Chapter 5 – Review of Contracting Issues, IT Operations, Project Management/Monitoring

Audit Objective 4

To review the contracting issues, IT operations and project management/monitoring to ensure that various contracts, IT operations, project management and monitoring aspects were adequately addressed.

5.1   Incomplete Project Implementation

CMS project was sanctioned for implementation in phases. In the first two phases, 302 crew lobbies and in the final phase, 445 crew lobbies/location including training centers and control offices were sanctioned for commissioning of CMS application, on the basis of minimum average of 36 sign on/off (per day).

Target date for implementation of CMS Project under Phase-I was fixed by RB as 7th March, 2007. Further as per railway budget speech of MR for the year 2007-08, all modules of FOIS including Rolling Stock Maintenance and Examination, Revenue Apportionment, Crew Management, Control Charting, COIS etc. were to be integrated and implemented in a time bound manner for completion by 2010.

Though a considerable time has already elapsed, even the work of development and implementation of the Crew Management System could not be completed as is indicated below:

- **Non-implementation of bio-metric system**

Biometric system was not implemented in ER, ECR, NCR, NER, SER, SECR, NFR, SCR, WCR and SWR. During test check of selected lobbies, it was noticed that Bio-metric system integrated with kiosk was installed at three lobbies of NR, two lobbies of CR, one lobby of SR and at all the selected lobbies of NWR, ECoR and WR.

Lack of Biometric system resulted in manual verification of crew which is prone to booking of crew through proxy.

In reply (September 2015), RB stated that Bio-metric module could not be implemented earlier due to network issues which have now been resolved and the system is being implemented at new lobbies. However, it cannot be implemented at already commissioned lobbies with non-compliant thin client as it requires upgraded client for local storage of thumb/finger prints.

The reply of RB contradicts itself as on one hand RB has stated that bio-metric system could not be implemented earlier due to network issues and on the other hand they have now stated that it cannot be

implemented at already commissioned lobbies due to non-compliant thin client.

- **Non-implementation of suburban module**

Suburban Module is required in CMS to capture 100 *per cent* movement of running staff tackling the EMU trains running in ER, SER, SR, WR, CR and metropolitan cities. Implementation of the module has not been completed, which in turn defeated the declared objective of the system.

In reply (September 2015), RB endorsed CRIS remarks that the module has been implemented but its usage depends on Railways. However, Audit has noted that the module is not in use.

- **Non/Incomplete integration of CMS with other Information systems**

As per MOU with CRIS signed in March 2008, CMS was to be interfaced through a message broker type of application to exchange information between Crew Management System and Freight Operations Information System (FOIS) and Crew Management System and Control Office Application/Integrated Coaching Management Systems (COA/ICMS). Further, In July 2014, RB had instructed all the ZRs to transfer the mileage bills to Pay Roll system (PRIME)[72] in electronic form only by 31 July 2014.

Audit review revealed that CMS was only partially integrated with FOIS as well as COA/ICMS. Integration between FOIS and CMS was not fully successful as train arrival/departure data of FOIS was not found updated in CMS in respect of all trains. Further, integration with COA and ICMS was incomplete/partial as coaching trains' arrival/departure time was not found updated in CMS. Similarly, integration of CMS with PRIME could not be found in all the ZRs.

Incomplete integration of CMS with FOIS, COA and ICMS has resulted in generation of incomplete reports of Pre Arrival Detention (PAD) and Pre-Departure Detention (PDD) leading to manual maintenance of PAD/PDD records and has also affected the management of crew movement monitoring for continuous duties beyond the period of 10 hours as reports did not depict the requisite details of all crew pertaining to continuous running duties on wheels.

In reply (September 2015), RB endorsed CRIS remarks that integration of CMS with other application was partial earlier and will now be fully implemented after sanction of integration. Regarding PRIME, it was stated by CRIS that a standard facility for data exchange has been made available but its usage depends on Railways. However, Audit has

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[72] *Pay Roll and Related Integrated Module*

noted that the CMS data is manually entered in PRIME application over all ZRs.

- **Non-observance of RB directives**

As per RB's directives, Electric and Diesel Crew and Guards lobbies were to be at one place in the interest of efficiency, economy and ease of operations and there were not to be multiple crew lobbies at the same location. Review of records revealed that 18 stations/locations[73] over IRs have more than one lobby.

The above indicates that proper roadmap could not be drawn up by Railway Administration for the complete rollout of CMS as per the target fixed. RB's orders to integrate lobbies were not fully implemented. The process of integrating lobbies should be expedited to achieve the benefits of economy, efficiency and ease of operations.

5.2 Poor planning for implementation

As per CMS project papers, benefits of computerization of CMS can be fully realized on computerizing all crew-booking lobbies over IR and linking them to each other over a data-network. During the course of test check of project papers as well as lobby visits, it was noticed that all the lobbies in operation over IRs were not covered under CMS Network. Details are given as under:

- Over ER it was found that in the first phase 17 lobbies were sanctioned for implementation of CMS against a proposal for 21 lobbies. Again in the second phase RB sanctioned 17 lobbies for implementation of CMS. But 16 lobbies, which were sanctioned in first phase, were also included in the sanctioned list of lobbies to be implemented under second phase. The left out 4 lobbies under first phase could not find place in the list of second phase.

- Over NR, PWL Lobby, selected for CMS under first phase, had work pertaining to booking of crew on EMU trains but the module for booking of crew on EMU train was not developed/implemented. PWL lobby also could not be commissioned due to non-availability of connectivity/electrical equipment. Hence, Terminal Support System provided to PWL lobby had to be shifted to Anand Vihar lobby. However, PWL lobby was made operational in August 2014 and crew booking was being done through preparation of individual TA.

- Over SWR, Castlerock lobby has been commissioned for Drivers only and is yet to be commissioned for Guards.

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[73] *LNL, CSTM, PNVL, IGP, PUNE (CR), SC, BZA (SCR), HWH (ER), LKO, MB, NDLS, GZB, LDH (NR), BSB (NER), VSKP (ECOR), ALD (NCR), MGS (ECR), NGP (SECR)*

The facts stated above revealed that locations were selected for implementation of CMS application without considering the feasibility aspect, which resulted in sanction of locations non-feasible to operate. This has also resulted in idling of valuable IT resources.

5.3 Non-implementation of project within target date

RB sanctioned ₹ 80 crore (approx.) during the period from 2005-06 to 2013-14 for implementation of CMS application in 747 locations in three phases[74]. As on 31 March 2015, 372 lobbies[75] were commissioned i.e. only 49.8 *per cent* of the target has been achieved during last nine years. Such a prolonged period of implementation of a project in highly developing technology era has hampered the interest of the administration. Reasons for non/delayed implementation of CMS over different zones are given in *Appendix – XXIX.*

Thus, Railway Administration's failure to prepare the site in time delayed the implementation of the project which also resulted in failure to avail the warranty of the TSS equipment supplied but not installed. Delay in implementing CMS deprived the Railways of benefits of computerization of CMS. Hence, all out efforts need to be made to expedite the implementation of CMS at all lobbies.

5.4 Lack of trained personnel to operate the terminals

CMS is a potentially powerful MIS tool in the hands of Administration for optimum utilization of running staff. Various MIS reports generated through the system are effective only when the database is up-to-date i.e. all the data is fed timely and accurately into the system. As the CMS work is 24X7 in nature, the data entry work is also manpower intensive. Trained and skilled manpower is required for successful and smooth running of CMS.

As per Project Report on CMS, staff per lobby, called CORE team, shall be trained at CRIS in use of the CMS software. This CORE team shall be responsible for implementation of the software in Railways. They shall also act as trainers for imparting further software training at Railways. In this regard, audit observations are as under:

Zone	Status of Trained personnel
ER	At six locations, a few trained personnel of Core Implementation Group were working in the system.
CR	In Pune division, one Core Implementer was trained by CRIS.
NWR	At four lobbies of Jaipur division, four out of 37 operators

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[74] *Phase-I-153 locations, Phase-II-149 locations, Final(Third)-Phase-Stage-I - 220 locations and Stage-II -225 locations*
[75] *Lobbies include two training locations and one CMS location at CRIS/NDLS Headquarters*

	were not trained.
SER	Trained personnel were not available for working system at KGP, ADL and NMP lobbies.
	At SRC, only one trained personnel was available. Outsourced personnel of KGP and SRC lobbies had not been provided any official training.
SECR	Outsourced operators were not given training.
SWR	Out of five trained operators, two crew members had returned to their running duties, one had been transferred to NCMS location and remaining two had been transferred elsewhere.
WR	At seven lobbies test checked in Audit, trained staff was not available at three lobbies (Sabarmati, Palanpur and Gandhidham).
ECR	Operators were not trained properly on the functionality of the system.

Most of the operators were working in the locations without training in 12 ZRs[76].

- There is no arrangement for imparting training to new entrants in the locations test checked. CMS operators at lobbies learnt their job from ex-colleagues but were not imparted any formal training. Moreover, users were ignorant about manual/documentation to operate CMS. At ASN, CMS lobby of ER, booking of guards was being done manually mainly due to ignorance of the operators about CMS working in the lobbies. Further, non-utilization of some of the CMS features and errors in the generation of TA/CMS operations, as highlighted under chapter 3 of this report, indicates that CMS operators were not trained properly. (NR, ER, NCR, CR, WCR)

- As per Vision Document Version 1.1 of June 2006 of CMS, Train Clerks (TNC) were to do the activity of crew booking, call serving etc. However it was noticed that there was no Joint Procedure Order (JPO) issued in CR for assignment of CMS data entry work and other related work.

5.5 Non-usage of CMS

It was observed in audit that operations of all the crew were not being covered under CMS, resulting in non-monitoring and non-management of crew through CMS.

Guards were manually signing on/off their duties. Bio-data of diesel crew was not captured in CMS, even after five years of commissioning of MAS lobby. System was lying inoperative/not-in use due to non-availability of CMS operator and defective system. Over Mumbai

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[76]*ER, SER, ECR, SCR, NER, NFR, NCR, CR, WR, SECR, NWR and SWR*

division, due to non-availability of Slate system, CMS was not in use. *(Appendix - XXX)*

5.6   Manual reporting of various types of information by different lobbies to control office

- Over NR, it was noticed that Divisional office/Control office at Delhi division was collecting various types of information from different lobbies though either the same information was already available in CMS or could be obtained from CMS. Delhi Divisional office/Control office collects morning position of crew, Diesel Crew Availability, Abnormality details, CMS Fuel position, Crew Booking, Average Rest etc. from lobbies which could be obtained from CMS.

- In ER (HWH Division), NFR (APDJ[77] Division), CR and SER reporting of various type of information by different lobbies to Control Office was being done manually and/or over telephone.

- In WCR and SR Control offices were collecting various types of information from different lobbies, though the same information was already available in CMS.

This highlights that CMS has not been implemented properly and management lacks faith in CMS application resulting in manual intervention/parallel manual operations.

5.7   Contracting Issues – supply of hardware/thin clients and maintenance thereof

5.7.1   Non-execution of Annual Maintenance Contract at CMS locations
As of March 2015, CMS application was available in 372 lobbies over IRs. In November 2010, RB approved the proposal for centralized processing of AMC of the TSS and Datacom equipment in CMS lobbies, after expiry of their initial warranty and intimated ZRs accordingly. However, in July 2011, RB turned down the proposal for centralized AMC and advised ZRs in August 2011 to ensure the maintenance of the equipment at CMS locations at zonal level. In this regard, audit observations are as under:-

- IT equipment/TSS equipment of 13 ZRs[78] were out of maintenance support since completion of their respective warranty period.

- Non- availability/maintenance of PC system led to halt of working of CMS and switch over back to manual working in NWR. The lobby at Nimpura (SER) was non-operational since 22 May 2013 due to the equipment being defective. Due to non-functioning of

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[77] *See glossary*
[78] *ECR, ER, SER, SCR, NFR, NER, CR, NWR, SWR, SR(UPS/Inverter of only two out of 26 lobbies were covered), WR, NR (Diesel lobbies of Delhi division) and NCR.*

the TSS equipment, a computerized CMS lobby turned into a Centre of Manual reporting of the crew.

- In almost all the Diesel lobbies[79] of Delhi division (NR), equipment were lying in defective condition even up to two to three years without any support for their maintenance. In CR, two kiosks, integrated with biometric and CCTV, were lying unused in the lobby of Pune Electric Shed for want of repairs.

Different officers of Railway Administration reported to CRIS that a large number of equipment had gone defective in absence of maintenance support. It was reported by the CPM/IT/CRIS that at the end of March 2012, 34 lobbies were out of order and not performing their function of sign on/sign off. The situation arose due to failure of hardware, network connectivity loss etc.

Equipment failure (PCs/kiosks etc.) without proper maintenance support hampers the smooth operations of CMS. No action has so far been taken by Railways to solve the problem.

5.7.2 Non-replacement of over-aged and defective hardware and non-maintenance of stock for spares

As per Advance Correction slip No.-71 amending paragraph 219 of Indian Railways Financial Code-Volume-I, revised life of UPS was four years, that of Thin Clients was five years and for printers it was three years.

During the course of visit of locations by Audit parties for the purpose of assessment of performance of equipment at the CMS lobbies it was noticed that none of the old hardware aging more than the prescribed codal life was replaced at lobbies test checked over ER, NR, SER, NWR, ECR, NFR and SWR. It was further noticed that none of the locations, test checked under ER, SER, ECR, WCR, SECR, CR, SCR, SR, NWR and NR[80] had working spare equipment (Thin client, Monitor, Printer, UPS, Modem, Kiosk etc.).

5.8 IT Operations/CMS Operations

5.8.1 Custodian of lobbies not fixed

Proper functioning of a system requires a well-designed organization and identification of proper custodian of the same. Project papers revealed that lobbies under final phase will be under the control of Sr. DOMs while lobbies under Phase-I and II will be under the control of Sr. DEEs and Sr. DME. Such arrangement leads to difficulties in maintenance of the lobbies.

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[79] *Jind, MTC, Delhi, DEE, ROK, SSB*
[80] *MTC, ROK, NZM, JHL, Jind, GZB,DEE*

AM/IT, in his inspection notes of 2012, raised the issue of authority as to who will execute the AMC for lobbies under final phase but no directives of RB in this regard were found in the records.

- Over CR, in Pune division separate contracts were awarded by Mechanical and Operating department for manning the CMS in respective lobbies. However, Electrical department did not consider giving the contract for operation of CMS at Pune Electric lobby. This indicated lack of co-ordination between Operating, Mechanical and Electrical departments.

- Over SWR, CMPE[81] was the overall in charge at zonal level for monitoring the activities of CMS. However, no specific orders were placed on record to this effect. Over ER, for ASN lobby custodian was Sr.DEE/OPN and for HWH lobby, it was Sr. DOM.

Over SWR, persons responsible for uploading of circulars/caution orders, maintaining loco master, etc. have not been defined and therefore the same has not been done. No Joint Procedural Order was issued by SWR for effective usage of CMS.

5.8.2 Non-provision of dust free and air conditioned environment

Dust-free and air conditioned environment is essential for smooth working of the highly sophisticated IT equipment which can also reduce the maintenance requirement.

- During lobby visit, it was noticed by audit that most of the lobbies test checked did not have an environment conducive for smooth working of IT equipment as no air conditioned facilities were found in ER, SCR, ECoR, WR NWR, SECR, SER (SRC and Nimpura lobbies) ECR (except Dhanbad lobby) CR (except at Ghorpuri), NCR (MGS lobby) and SWR. AC facilities were installed at GHY, NGC, NBQ, NJP, MLDT, KIR lobbies of NFR but all were out of order since long.

- Dust free atmosphere was not found in Pune electric lobby of CR, TLHR Lobby of ECOR and at all selected lobbies of ECR.

- Chennai Central (MAS) lobby of SR had water seepage problem. Roof/walls of the Delhi lobby of NR were found leaking.

Tuglakabad lobby of Delhi division (NR) was situated within the railway tracks and shunting/train operations were hampering the movement of crew which affects efficiency of the crew. Moreover, situation of the lobby within the tracks was a risk to the life of the crew and others associated with lobby operations.

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[81]*See glossary*