6. Operations and Communications

6.1. Introduction

The Operations & Communications (Ops & Comm) Unit of the Delhi Police is responsible for providing communications facility to all police stations, pickets, check posts, traffic, PCR vans, security arrangements and officers of the Delhi Police. It is also responsible for overall maintenance of CCTV cameras installed by the Delhi Police.

6.2. Communication systems

As of May 2019, the communication system of the Delhi Police was employing a mix of conventional and trunking[43] (APCO P25 Phase-I and TETRA) communication systems.

Trunking	APCO P25 Phase-I	• Procured in 1999 by Delhi Police from M/s Motorola, completed its normal life span in 2009 but yet to be upgraded. • Covered entire Delhi with 5 repeater bases • Proposal for upgradation initiated in August 2011 but tenders were yet to be finalised as on July 2019
	TETRA	• Implemented (installed in the year 2009 and accepted in March 2012 with contract period of 87 months) TETRA System on rental basis from M/s HCL through GNCTD. Covered entire Delhi with 56 repeater bases. • The contract period of 87 months was completed in May 2019 and it has been discontinued from June 2019 onwards.
Conventional	UHF/VHF	• Short-range (1-2 Kms), used for roof top arrangements, picket checking, events in stadiums etc. • No need for repeater bases, useful in case of disasters • Oldest system with Delhi Police; retained to ensure diversity of technology and redundancy in communication.

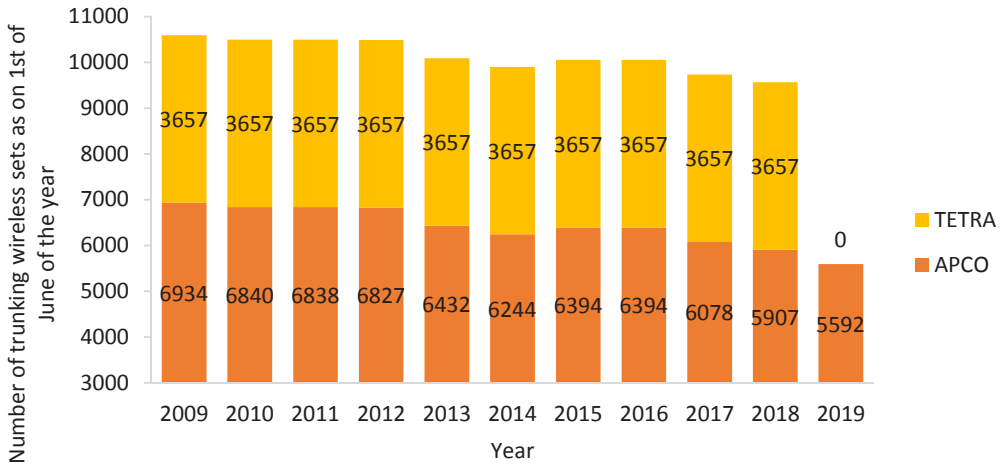
The number of conventional wireless sets declined from 9638 in June 2009 to 6172 in June 2019 as the sets condemned during the period were not regularly replaced and purchases of replacement sets was incommensurate with the number of sets condemned during this period.

[43] "Trunking" systems differ from "conventional" systems in that a conventional system uses a dedicated channel (frequency) for each individual group of users, while "trunking" systems use a pool of channels which are available for a great many different groups of users.

Audit observed that after more than a year of condemnation of 406 conventional wireless sets during July-October 2013, Delhi Police initiated[44] (January 2015) a proposal for purchasing 880 sets. Further, the procurement processes for purchase of replacement sets were also fraught with inordinate delays, as the wireless sets could be procured and taken to stock only after more than four years in March 2019.

Meanwhile, when APCO P25 Phase-I completed its normal lifespan of 10 years in 2009, the Delhi Police acquired TETRA trunking communication system to be used alongside on rental basis. However, due to expiry of the contract period of TETRA in May 2019 and failure to upgrade the APCO P25 even after 10 years of its normal lifespan, Delhi Police is now reliant (June 2019 onwards) only on the 20 years old 'APCO P25 Phase-I' communication systems for pan-Delhi coverage. Further, the Delhi Police has continuously recorded (since 2011) that the APCO P25 has been giving deteriorated performance due to ageing. Also, the number of the trunking wireless sets[45] for the APCO system declined[46] continuously during the last 10 years. Ultimately, the total number of trunking wireless sets declined sharply in June 2019 due to discontinuation of TETRA system and its 3657 sets.

Chart 6.1: Trunking Wireless Sets (as on 1st June of the year)



Source: Compiled from records of Ops & Comm Unit, Delhi Police

[44] As per the records of Delhi Police, no conventional wireless sets were procured in 6-7 years before this proposal was initiated

[45] Handheld sets are used by field personnel, mobile sets are used in vehicles and static sets are used in police stations, control rooms etc.

[46] number of wireless sets available with Delhi Police has drastically reduced from 10,591 (6934 APCO sets and 3657 TETRA sets) Trunking wireless sets in June 2009, to only 5592 sets after 10 years in June 2019.

Audit observed that Delhi Police initiated (August 2011) a proposal for the upgradation of Motorola's "Smart Zone" APCO P25 Phase-I system to Motorola's "SmartX" APCO P25 Phase-II system[47]. Delhi Police had clearly stated that the upgradation project is not in lieu of the TETRA system and had envisaged simultaneous use of TETRA and APCO P25 Phase-II systems for 'diversity in technology, frequency band, repeater sites and operational methodology'. Further, the proposal had assessed a tentative requirement of 6000-7000 wireless sets with APCO P25 Phase-II, which would have replaced the approximately 6800 APCO P25 Phase-I sets being used then (in 2011) and supplemented the 3657 TETRA sets.

However, despite the criticality of the proposal, it kept shuffling between the Delhi Police and MHA for almost seven years before tenders were invited for the first time in September 2018.

During this period, no progress was made on the proposal till December 2013, when MHA advised Delhi Police to get the proposal independently examined by DCPW (Directorate of Coordination-Police Wireless) and resubmit the proposal after considering DCPW's comments. DCPW responded to the Delhi Police expressing its reservations about the proposal which was likely to lead to a single bidder solution and that the proposed system could not be recommended since Scientific Analysis Group's (SAG)[48] approval was not available for the same. Thereafter, MHA accorded (September 2016) 'in-principle' concurrence to the proposal on Delhi Police' assurance that SAG approval would be sought after selection of firms.

The Delhi Police then submitted (June 2017) to MHA the technical specifications and draft tender documents, on which MHA again observed (August 2017) that the proposed system seems to be patented and proprietary technology and asked (April 2018) the Delhi Police to obtain quotes from at least three vendors. On being informed (May 2018) by the Delhi Police that quotes/estimates obtained from two firms were higher than the estimates given by M/s Motorola, MHA accorded (July 2018) approval for the tender documents and global tender. Upon inviting (August 2018) the bids, though five firms had participated

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47 APCO P25 is an open standard for communication systems, with several manufacturers e.g. Motorola, Harris, Tait etc.

48 This issue of SAG encryption was resolved (December 2015) when it was decided that when requirement for secured channels would arise, necessary approval shall be obtained from SAG.

(October 2018) in pre-bid meeting, single bid of M/s Motorola was found to be received on opening the bids. The tender was then scrapped and re-invited in June 2019.

Audit further observed that out of 70 queries received during the pre-bid meeting (October 2018), modifications were effected for 43 queries. However, out of these, 19 modifications were reverted/not incorporated in the tender document issued in June 2019. Out of these, modifications were again effected in 14 cases during pre-bid meeting for 2nd tender, which indicates that adequate due diligence was not carried out while retendering. Moreover, in the remaining five cases, request for modification was not accepted and no reasons were recorded for the decisions taken thereon.

Besides, APCO P25 Technology Interest Group has listed 'Multivendor sourcing' and 'Interoperability' among the benefits of APCO P25. The technical specifications issued by MHA, as guidance for all states/UTs, also seeks Interoperability (IOP) certification from technical Working group of the APCO Association' to ensure interoperability with minimum two vendors. Similarly, the Delhi Police had mandated demonstration of the interoperability of system with sample sets of other vendors and submission of interoperability certificate.

However, the Delhi Police included another clause, "the radio system infrastructure (base station and switch) and radios (portable, mobile and static) shall be of the same make from the same OEM (original equipment manufacturer)", which rendered the interoperability requirement inconsequential, thus depriving Delhi Police from benefitting from one of the major benefits of APCO P25 open standards. Also, this issue was raised during pre-bid meetings but no deliberations in this regard were found available on record.

Regarding Interoperability, Delhi Police replied (June 2020) that it is not possible to do Factory Acceptance Test (FAT) at OEM locations if different product of different OEM is quoted. Reply is not tenable since, if the bidder is quoting for products of different OEMs, then it would be the responsibility of the bidder to arrange the products of different OEM at one place to give FAT (Factory Acceptance Test).

The Delhi Police had continuously highlighted the fact that APCO P25 Phase-I system had crossed its normal life span of 10 years (in 2009), and was giving deteriorated performance due to ageing, and needs immediate replacement to

meet operational requirements of the Delhi Police. Further, it was highlighted that this system is the backbone equipment of the Delhi Police communication system and may collapse at any point of time due to its old age. Audit is of the view that based on the comments of MHA on various occasions about the tender specifications favouring one particular vendor, the Delhi Police should have exercised more diligence in finalising the tender specifications and accepted/rejected queries by recording its justification and reasons. Overall, this appears to have affected the response to the tender and ultimately resulted in delay in upgradation of the trunking system.

In its reply (June 2020), Delhi Police mentioned that the tender process for upgradation of communication system was at final stage and price bid will be opened shortly after the technical evaluation. Delhi Police also replied that a proposal for purchase of 3063 UHF handheld sets, 100 UHF Static/Mobile sets, and 19 UHF repeaters is also under process.

Government of India and Delhi Police should ensure that utmost priority is given for upgradation of Delhi Police's communication system in a transparent and time-bound manner. Government may also consider revision in delegation of financial and administrative powers to Delhi Police to avoid undue delays in procurement of such vital equipment.

6.3. CCTV Surveillance

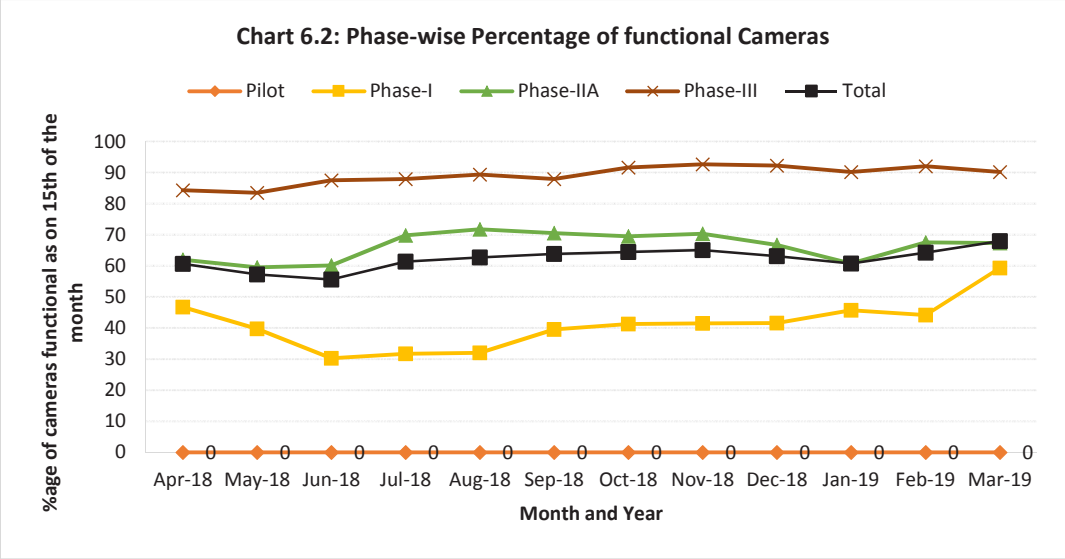
In the last ten years, the Delhi Police has installed 4,100 CCTV cameras in entire Delhi to keep a watch on the public places by deployment of cameras at strategic locations. Out of these 4,100 cameras, 3,870 cameras were installed through ECIL in four phases, as shown in Table 6.1, and 230 cameras were on rental basis.

Table 6.1: Cameral installed through ECIL

Phase (Contract Date)	No. of Cameras	No. of Sites	Expenditure incurred
Pilot Phase (Feb 2009)	56	2	₹5.61 crore
Phase-I (March 2010)	1,073	29	₹85.61 crore
Phase-IIA (Jan 2012)	2,085	38	₹121.35 crore
Phase-III (March 2012-Jan 2014)	656	10	₹18.87 crore
Total	3,870	79	

Source: Information provided by Delhi Police

Audit observed that during April 2018-March 2019, the number of functional CCTV cameras ranged between 2152 and 2631 out of a total of 3870 cameras, i.e., 55 to 68 *per cent functional cameras*.



Source: Compiled from records of Delhi Police

Audit observations regarding functioning of CCTV cameras are given in the succeeding paragraphs.

6.3.1. Functioning of cameras

The work for installation of 56 CCTV cameras at two sites, Ghazipur Border (18) and Vasant Vihar (38), under Pilot Phase, was awarded (February 2009) to Electronics Corporation of India Limited (ECIL) for ₹5.89 crore. After the installation of cameras by ECIL, the sites were handed over to the Delhi Police in March 2012 and March 2015 respectively. Audit observed that the agreement with the service provider did not include provision for internet leased line to link Master Control Station with Local Surveillance Station. Consequently, ECIL submitted additional bills (₹0.41 crore in January 2013 and ₹0.35 crore in September 2014) for payment for the internet lease line.

However, the agreement was not amended and all these 56 cameras were declared non-functional from August 2015 due to lack of connectivity. Thereafter, the system has been dismantled in November 2018. Thus, due to not keeping provision for connectivity/leased line in agreement, the 56 cameras installed under the Pilot Phase remained operational for less than three years, rendering the expenditure of ₹5.61 crore wasteful. Delhi Police replied (June 2020) that since there was no provision for reimbursement of leased line connectivity charges, efforts were made but the proposal could not be got approved before the dismantling of the system due to major third party damages. However, necessary provision in agreements of consecutive phases were made.

As per the agreement with ECIL, 99 *per cent* monthly system availability was required to be ensured by ECIL. Also, ECIL was to provide one *per cent* extra cameras of each type at all the sites listed under various phases without any additional cost to ensure that all the completed systems (including all equipment, hardware, software, cables, consumables etc.) achieve the objectives of the Delhi Police. Since ECIL has not kept reserve cameras for any site, Delhi police should consider adjustment of amount payable to ECIL, by reducing the cost for the cameras not provided.

	Phase-I	Phase-IIA	Phase-III
Total Sites/ cameras	29/ 1073	38/ 2085	10/ 656
Sites with Availability>99 %	0	1	0
Sites with Availability:51-99 %	12	18	10
Sites with Availability: 26-50 %	11	5	0
Sites with Availability: 0-25 %	6	14	0
Whether 1 % reserve cameras kept	No		

Besides, Audit also observed inordinate delays in various approvals by the Delhi Police for shifting/repairs of faulty/damaged cameras/equipment etc. Some illustrative examples are given below:

Site	Remarks
Saket complex Market	45 CCTV cameras installed at Saket Complex Market at a cost of ₹1.94 crore were inoperative since February 2016 for want of shifting of equipment. ECIL had submitted (March 2017) the estimate for which PHQ accorded (January 2019) approval after more than 20 months. Meanwhile, all the equipment in old building were found to be not functioning due to non-maintenance.
Tilak Nagar Market	37 CCTV cameras installed at Tilak Nagar Market at a cost of ₹7.19 crore were inoperative since October 2016 due to fire accident. ECIL had submitted (November 2017) the estimate for which PHQ accorded (February 2019) approval after more than 15 months. The cameras were not made operational as of August 2019.
India Gate	28 CCTV cameras installed at India Gate at a cost of ₹2.26 crore were inoperative since March 2018 due to construction work of National War Memorial. ECIL had informed Delhi Police to relocate these cameras but Delhi Police was yet to take a decision in this regard resulting in the cameras installed at a cost of ₹2.26 crore lying non-functional.

Delhi Police replied (June 2020) that an Internal Monitoring Committee for CCTVs has been constituted under chairmanship of Special Commissioner (Operations) and that sincere efforts are being made to keep all the cameras fully functional. Also, the cameras at Saket Market Complex and Tilak Nagar Market have been restored since January 2020. Delhi Police should strive for restoring the cameras to their functional state with minimal delay.

6.3.2. Monitoring of surveillance feed

All the CCTV cameras installed are connected to the Local Control Station (LCS) placed locally, and the Master Control Station (MCS) located at the police station concerned. The video feed can be monitored at the Police Station, the District Control Room and at C4i (Integrated Command, Control, Coordination and, Communication Centre).

The C4i at Police Headquarters was established as a unified command and control centre with video linkages from CCTV surveillance system and communication linkages through wireless, hotlines, etc. The C4i has a video wall, wherein feed from 64 cameras can be viewed simultaneously. Presently, C4i has video feed from 1054 cameras installed under Phase-I discussed above. Audit observed that during 2018-19, the percentage of cameras which could be monitored (as on the 15th of every month) at C4i ranged from 22 to 48 *per cent* only. Surveillance feed from the remaining cameras was not available either due to faulty cameras or network related issues. Moreover, there was only one official deployed to monitor the video feed at C4i. Audit observed that continuous monitoring of 60 cameras along with documenting the observations would be a very difficult task for only one person.

The percentage of cameras which could be monitored at C4i ranged from 22 to 48 *per cent*, which is very low. Delhi Police may ensure that a systematic and detailed review be carried out with appropriate steps proposed, to ensure that a high percentage of cameras are always functional.

Delhi Police replied (June 2020) that manual process of finding out network issues or defective cameras has limitations and thus, a proposal for purchase of health Monitoring system for CCTV cameras is under process.