but not mentioned in this document for successful and trouble free installation, commissioning, operation and maintenance of the system, the bidder should incorporate in his bid being a turnkey project. The bidder is at liberty to indicate additional features and capabilities of the offered system.</p>
17.	<p>Training: The Bidder should provide training programmes for the purchaser's Engineers, Technicians and system users.</p> <p>Part I :- In first part Delhi Police will depute its twenty (20) engineers /</p>

	<p>Technicians for training at the works of the manufacturers factory premises for the period of Four (04) Weeks. In case of works out side India, all the expenses including fare, lodging and boarding should be borne by the supplier. The bidder should quote it separately. The Team of Delhi Police Officers should also be part of system acceptance at factory level.</p>
	<p>Part II: - In second part the supplier should provide Four (04) Weeks training to the 50 engineers/Technician of Delhi Police at the premises of Purchaser at no extra cost. Both training part should cover the following aspects:</p> <ul style="list-style-type: none"> g. Description of all functional assemblies of the system, including controls, indicators and monitoring system. h. Line up procedures for the system and adjustment of operating parameters and other Operation and maintenance procedures. i. Practical replacement procedures/practices for major assemblies including RF units. To the experienced technicians of police in the complete trouble shooting and maintenance of the equipment, both at the board replacement and preferably at the board repair level.
	<p>Part III :- User Operational Training:</p> <ul style="list-style-type: none"> c. This training programme will be conducted at the user's location and will be structured so as to train up to 25 of the purchaser's supervisory and training personnel who will in turn train individual operators. d. The engineers and technicians should be taught the functionality of each equipment in the system and to identify common hardware/software failures.

CHAPTER – 5

PROFORMA FOR PRICE SCHEDULE (Enclose with commercial Proposal)

Tender No. V/48/11/APCO PH-II/DP

Date of opening.....

Time.....Hrs.

We-----hereby certify that we are established manufacturers/authorized representatives of M/s-----with factories at -----which are fitted with modern equipment and where production methods, quality control and testing of all materials manufactured or used by us are open to inspection by the representative of the Purchaser. We hereby offer our prices for establishment of new latest APCO Phase-II system at PHQ as per the Schedule of Requirement, Technical Specifications and Terms & Conditions of the Tender:

The price break-up of all the items as per Bill of Quantity (Chapter-3) and Comprehensive Annual Maintenance Contract rates for seven years are to be filled-up properly in the Excel Sheet attached with CPP Portal for price detailed bidding.

It is hereby certified that we have understood all the terms and conditions specified in the tender document and are thoroughly aware of the nature of job required to be done and stores/items to be supplied. We agree to abide by all the tender terms and conditions.

We hereby offer to carry out the job and (or) supply the stores/items detailed above or such portion(s) thereof as you specify in the notification of award.

A Standard EXCEL Sheet of Price Schedule format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the EXCEL Sheet of Price Schedule file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the Standard EXCEL Sheet of Price Schedule format file is found to be modified by the bidder, the bid will be rejected.

(Signature and seal of Bidder)

Dated:.....

CHAPTER-6

Contract Form

CONTRACT No. -----

This Contract made on the ----- day of -----, (hereinafter referred to as the “**Contract Date**”) between the President of India acting through the Deputy Commissioner of Police, Operations & Communication, Delhi Police, Integrated Complex, FC-50, Delhi-110088 (hereinafter referred to as the “**Purchaser**” which term will include its representatives, successors and permitted assignees) of the one part and M/s -----, a Company incorporated under the Companies Act, 1956 and having its office at ----- (hereinafter referred to as the “**Supplier**” which term will include its representatives, successors and permitted assignees) of the other part.

WHEREAS

- A. The Purchaser is desirous to procure ----- (hereinafter referred to as the “**Stores**”) for Delhi Police and had sought a commercial offer for the supply of the System.
- B. With respect to the enquiry issued by the Purchaser -----, the Supplier had submitted its Commercial Bid dated -----
- C. The Purchaser has accepted the Supplier’s Commercial offer read with the clarifications/confirmation (if any) submitted by the Supplier vide letter ----- for the supply of the Stores and associated services at a total cost of Indian Rs.-----/- (Indian Rupees -----only).

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, the parties agree as follows:

- 1. **DEFINITIONS OF TERMS:** In this Contract, capitalized words will have the same meaning as respectively assigned to them in the conditions of Contract herein.
- 2. **CONTRACT DOCUMENTS:** The following documents, (each a “**Contract Document**” and collectively, the “**Contract Documents**”) are hereby expressly incorporated into this Contract and shall form and be read and construed as part of this Contract viz: -

- Exhibit-A: Tender enquiry No.----- dated -----
- Exhibit-B: Suppliers Technical offer dated-----
- Exhibit-C: Supplier’s commercial offer dated -----
- Exhibit-D: Supplier’s written clarification and confirmation letter dated ----- (if any)
- Exhibit-E: Purchaser’s Letter of Intent No-----/T(W)/DCP/Ops. & Comn dated-----
- Exhibit-F: Supplier’s Letter of acceptance dated-----
- Exhibit-G: Copy of Contract Performance Security No..... dated

3. **Order of Precedence:**In case of conflict between the terms in this Contract and the Contract Documents, the terms of this Contract shall prevail. In case of conflict between the terms in any two Contract Documents, the Contract Document mentioned later in the above list shall prevail.
4. **Scope of Work:** The **Scope of Work** shall include design, supply, delivery at site, unloading, any other services associated with the delivery of equipment and materials, installation, commissioning, integration, software optimization, providing warranty/ post warranty services for the entire latest APCO Phase-II system and any other related accessories/services for the complete setting up of the proposed system and all type of radios (Static/Mobile/Hand Held) as per the Schedule of Requirements (**Chapter-3**) and Technical Specifications (**Chapter-4**). The successful bidder shall assume full responsibility of the complete System for its entire life cycle (10 years). **The related licenses for import of APCO Phase-II System and wireless sets shall be the responsibility of the bidder from all government organizations. However Delhi Police will complete all relevant formalities for obtaining licenses.**
5. **Contract Price**
The prices for supply of the Stores and other associated services is detailed specifically in the Supplier's Commercial offer (Exhibit-B) read with Supplier's written clarification and confirmation letter dated -----(Exhibit-C). The contract price is Indian Rs.-----/- (Indian Rupees ----- only). This price excludes existing GST as applicable and any new Government levies/taxes imposed in India after the Contract Date, which the Purchaser shall bear and pay at actuals.
6. CONTRACT PERFORMANCE BANK GUARANTEE/PERFORMANCE SECURITY
7. CAMC PERFORMANCE BANK GUARANTEE/CAMC PERFORMANCE SECURITY
8. PAYMENT SCHEDULE
9. PACKING, FORWARDING & SHIPMENT
10. DELIVERY, INSTALLATION & COMMISSIONING
11. INSPECTION AND TESTS
12. NEW TECHNOLOGY/ UPGRADE
13. SYSTEM SECURITY
14. CHANGE ORDER
15. COMPLIANCE WITH LEGAL PROVISIONS
16. INSURANCE
17. INSPECTION AND TESTS
18. GUARANTEE/WARRANTY
19. POST-WARRANTY SERVICES AND MAINTENANCE
20. TRAINING
21. SPARE PARTS
22. USE OF CONTRACT DOCUMENT & INFORMATION
23. SITE PREPARATION
24. RESPONSIBILITY OF COMPLETION & SOFTWARE OPTIMIZATION
25. DELAY IN THE SUPPLIER'S PERFORMANCE
26. LIQUIDATED DAMAGES
27. FORCE MAJEURE
28. PATENT INDEMNIFICATION
29. WAIVER
30. ASSIGNABILITY
31. SEVERABILITY
32. GOVERNING LAW

- 33. TERMINATION FOR DEFAULT
- 34. TERMINATION FOR INSOLVENCY
- 35. TERMINATION FOR CONVENIENCE
- 36. RESOLUTION OF DISPUTES
(The clauses 6 to 36 shall be according to Chapter 2: Conditions of Contract of this Tender)
- 37. **ENTIRE CONTRACT:** This Contract including the Contract Documents constitute the final expression of agreement between the parties and supersedes all previous agreements and understandings, whether written or oral, relating to the Contract. This Contract may not be altered, amended, or modified except in writing, signed by the duly authorized representatives of both parties.

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be executed by their duly authorized representatives as of the last day and year written below:

Signed by:	Signed by:
Name:	Name:
Title:	Title:
Date:	Date:
For and on behalf of The President of India	For and on behalf of
Witness-1	Witness-1
Signature:	Signature:
Name:	Name:
Address:	Address:
Date:	Date:
Witness-2	Witness-2
Signature:	Signature:
Name:	Name:
Address:	Address:
Date:	Date:

CHAPTER - 7

OTHER STANDARD FORMS

ANNEXURE-T1

BIDDER PARTICULARS (Enclose with Technical Bid)

1. Name of the Bidder :
2. Address of the Bidder :
3. Name and address of members of JV :
4. Name and Address of the Manufacturer(s) :
5. Name & address of the person o whom all references shall be made regarding this tender enquiry. :

Telephone :
Fax :
E-mail :

Signature
Name
Designation
Address
Date & Company Seal

Witness:
Signature
Name
Address

BID FORM
(Enclose with Technical Bid)

Date: ___/___/___

The Deputy Commissioner of Police
Ops. & Communication, Delhi Police,
Integrated Complex, FC-50,
Shalimar Bagh, Delhi-110 088

Sir,

Having examined the Request for Proposal document dated _____
We, _____, offer to supply and deliver _____
(Name of the Firm)

(Description of Stores and Services)

in conformity with the said tender provisions for sums as may be ascertained in accordance with the Schedule of Prices provided in the Commercial Bid.

We undertake, if our bid is accepted, to complete delivery, installation and commissioning of the System as per the schedule specified in the Tender.

We further undertake that, if our bid is accepted, we will obtain the Guarantee from a Commercial Bank in a sum equivalent to 10% of the Contract value for the due Performance of the Contract as per **terms and conditions** of the Tender. Further, on completion of the 3 years warranty period, we will furnish the CAMC Performance Bank Guarantee/ CAMC Performance Security for Five percent (05%) of the total Contract Price valid for a period of 7 years and 6 months from the date of expiry of the warranty period.

We agree to abide by this bid for a period of **06 months** from the date fixed for bid opening and it shall remain binding upon us and may be accepted at any time before the expiration of that period. This bid together with your written acceptance thereof and your notification of award shall constitute a binding Contract between us.

We have noted the contents of Contract Form **(Chapter 6)** and agree to abide by terms and conditions in the same.

We understand that you are not bound to accept the lowest or any bid you may receive. We also understand that you have the right to vary the quantities and/or split the total order among the Bidders.

SIGNATURE AND SEAL OF BIDDER

GUARANTEE/WARRANTY & POST WARRANTY MAINTENANCE
(Enclose with Technical Bid)

To
The Deputy Commissioner of Police,
Ops. & Communication, Delhi Police,
Integrated Complex, FC-50,
Shalimar Bagh, Delhi-110 088.

Ref: Tender No.V/48/11/APCO PH-II/DP

We guarantee that everything to be supplied and fabricated by us hereunder shall be brand new, free from all encumbrances, defects and faults in material, workmanship and manufacturer and shall be of the highest grade and quality and consistent with the established and generally accepted standards for materials of the type ordered and shall be in full conformity with the specifications, drawings or samples, if any, and shall operate properly. We shall be fully responsible for its efficient and effective operation. This guarantee/warranty shall survive inspection of and payment for, and acceptance of the goods, but shall expire **36 (Thirty Six) months** after their acceptance by the Purchaser.

We also undertake to carry out the post warranty maintenance of the system for **07 (Seven) years** after the guarantee/warranty period of three years as per the terms and conditions laid down in the tender.

The obligations under the Guarantee/Warranty and Post Warranty maintenance expressed above shall include all costs relating to labour, repair, maintenance (preventive and unscheduled), and transport charges from site to manufacturers' works and back and for repair/adjustment or replacement at site of any part of the equipment/ item which under normal care and proper use and maintenance proves defective in design, material or workmanship or fails to operate effectively and efficiently or conform to the specifications and for which notice is promptly given by the Purchaser to the Supplier.

SIGNATURE OF THE WITNESS

SIGNATURE AND SEAL OF BIDDER

DATE _____

Note: In case the bidder is not the manufacturer himself, this undertaking towards the Guarantee/Warranty and Post Warranty Maintenance should be endorsed by the OEM(s).

Company details for eligibility criteria (Clause 12, Chapter-1)

(On applicant Company/leading company's Letterhead)

(Enclose with Technical bid)

To,

The Dy. Commissioner of Police,
Ops. & Communication, Delhi Police,
Integrated Complex, FC-50,
Shalimar Bagh, Delhi-110 088.

Sub: Global Tender for establishment new latest APCO Phase-II system in Delhi Police.

Dear Sir,

We would like to clearly state that we qualify for this work as our company/JV of companies meets all the eligibility criteria of the tender. The details are as under:

Eligibility Criterion		Details
1.	The Company/ JV/ companies/authorized distributors should either be Indian Company or have an Indian company as the leading partner.	Yes/No
2.	In case of JV, it can have a maximum of three members. In addition, total stake of Indian Co. in JV should be 51% or more with management control in JV in Indian Co's hand and with Indian Citizen.	Yes/No
3.	Bidder or OEM should have proven experience in setting up of latest APCO system/similar set of services nationally/ globally during the last 5 years having value of minimum Rs.50 crores in single project or Rs.35 crores separately in two projects or Rs.25 crores separately in three projects.	Yes/No
4.	In case of JV; each partnershould have proven experience in setting up of latest APCO system/similar set of services nationally/ globally independently during the last 5 years having value of minimum Rs.50 crores in single project or Rs.35 crores separately in two projects or Rs.25 crores separately in three projects.	Yes/No
5.	The OEM should own the intellectual properties rights for the software involved in the Project.	Yes/No

6.	The annual total turnover of the OEM/Bidder should not have been less than Rs.30 Crores on an average during the last consecutive three years	Three consecutive financial years (Rupees in Crore).		
		Year	Leading Company	JV/ of companies.
		2017-18		
		2016-17		
7.	In case of JV, the annual turnover of the leading company should not have less than Rs.20 Crores and other company should not have less than Rs.10 Crores on an average during the last three consecutive years. It is not applicable for PSUs of India.	Three consecutive financial years (Rupees in Crore).		
		Year	Leading Company	JV/ of companies.
		2017-18		
		2016-17		
8.	The bidder should have qualified technical staff in the following fields – i) Trunking system installation and configuration - (1 No. Engineering Graduate) ii) Network management and optimization - (1 No. Engineering Graduate) iii) Switching center configuration - (2 No. Certified Engineer/Diploma Holder) Microwave system installation and configuration- (2 No. Certified Engineer/Diploma Holder)	Yes/No		
		2017-18		
		2016-17		
		2015-16		
9.	The bidder should have qualified technical staff in the following fields - Trunking system installation and configuration, Network management and optimization, Switching center configuration, microwave system installation and configuration.	Yes/No		
10.	All the bidders participating in the tender must submit a scanned list of their owners, partners, etc. and a certificate to the effect that the firm is neither blacklisted by any Government Department nor any Criminal Case is registered against the firm or its owner or partners or directors anywhere in India.	Yes/No		
11.	The bidder should have a local office and APCO OEM authorized service center in Delhi/NCR or alternately the bidder shall give an undertaking for setting up the local office in Delhi within 15 days from the	Yes / Undertaking		

	date of provisional acceptance order.	
12.	The APCO OEM should have registered office established in India.	Yes/No
13.	The bidders should have their firm registered with all the respective GST Departments.	Yes/No
14.	Companies PAN, TAN and GSTIN details.	Yes/No
15.	Valid dealer possession license for the products quoted (APCO switch, base stations, Static, Mobile, Portables, Microwave radios).	Yes/No
16.	The radio system infrastructure (Base station & Switch) and Radios (Portable, Mobile and Static) and the NMS shall be of the same make from the same OEM (original equipment manufacturer).	Yes/No
17.	The bidder should submit an Authorization letter for authorizing the tender signing authority for bidding the tender.	Yes/No
18.	The bidder should not have suffered any financial loss for more than one year during the last three years, ending on the relevant date.	Yes/No

We understand that if the details given in support of claims made above are found to be untenable or unverifiable or both, our bid may be rejected without any reference to us.

Yours sincerely

(Signature, Name, designation, contact address and telephone number of the authorized signatory)

Seal

PROFORMA FOR GST CLEARANCE CERTIFICATE

(Enclose with Technical bid)

OFFICE OF THE GST DEPARTMENT,

No. _____

Dated _____

GST Clearance Certificate

Certified that M/s. _____

is a registered Company of this ward having Registration No. _____

The Company is assessed upto _____ and there are no dues pending against the said Company as on date.

This certificate is issued on the written request of the company, dated _____ for submission of tender purposes only.

This certificate is valid up _____

Signature & Seal of
GST OFFICER

WARD
DATE:

**BANK GUARANTEE
BID SECURITY**

To,
The Dy. Commissioner of Police,
Ops. & Communication, Delhi Police,
Integrated Complex, FC-50,
Shalimar Bagh, Delhi-110 088.

Whereas _____ (hereinafter called "the Bidder") for the supply of _____ vide Tender No. _____, KNOW ALL MEN by these presents that WE, _____ having our registered office at _____, (hereinafter called "the Bank") are bound by the DY. COMMISSIONER OF POLICE, COMMUNICATION, Integrated Complex, FC-50, Shalimar Bagh, Delhi-110088 (hereinafter called "the Purchaser") in the sum of Rs. _____ (in words) for the tender documents, for which payment will and truly to be made of the said Purchaser, the Bank binds itself, its successors and assigns by these present.

THE CONDITIONS of the obligation are:-

1. If the Bidder withdraws his bid during the period of bid validity specified by the Bidder on the Bid form or
2. If the Bidder, having been notified of the acceptance of his bid by the Purchaser during the period of bid validity i.e. Six (6) calendar months from the date of opening of the tender.
 - (a) **Fails or refuses to execute the Contract, if required; or**
 - (b) **Fails or refuses to furnish the Performance Security, in accordance with the instructions to Bidders.**
 - (c) **If at any stage any of the information/ declaration is found false.**

We undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without the purchaser having to substantiate its demand, provided that in its demand, the purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force of the Bid Document upto _____ and any demand in respect thereof should reach the Bank not later than the specified date.

Notwithstanding anything contained herein above, our Liability under this Guarantee shall not exceed Rs. _____ (in words). This Bank guarantee shall be valid till Forty Five (45) days beyond the Bid validity period of Six (6) months i.e. ___/___/___-.

We are liable to pay guarantee amount or part thereof under this bank guarantee only and only if you serve upon us a written claim or demand on or before _____.

Dated this _____ day of _____ 2018 _____ at

WITNESS

(Signature) _____

(Signature) _____

(Name) _____

NAME _____

(Banker's Rubber Stamp) _____

(Official address) _____

Attorney as per Power of Attorney _____

PROFORMA FOR CONTRACT/CCAMC PERFORMANCE BANK GUARANTEE

(To be stamped in accordance with Stamp Act)
(Enclose with Commercial Bid)

Bank Guarantee No _____
 Ref _____

Date _____

To,

The Dy. Commissioner of Police,
 Ops. & Communication, Delhi Police,
 Integrated Complex, FC-50,
 Shalimar Bagh, Delhi-110 088.

Dear Sir,

In consideration of the Deputy Commissioner of Police (Communication), Delhi Police, Delhi (hereinafter referred to as the 'Purchaser' which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assignees) having awarded to M/s _____ with its Registered/ Head Office at _____ (hereinafter referred to as the 'Contractor' which expression shall unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assignees), a Contract by issue of the Purchaser's letter of intent No. _____ dated __/__/____ entering into a formal contract to that effect with the Purchaser on _____ vide Agreement No. _____ (hereinafter referred to as the "Contract") and the Contractor having agreed to provide a Contract Performance Bank Guarantee for the faithful performance of the entire Contract equivalent to _____ * _____ Ten percent of the said value of the Contract to the Purchaser.

We _____ (Name & Address of the bank) having its Head office at _____ (hereinafter referred to as the 'Bank' which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assignees) do hereby guarantee and undertake to pay the Purchaser, on mere demand any and all moneys payable by the Contractor to the extent of Rs _____ * _____ as aforesaid at any time upto _____ (day/month/year) without any demur, reservation, contest, recourse or protest and/or without any reference to the Contractor. Any such demand made by the Purchaser on the Bank shall be conclusive and binding notwithstanding any difference between the Purchaser and the Contractor or any dispute pending before any court, Tribunal, Arbitrator or any other authority. The Bank undertakes not to revoke this guarantee during its currency without previous consent of the Purchaser and further agrees that the guarantee herein contained shall continue to be enforceable till the Purchaser discharges this guarantee.

The Purchaser shall have the fullest liberty without affecting in any way the liability of the bank under this guarantee, from time to time to extend the time for performance of the contract by the Contractor. The Purchaser shall have the fullest liberty, without affecting the guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractors, and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied in the Contract between the Purchaser and the Contractor or any other course or remedy or security available to the Purchaser. The bank shall not be relieved of its obligations under these presents by any exercise by the Purchaser of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Purchaser or any other indulgence shown by the Purchaser or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving the bank.

The Bank also agrees that the Purchaser at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee that the Purchaser may have in relation to the Contractor's liabilities. We undertake to pay to the Government any amount so demanded by the Government, notwithstanding.

- a) any dispute or difference between the Government or the Contractor or any other person or between the Contractor or any person or any suit or proceeding pending before any court or tribunal or arbitration relating thereto; or
- b) the invalidity, irregularity or un-enforceability of the contract; or
- c) in any other circumstances which might otherwise constitute discharge of this Guarantee, including any act of omission or commission on the part of the Government to enforce the obligations by the Contractors or any other person for any reason whatsoever.

We, the Bank further agree that the guarantee herein contained shall be continued on and remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till the Purchaser, certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee.

We _____ hereby agree and undertake that any claim which

(indicate the name of the bank)

the Bank may have against the Contractor shall be subject and subordinate to the prior payment and performance in full of all the obligations of the Bank hereunder and the Bank will not without prior written consent of the Government exercise any legal rights or remedies of any kind in respect of any such payment or performance so long as the obligations of the Bank hereunder remain owing and outstanding, regardless of the insolvency, liquidation or bankruptcy of the Contractor or otherwise howsoever. We will not counter claim or set off against its liabilities to the Government hereunder any sum outstanding to the credit of the Government with it.

Notwithstanding anything contained herein above our liability under this guarantee is limited to total amount of Rs _____*_____ and it shall remain in force upto and including _____**_____ and shall be extended from time to time for such further period as desired by M/s _____ on whose behalf this guarantee has been given.

Dated this _____ day of _____ 2018 _____ at

WITNESS

(Signature) _____

(Signature) _____

(Name) _____

NAME _____

(Banker's Rubber Stamp) _____

(Official address) _____

Attorney as per Power of Attorney _____

* This sum shall be Ten Percent (10%) of the Contract Price.

** The date will be **03(three) years and six months from the date of award of the contract**. In case of Bank guarantee issued by a Foreign Bank, the same shall be confirmed by any Scheduled Bank in India.

TENDER ACCEPTANCE LETTER
(To be given on Company Letter Head)

(Enclose with Technical Bid)

Date: _____

To,

The Dy. Commissioner of Police,
Ops. & Communication, Delhi Police,
Integrated Complex, FC-50,
Shalimar Bagh, Delhi-110 088.

Sub: Acceptance of Terms & Conditions of Tender.

Tender Reference No: _____

Name of Tender / Work: -

Tender for establishment of latest new APCO Phase-II System in Delhi Police

Dear Sir,

1. I/ We have downloaded / obtained the tender document(s) for the above mentioned 'Tender/Work' from the web site(s) namely:

_____ as per your advertisement, given in the above mentioned website(s).

2. I/We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like annexure(s), schedule(s), etc .), which form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.

3. The corrigendum(s) issued from time to time by your department/ organisation too have also been taken into consideration, while submitting this acceptance letter.

4. I/We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.

5. In case any provisions of this tender are found violated , then your department/ organisation shall without prejudice to any other right or remedy be at liberty to reject this tender/bid including the forfeiture of the full said earnest money deposit absolutely.

Yours Faithfully,

(Signature of the Bidder, with Official Seal)

AUTHORIZATION LETTER

Tender Reference No: _____

Name of Tender / Work: -

We _____ hereby authorize M/s
_____ having address at _____ to buy, sell and support
of all equipment for establishment of APCO Phase-II Digital Wireless Communication
System to Delhi Police. We shall be fully responsible to support of our products with
full Guarantee/Warranty and Post warranty obligations as per the general and special
terms & conditions of the tender/contract.

SIGNATURE AND STAMP OF THE MANUFACTURER

Note: - The certificate should be duly ink-signed and stamped by the OEM.

CHECK LIST - TECHNICAL BID
(Enclose with Technical Bid)

- | | | |
|-----|----------------------------------------------------------------------------------------------------------------|--------|
| 1. | Have you furnished bidder's particulars furnished (Annexure-T1)? | Yes/No |
| 2. | Have you furnished Bid Form (Annexure-T2)? | Yes/No |
| 3. | Have you enclosed Bill of Material as per Schedule of Requirement giving details of quoted items (Chapter -3)? | Yes/No |
| 4. | Have you enclosed compliance sheet of Technical Specs (Chapter -4)? | Yes/No |
| 5. | Have you furnished the Guarantee/Warranty and Post Warranty Maintenance Undertaking (Annexure – T3)? | Yes/No |
| 6. | Have you furnished Bid security (Earnest Money) Clause 3, Chapter -1 ? | Yes/No |
| 7. | Have you enclosed the authorization letter of OEM as per Annexure T-9?
Yes/No | |
| 8. | Have you enclosed all Technical Brochures relevant to bid? | Yes/No |
| 9. | Have you furnished company details for eligibility criterion (Annexure T-4)? | Yes/No |
| 10. | Have you enclosed GST registration and clearance certificate (Annexure T-4)?
Yes/No | Yes/No |
| 11. | Have you enclosed the certificate as per clause 12 (7) of Chapter 1? | Yes/No |
| 12. | Have you enclosed Proforma for Contract Performance Bank Guarantee (ANNEXURE – T7)? | Yes/No |
| 13. | Have you enclosed tender acceptance letter (ANNEXURE – T8)? | Yes/No |
| 14. | Have you offered the goods & services as per delivery schedule (clause 15, Chapter-1)? | Yes/No |
| 15. | Have you noted the contents of Contract Form (Chapter 6)? | Yes/No |
| 16. | Have you signed and sequentially numbered each page of your Bid? | Yes/No |

BID LETTER
(Enclose with Technical Bid)

To
The Dy. Commissioner of Police,
Ops. & Communication, Delhi Police,
Integrated Complex, FC-50,
Shalimar Bagh, Delhi-110 088.

Ref: Tender No.V/48/11/APCO PH-2/DP
Sir,

We declare:

1. a) That we are manufacturers / authorized agents of _____.
b) That we /our principals are equipped with adequate machinery for production, quality control and testing of materials manufactured and used by us and that our factory is open for inspection by your representatives.
2. We hereby offer to supply the Stores at the prices and rates mentioned in the Commercial Bid at **Chapter 5**.
3. **Period of Delivery, Installation & Commissioning:** We do hereby undertake, that in the event of acceptance of our bid, the **supply, installation and commissioning of the System** shall be completed at site within the specified period ----- from the date of Award of Contract (LOI), and that we shall perform all the incidental services as per contract.
4. Terms of Delivery: The prices quoted are inclusive of all charges upto delivery at all the locations (sites) to be indicated by Delhi Police.
5. We enclose herewith the complete Commercial Bid as required by you and also enclosed the Check List.
6. We agree to abide by our offer for a period of **180 days** from the date fixed for opening of the Bids and that we shall remain bound by a communication of acceptance within that time.
7. We have carefully read and understood the terms and conditions of the tender and the conditions of the Contract applicable to the tender and we do hereby undertake to supply as per these terms and conditions.
8. Certified that the Bidder is:
a sole proprietorship firm and the person signing the tender is the sole proprietor/constituted attorney of the sole proprietor, or
a JV, and the person signing the tender is from the leading partner in the JV and he has authority to refer to arbitration disputes concerning the business of the partnership by virtue of the agreement/by virtue of general power of attorney, or
a company and the person signing the tender is the constituted attorney.

NOTE: Delete whatever is not applicable. All corrections/ deletions should be duly attested by the person authorized to sign the tender document.

9. We do hereby undertake, that until a formal Contract is prepared and executed, this bid, together with your written acceptance thereof and placement of letter of intent awarding the contract, shall constitute a binding Contract between us.

Dated this _____ day of _____ 2018.

Details of enclosures:		Signature of the Bidder	
Telephone No.	Mobile No.	Full address:	
		Fax No.	Email address:

Form No. E-5

ELECTRONIC CLEARING SERVICE (CREDIT CLEARING)
(MODEL MANDATE FORM)
(INVESTOR/CUSTOMER'S OPTION TO RECEIVE PAYMENTS THROUGH CREDIT CLEARING
MECHANISM)

(Scheme name and the periodicity of payment)

1. INVESTOR/CUSTOMER'S NAME :
2. PARTICULARS OF BANK ACCOUNT
 - A. BANK NAME :
 - B. BRANCH NAME :
Address with Tel. No. :
 - C. 9-DIGIT CODE NUMBER OF THE :
BANK AND BRANCH
(Appearing on the MICR cheque issued
by the bank)
 - D. ACCOUNT TYPE :
(S.B. Account/Current Account or
Cash credit with code 10/11/13)
 - E. LEDGER NO./LEDGER FOLIO NO. :
 - F. ACCOUNT NUMBER :
(As appearing on the cheque Book)
 - G. IFSC CODE NUMBER/RTGS No. :
(In lieu of the bank certificate to be obtained as under, Please attach a blank cancelled
cheque, or photocopy of a cheque or front page of your saving bank passbook issued by your
bank for verification of the above particulars.)

3. DATE OF EFFECT

I hereby declare that the particulars given above are correct and complete. If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold the User institution responsible. I have read the option invitation letter and agree to discharge responsibility expected of me as a participant under the Scheme.

Date: _____ Signature of the Investor/Customer

Certified that the particulars furnished above are correct as per our records.

Signature of the Authorized
Official from the Bank