



**INFORMATION SYSTEMS AUDIT  
REPORT ON  
COMPUTERIZED RESERVATION  
AND E-TICKETING IN  
PAKISTAN RAILWAYS**

**AUDIT YEAR 2022-23**

**AUDITOR-GENERAL OF PAKISTAN**



## **PREFACE**

The Auditor-General of Pakistan conducts audit in terms of Articles 169 and 170 of the Constitution of the Islamic Republic of Pakistan 1973, read with Sections 8 and 12 of the Auditor-General's (Functions, Powers and Terms and Conditions of Service) Ordinance, 2001. The "Information Systems Audit of Computerized Reservation and E-Ticketing in Pakistan Railways" was carried out accordingly.

The Directorate General Audit Railways conducted the Information Systems (IS) Audit during audit year 2022-23 for the period from 2017-18 to 2021-22 with a view to report significant findings to stakeholders. Audit reviewed whether Information Systems and related processes were managed in compliance with applicable laws, regulations, governance criteria and relevant policies and procedures and industry guidelines. This report indicates special actions that, if taken, will help the management to promote customer facilitation, increase in passenger earnings and improve IT controls. The report has been finalized in light of management replies as well as discussions in DAC meeting.

The IS Audit Report is submitted to the President of Pakistan in pursuance of the Article 171 of the Constitution of the Islamic Republic of Pakistan 1973, for causing it to be laid before both houses of Parliament.

**Islamabad**  
**Dated:**

**(Muhammad Ajmal Gondal)**  
**Auditor-General of Pakistan**



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## ABBREVIATIONS & ACRONYMS

AC	Air Conditioned
CAATs	Computer Assisted Audit Techniques
CCM	Chief Commercial Manager
CMM	Capability Maturity Model
CNIC	Computerized National Identification Card
COBIT	Control Objectives for Information and Related
CRS	Computerized Reservation System
EFT	Excess Fare Ticket
E-Ticketing	Electronic Ticketing
FY	Financial Year
GCC	General Computer Controls
iOS	iPhone Operating System
IRCTC	Indian Railway Catering and Tourism Corporation
IS	Information Systems
ISACA	Information Systems Audit and Control Association
IT	Information Technology
LLM	Lalamusa
MIS	Management Information System
MoU	Memorandum of Understanding
MySQL	My Structured Query Language
.NET	Microsoft's open source software development framework
NADRA	National Database & Registration Authority
NTC	National Telecommunication Corporation
OTP	One Time Password
PR	Pakistan Railways
PRACS	Pakistan Railway Advisory & Consultancy Services
PTA	Pakistan Telecommunication Authority
RABTA	Railway Automated Booking and Travel Assistance
SAI	Supreme Audit Institution
SM	Station Master
SMS	Short Message Service
SOP	Standard Operating Procedure
TCR	Ticket Collector
WL	Waitlisted

## EXECUTIVE SUMMARY

The Directorate General Audit Railways, Lahore conducted Information Systems (IS) Audit of Computerized Reservation and E-ticketing systems in Pakistan Railways to analyze General Computer Controls (GCCs) and related capability maturity assessment in accordance with the guidelines provided by ISACA. The computerized reservation of PR and online booking (E-ticketing) systems were examined to review their efficacy and effectiveness.

The result of General Computer Control assessment depicted that certain controls were either not provided in the information systems or partially provided in order to accommodate manual procedures being performed by ticket checking staff and internal check of the accounts office. Therefore, computerized passengers information system of Pakistan Railways (PR) was found underutilized.

Audit used Control Objectives for Information and related Technologies (COBIT) 4.1, released by Information System Audit and Control Association (ISACA) in 2007 to review the General Computer Controls and related capability assessment of the organization. The report was discussed in the DAC's meeting held on 17<sup>th</sup> October 2023.

### Key Audit Findings:

- i. Discrepancies in Computerized reservation system of PR with regard to management of user accounts<sup>1</sup> and registration of concessional tickets for disabled/senior citizens.<sup>2</sup>
- ii. Non-automation<sup>3</sup> and cumbersome/ lengthy procedure of refund of fare after departure/late or cancelled trains.<sup>4</sup>
- iii. Non-refund of E-tickets after departure of trains.<sup>5</sup>
- iv. Use of conventional guard chart method for checking of travelling passengers instead of providing Global Positioning System (GPS) and devices inside the coaches.<sup>6</sup>
- v. Non-generation of real-time reports through reservation information system due to non-availability of historical data older than six months.<sup>7</sup>

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<sup>1</sup> Para 4.1.1

<sup>2</sup> Para 4.1.5

<sup>3</sup> Para 4.1.4

<sup>4</sup> Para 4.2.2

<sup>5</sup> Para 4.2.3

<sup>6</sup> Para 4.4.1

<sup>7</sup> Para 4.3.1

**Recommendations:**

- i. Computerized Reservation and E-ticketing systems may be redesigned embedding all missing General Computer Controls in order to ensure integrity and effectiveness.
- ii. All types of refunds be automated in order to decrease the processing time enhancing the customer facilitation.
- iii. Uniform policies applicable to both computerized reservation and e-ticketing systems for cancellation and refunds be made.
- iv. Automation of train monitoring system by provision of Global Positioning System and devices inside the coaches be ensured in order to minimize the discretion of ticket checking staff.
- v. The reservation information system be upgraded to generate real-time reports based on last three to five years data for swift information and decision making.

## **1. Introduction**

The modernizing of Pakistan Railways began in the early 1980s, focusing on essential areas such as inventory management, payroll, and operational statistics. Recognizing the growing need for efficient ticket booking, the Passenger Reservation System was digitized in 1996, starting as a pilot project in Lahore.

The computerized reservation system (CRS) of PR was developed by Directorate of IT in house by using .NET (Microsoft's open source software development framework) and MySQL (an open-source relational database management system). It was gradually upgraded and improved with the passage of time by deployment of emerging IT solutions. PR also introduced E-Ticketing for the facilitation of the public in 2014 and it was extensively improved by developing Android/iOS based application in 2017. Both CRS and E-ticketing had different interfaces but shared common database for passengers' reservation. It had following three different interfaces:

### **i. Railway Reservation Interface:**

This software interface was being used at different reservation offices over the network and facilitates the general public in booking of their tickets for all train classes.

### **ii. E-ticket Web Portal:**

This software was meant for those passengers who desired to book their seats/berths staying at their premises.

### **iii. Mobile Application:**

It was further bifurcated into two platforms i.e. a) Android and b) iOS (iPhone Operating System):

There were sixty three (63) locations over the entire Railway system up to April, 2023 where computerized reservation was available. Whereas, E-ticketing was available to general public across the country and it could be accessed either from PR's official website or Android/iOS based mobile applications.

Pakistan Railways recorded revenue earnings for the year 2021-22 as Rs 60.26 billion from all sources comprising passengers, parcel & luggage, freight and sundries. It earned Rs 30.37 billion from passengers during 2021-22 which was 50.53% of total revenue earnings. Further, the share of passenger earnings from computerized reservation offices and E-ticketing (online booking) was Rs 9.03 billion and Rs 7.67 billion respectively. In aggregate, it was approximately 55% of total passenger earnings as shown below:

**Contribution of CRS and E-ticketing in total Passenger Earnings**  
**(FY 2021-22)**

(Rs in billion)



Source: Pakistan Railways' financial statements and IT reports 2021-22

**i. Purpose of the Organization:**

Pakistan Railways' Directorate of IT had been mandated with software development, provision of IT Infrastructure, training of staff in software, improvement of IT culture, extending internet facilities in LAN (Local Area Network, WAN (Wide Area Network) and providing IT services to different departments of Pakistan Railways.

**ii. Rules / Regulations governing the organization:**

The legal framework for Pakistan Railways is Railways Act 1890. Subject to the provisions of this act, Ministry of Railways is the executive authority. By virtue of the delegation made under Section 4 of the Railways Board Ordinance 1959, all the functions and powers of the Federal Government, under the Railways Act, 1890, are exercised by the Ministry of Railways (Railway Board). The Railway administration can make regulations and procedures which are available in the form of books known as Railway Codes and Manuals; although the same are historical and could not be modified/updated during last more than three decades.

**iii. Layout of internal control system of the organization:**

Internal controls refer to the policies, rules and regulations made within the organization to ensure that activities are being carried out efficiently and effectively resulting in safeguard of the organizational assets and compliance with the relevant statutory requirements/standards and established rules and practices.

Strategic level management of Pakistan Railways, which includes Railway Board, Principal Accounting Officer, Chief Executive Officer, Financial Advisors & Chief Accounts Officers and Principal Officers, is responsible for achievement of ultimate objectives of the organization. Therefore, various internal controls have been developed and their

effective implementation provides reasonable assurance for achievement of the ultimate objectives.

The Directorate of IT of Pakistan Railways facilitates the data collection, storage, security and integrity of rail data for decision making. Therefore, the internal controls related to computerized information systems are jointly designed by the IT directorate and client departments of Pakistan Railways with the approval of authorities competent as per delegation of powers. The computerized reservation and E-ticketing systems are being operated jointly by IT directorate and commercial department of Pakistan Railways.

## **2. Salient Features of IS Audit**

### **i. Purpose of the IS Audit**

IS Audit was intended:

- i. to review the computerized reservation system of Pakistan Railways at key reservation offices in order to test implication of relevant controls and overall performance.
- ii. to review the E-Ticketing System through Railways website and mobile applications in order to test the overall performance based on available features.
- iii. to conduct a critical review of both the systems with reference to customers' facilitation.
- iv. to evaluate the efficacy of cash inflow through E-Ticketing system as compared to legacy ticketing system.
- v. to evaluate real-time reporting of revenue generation through E-Ticketing and CRS.
- vi. to assess the effectiveness of synchronization of online booking with monitoring system for checking of travelling passengers.
- vii. to analyze the actual cash inflow on account of occupancy of reserved seats/berths in online reservation system as compared to number of passengers actually travelled.

### **ii. Scope of Audit**

The IS Audit of Computerized Reservation and E-ticketing in Pakistan Railways was conducted during the year 2022-23 for the period from 2017-18 to 2021-22. Different locations were visited for the purpose of audit i.e. Railway headquarters office and reservation offices of Pakistan Railways including Lahore, Gujranwala, Rawalpindi, Peshawar, Attock, Multan and Karachi. Moreover, online reservation system was analyzed with the help of walkthrough test.

### **iii. Beneficiary of Audit**

Pakistan Railways, Parliament, travelling passengers and general public.

### **3. IS Audit Design**

#### **i. Data**

The data was obtained from IT department, Chief Commercial Manager (CCM) and Directorate of Public Relations, PR headquarters office, Lahore.

#### **ii. Methodology**

The IS Audit was conducted as per Audit Guidelines of Supreme Audit Institution (SAI) Pakistan. The data/ information was collected from selected auditable locations. Audit methodology included:

- i. Application of analytical procedures, inspection, vouching, tracing, confirmation, inquiry, observation and re-performance.
- ii. Site visits of key locations.
- iii. Website/ mobile application access through creation of User IDs /walk through tests.
- iv. Review of related and relevant policies, rules and regulations.
- v. Examination of customers' complaints regarding computerized reservation and E-ticketing
- vi. Computer Assisted Audit Techniques (CAATs) were used to evaluate IS controls and data.

## 4. RESULTS

Results of the IS Audit are presented in the succeeding paragraphs.

### 4.1 Control Environment

#### A. General Computer Controls and related Capability Assessment

General Computer Controls were assessed for capability of the organization during this IS Audit which were based on the international best practices in Information Systems Audit.<sup>8</sup> Following areas were selected for assessment of GCCs:

- i. Information Security
- ii. Management of IT Risks
- iii. IT operations
- iv. Disaster Recovery Plans
- v. Change Control
- vi. Physical Security

Capability Maturity Assessment of the overall system with regard to GCCs was conducted using rating scale from 0 to 5 in accordance with below mentioned criteria:

#### Rating Scale and Criteria

Rating scale	Description of Rating scale	Details
0	Non Existent	Processes are not defined at all
1	Initial/Ad hoc	Processes are ad hoc and overall approach to management is disorganized.
2	Repeatable and human dependent	Responsibility is left to the individual and errors are highly likely
3	Defined	Process are documented and communicated, standardized.
4	Managed	Management monitors and measures compliance with procedures and action is taken where appropriate
5	Optimized	Good practices are followed, automated and improved through continuous review of processes.

Source: Control Objectives for Information and Related Technologies (COBIT) 4.1, released in 2007 by ISACA.

Capability maturity assessment in respect of Computerized Reservation & E-ticketing system was conducted using a set of 25 controls under aforementioned GCC categories. The controls assessed under each

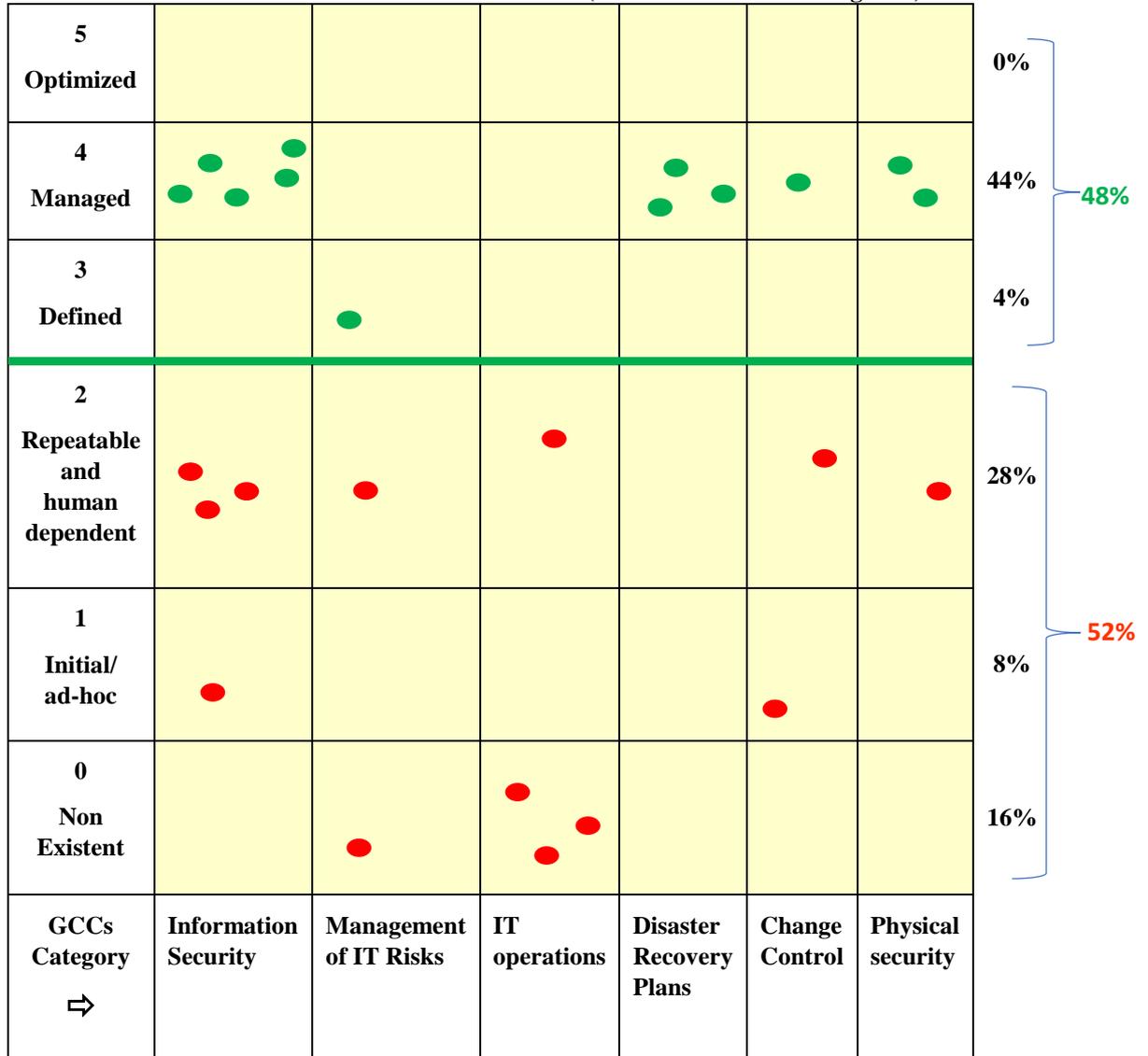
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<sup>8</sup> IS Audit Report 2022 of the Western Australian Auditor General on Local Government Entities

category are mentioned in **Annexure 1** and results are summarized in the following graph:

**Result of capability maturity assessment**

(25 controls under 6 categories)



In order to analyze GCCs, a set of twenty-five (25) controls were distributed among six (06) categories and ranked 0 to 5 as per criteria provided by ISACA. The results of GCCs and related capability assessment captured in the above graph revealed that 13 No. of GCCs out of 25 i.e. 52% were below benchmark. In this case, the benchmark was set as rating scale 3 i.e. “Processes are documented and communicated, standardized”<sup>9</sup>.

<sup>9</sup> Section 4.1 (A) GCC and related capability assessment

## **Category wise assessment of General Computer Controls**

The category wise assessment of General Computer Controls as given in the preceding table, are further elaborated below:

### **i. Information security**

Under this category, nine (09) controls were tested and it was observed that five (4) controls were managed while four (04) were either at initial/ad hoc level or put at the discretion of IT staff. Under this category, 56% controls were ranked above benchmark.

The matter was taken up with the management in June 2023. Management replied that the implementation of strict information security measures was inevitable to any web-based system. E-Ticketing system has implemented fundamental security measures including authentication/authorization, encryption of data in the system, multifactor authentication on registration of user accounts, access of reservation system through Pakistan Railways Intranet, installation of antivirus on counter reservation machines and disability of USB and other ports on counter reservation machines.

The management reply was consistent with the audit assessment as controls under this category were medium.

Audit recommends that Pakistan Railways may devise and document policies/procedures to ensure the security of information systems. For instance (i) Application hardening and control (ii) Implement technical controls to prevent impersonation and detect/prevent phishing emails (iii) Strong passwords and multi-factor authentication (iv) Limit and control administrator privileges (v) Segregate network and prevent unauthorized devices (vi) Secure cloud infrastructure, databases, email and storage, and know clearly 'who' they are handing entity and citizen data to, through their use of cloud services and (vii) Cyber security monitoring, intrusion detection and protection from malware.

### **ii. Management of IT Risks**

Three (03) controls under management of IT risks were reviewed and it was found that only one control viz identification of IT risks was defined; however, one was non-existent and other was human dependent. Ranking of 67% controls under this category was below bench mark.

The matter was taken up with the management in June 2023. Management replied that National IT Security Board regularly circulates advisories highlighting the potential security risks, threats and recommendations to government ministries, divisions and subordinates' departments for strict compliance. Directorate of IT regularly updates its staff with the potential security risks. NTC Data-Center designed and built

a hardened, Class “A”, the first ever Tier III compliant Data Center in Pakistan. Any potential threats to cyber security of E-Ticketing/Reservation system are constantly reviewed by NTC.

The management reply was evident that responsibility regarding IT risks was put on NTC. Moreover, it was observed that IT risk register was not compiled by the auditee organization.

Audit recommends that Pakistan Railways may maintain IT risk register in order to ensure that IT risks are identified, assessed and treated within appropriate timeframes. IT management should have oversight of information and cyber security risks.

### **iii. IT operations**

Clearly defined and effectively managed IT operations support IT infrastructure that can withstand and recover from errors and failures. Four (04) No of IT operation controls were reviewed and it was found that two No. of controls were non-existent in Computerized Reservation system and E-ticketing. However, it was found that IT support was available for reservation offices but due to non-automation of IT service requests, it was subject to human error and was disorganized. In this category, 100% controls were ranked below benchmark.

The matter was taken up with the management in June 2023. Management replied that Directorate of IT had dedicated hardware and software support staff providing technical support 24/7 to ensure smoothing running of E-Ticketing/Reservation system. There are joint WhatsApp groups where complaint queries are posted and instant response is provided. The call center also provides 24/7 support on phone to facilitate general public.

It has been ascertained that there was no clear policy regarding review of logs. Further, IT support was not automated and services were being provided in an un-organized manner using social media platforms like whatsapp which was not appropriate.

Audit recommends that PR may devise and document policies/procedures to guide key areas. Moreover, IT support should be automated to monitor and track the IT support services for management decisions.

### **iv. Disaster Recovery**

Disaster recovery plans help the organizations to retrieve and continue the provision of services in case of system shut down/disaster. Three (03) controls viz. back-up of data, arrangement in case of breakup of main server and backup internet connection, were reviewed. It was

observed that overall disaster recovery was managed through NTC. Therefore, ranking of 100% controls under this category was above benchmark.

The matter was taken up with the management in June 2023. Management replied that Directorate of IT had hosted E-Ticketing/Reservation systems on NTC data center. According clause “d” of MOU signed by Pakistan Railways and NTC, NTC will make the arrangements for provision of un-interrupted services for provision of services to Pakistan Railways.

The reply of management was consistent with the audit assessment as the ranking of all controls in this category was above benchmark.

Audit recommends that alternate sources may also be planned and tested time to time to safeguard PR from revenue loss by uninterrupted provision of reservation facility to customers.

#### **v. Change Control**

Through change control, organizations manage IT changes to minimize the risks and impacts to stakeholders. During the IS audit three change controls regarding planning, documentation and testing of changes in information system were tested and following control weaknesses were found:

##### **a) Were changes to Reservation System properly planned?**

It was found that changes to reservation system were not being taken place in accordance with a proper plan keeping in view the software development lifecycle. Changes were being made to the system on arising of a demand in an unplanned manner.

##### **b) Were changes to Reservation System properly documented?**

It was found that record of changes to reservation system was put at the discretion of IT staff and not being properly documented.

##### **c) Were changes to Reservation System tested before implementation?**

It was found that testing server was available. Therefore, all changes were properly tested before implementation.

In this area, ranking of 67% controls was below benchmark.

The matter was taken up with the management in June 2023. Management replied that any amendments and system updates in E-Ticketing/Reservation systems were being carried out by Directorate of IT on the approval of the commercial department. Any changes/documentation recorded at code level and stored on disk and in online repository to ensure data availability in case of system crashes.

The reply of management was an admittance of audit assessment. The entity didn't follow an organized change mechanism clearly linked with the software lifecycle. Therefore, changes incorporated in the system were not based on pre-defined approved policy/documentation.

Audit recommends that approved change control processes should be consistently applied when making changes to IT systems. All changes may go through planning and impact assessment to minimize the occurrence of problems. Change control documentation must be current and approved changes formally tracked.

#### **vi. Physical security**

IT systems are housed in purpose-built server rooms, which must have restricted access and adequate cooling and power. It was observed that Pakistan Railway had hired data services from NTC, therefore, physical security of server rooms etc. was managed. However, there were certain control weaknesses with regard to protection of IT hardware at Railway reservation offices. The ranking of 67% controls under this category was above benchmark.

The matter was taken up with the management in June 2023. Management replied that Pakistan Railways E-Ticketing system is hosted on NTC. All NTC facilities are engineered to 99.99% service availability to deliver highly reliable and scalable power, environmental control and physical security. E-Ticketing/Reservation systems are centralized and reservation centers have client access to the Reservation system. Any incidents at the reservation centers would not harm the e-Ticketing centralized data. The physical security of reservation centers pertains to the commercial department.

The reply of management was consistent with the audit assessment. The security of IT resources installed at most of the reservation offices was not up to mark.

Audit recommends that security of IT hardware and other devices installed at reservation offices may be improved.

### **B. Specific Internal Control Weaknesses**

While going through the systems' review, certain specific internal control weaknesses were observed which must be addressed by the auditee organization. These are mentioned below:

#### **4.1.1 Unmanaged User Accounts in Computerized Reservation System**

During audit analysis of 1072 No. of active user accounts revealed following results:

- i. there were 18 No. of railway employees each of which had two active user accounts of same user type at same reservation center.
- ii. 179 No. of railway employees had more than one active user account as tabulated below.

**Number of Users holding more than one User accounts in CRS)**

<b>Number of user accounts</b>	<b>No. of officials/ officers</b>	<b>Status</b>
Two (02)	105	Active
Three (03)	49	Active
Four (04)	17	Active
Five (05)	4	Active
Six (06)	4	Active
<b>Total</b>	<b>179</b>	Active

- iv Number of active user IDs at different reservation centers were found in excess than the available strength of staff as detailed below:

**Excessive number of user accounts as compared with available booking staff and booking counters**

<b>Sr. No</b>	<b>Reservation Center Name</b>	<b>No. of counters</b>	<b>HR deputed</b>	<b>No of Reservation clerks on roll</b>	<b>Active User IDs</b>
1	Lahore headquarter	08	05	08	137
2	Karachi cantt.	16	09	18	126
3	Karachi city	06	04	12	124
4	Rawalpindi	08	07	16	59
5	Multan cantt	06	03	12	37
6	Peshawar cantt	07	02	04	20
7	Attock City	01	01	02	07
8	Gujranwala	03	01	02	06
	<b>Total</b>	<b>55</b>	<b>32</b>	<b>74</b>	<b>516</b>

The above-mentioned position exposed the risk that unintended user accounts activities may take place e.g. illegal booking/cancellation of tickets. Moreover, stale user accounts were a significant security issue, as former employees and hackers could use those accounts to attack the organization's system.

The matter was taken up with the management in June 2023 and also discussed in DAC meeting on 17.10.2023 wherein DAC directed the Director/IT to discard all redundant (duplicate/ multiple) user accounts. It was also directed that one individual user can only use one unique I.D. DAC further directed that a revised reply of the para should be submitted

within one week to Audit. In compliance with DAC directives, the management submitted that 285 active user accounts were identified for retention. All other redundant user accounts would be removed from reservation system as per audit observation. The reply of management was consistent with audit view point.

Audit recommends that user administration policy should be devised and user accounts be rationalized with the mutual consultation of commercial department keeping in view the actual number of booking staff.

#### **4.1.2 Unauthentic user registration in E-ticketing System**

Terms & conditions for Personal Account registration for E-Ticketing provide that:

- a. Account will be activated after verification of the personal mobile number through SMS and email verification through email link (both are sent on creation of new account).
- b. If user does not get the SMS or email for verification, it can be resent within three times.
- c. On failure of 3 times, provided phone number and email will be blocked permanently for personal account purpose.
- d. User can change his mobile number and email address before verification, after verification of email and mobile user is not allowed to change mobile number or email address.
- e. User will provide its real CNIC Number while registering his new account.

During walk through test of E-Ticketing system, following discrepancies/control weaknesses were observed.

- i. User Registration was based on mobile number instead of CNIC. Therefore as per applicable PTA regulations one citizen holding 5 No. of mobile SIMS could register 5 No. of accounts on website /mobile App
- ii. No check on validity of email addresses as unauthentic e-mail addresses were accepted by system e.g. [asdasdas@123456.com](mailto:asdasdas@123456.com).
- iii. There was no check on CNIC # already in use. One CNIC # could be used for multiple user registrations.
- iv. There was no check on CNIC # validation. All zeros could be used as CNIC Number.
- v. Software/program verifies email accounts without sending One Time Password (OTP) on the email.
- vi. Location of the user was not used at time of login or booking.
- vii. On failure of 3 times, provided phone number and email is blocked permanently for personal account purpose. This causes troubles for the user because sometimes OTP is not received due to mobile network problem.

It is pertinent to mention that in E-ticketing system various complaints were received by PR regarding malpractices by unauthorized E-ticketing agents e.g. overcharging from passengers, issuing short distance station tickets, less fare in E-ticketing and charging full fare from passengers on tickets and giving half tickets by modifying their ticket prints. Such practices could be minimized by verifying the user particulars at the time of registration of users.

The matter was taken up with the management in June 2023 and discussed in the DAC meeting held on 17.10.2023. The DAC directed the Director/I.T and CCM to submit a comprehensive revised reply within one week to Audit. In compliance with DAC directives, the management replied that user registration based on CNIC was not implemented in the existing E-ticketing system as the PR E-ticketing was not integrated with NADRA system due to high associated costs. User registration was based on user mobile number, which was verified by sending SMS to the user. There was no unauthenticated user access in existing PR E-ticketing as users have to enter credentials to access E-ticketing. The reply was not tenable due to the fact that system had missing validation controls on user registration as discussed above.

Audit recommends that the registration procedure in respect of E-ticketing may be revisited in order to register only authentic information of users/general public. Audit further recommends that the discrepancies may be removed in new RABTA app.

#### **4.1.3 Non-communication of information regarding refund to the conductor guard after printing of Guard Chart**

During audit, it was observed that if a passenger gets refund of reserved ticket after printing of Guard's Chart in a train which did not pass through the station where refund was processed, the guard would not be informed through any source. Therefore, the seat/berth would be shown as reserved on the Guard's Chart. For example, if a passenger had reservation in Green Line (06 DN) from Rawalpindi to Karachi for 10.05.2023 but he got refund at reservation office, Attock at 02:00 PM before departure of train but after printing of Guard's Chart. In this case the Guard would not be informed about his cancellation/refund so that he could issue ticket to another visiting passenger on demand. Moreover, there was a likelihood of misuse of vacant berth by train checking staff.

The matter was taken up with the management in June 2023. Management replied that the feature of system update after printing of guard chart is not available in the existing reservation system. However, this feature would be available after on-board booking in RABTA project.

DAC meeting was held on 17.10.2023 wherein DAC directed the POs (Director/I.T and CCM) to submit a comprehensive revised reply

within one week to Audit. In compliance with DAC directives, the management reiterated its earlier reply which was an admission of audit observation

Audit recommends that the feature may either be incorporated in the existing system or ensured its availability in upcoming RABTA app.

#### **4.1.4 Non-automation of refund on account of missed or late trains for more than 6 hours (claim after closure of reservation center)**

During audit, it was observed that if a train is cancelled or delayed for more than 6 hours, the passengers intending to cancel their journey and take refund would approach the nearby railway reservation office for cancellation of their tickets. However, if the reservation office is closed, the refund would be processed on certificate of Station Master without being entered in the reservation system. This depicts wrong reporting in reservation system in respect of trains cancelled or delayed by more than 6 hours

The matter was taken up with the management in June 2023 and discussed in DAC meeting held on 17.10.2023. DAC directed the Director/I.T and CCM to submit a comprehensive revised reply within one week to Audit. In compliance with DAC directives, the management replied that there was no provision of amendments in PR reservation system after printing of guard's chart. Therefore, in case of missed train and train delayed for more than 6 hours, customers' refund was processed manually. However, the feature would be available in new RABTA system. The management reply was an admission of audit observation.

Audit recommends that refund in respect of trains late by 6 hours or more and cancelled trains may be made through existing computerized reservation system and its availability may also be ensured in the new RABTA system.

#### **4.1.5 Discrepancies in registration/booking of concession tickets against Disabled/Senior Citizens**

Pakistan Railways concession policy for booking of tickets against disabled & senior citizens provides 50% waiver of fare after verification of passenger's status according to his/her CNIC. In order to facilitate online booking by disabled/senior citizens, PR introduced registration of such persons by obtaining information on a standard registration form. The information was recorded in the Computerized Reservation System enabling the disabled/senior citizens to book E-tickets by accessing railway website or mobile app without visiting the reservation office.

During audit, registration data of 7394 disabled/senior citizens was analyzed and following discrepancies were observed:

a) Audit identified that at the time of registration of disabled/senior citizens, CNIC expiry date was entered randomly and system accepted these random numbers depicting lack of IT controls as tabulated below:

<b>Sr#</b>	<b>Date of CNIC expiry (MM/DD/YYYY)</b>
1	2/22/5522
2	2/22/5250
3	2/8/5070
4	1/1/5050
5	4/12/4000
6	3/24/4000
7	3/22/4000
8	1/1/4000

Due to recording of invalid expiry dates, concession provided to such citizens was doubtful.

b) Out of 7394 No. of cases, 674 (9.11%) CNIC of the disabled/senior citizen were expired but their accounts were active reflecting absence of IT control.

c) Date of birth of the citizens was also entered randomly without any data validation. For instance,

<b>Sr#</b>	<b>Date of Birth (MM/DD/YYYY)</b>
1	3/4/2040
2	1/1/2956
3	1/1/2054
4	1/1/2026
5	10/26/2070
6	1/1/2049
7	0957-01-01

d) Any illogical entry of citizen was allowed in the system due to lack of integration with NADRA.

e) System lacks verification of old citizen life status and some instances were noted where online booking was made by the senior citizens at age of 100 to 107 years.

f) Some tickets were booked online without any CNIC numbers depicting failure of IT input controls.

g) Registration of disabled/senior citizens was required to be maintained at reservation offices in order to facilitate them for online booking through E-ticketing. However, the request forms had not been properly maintained. There were certain instances where original forms were not available instead photocopies were placed in the record. Further, it was observed that the registered information of senior citizens/disabled persons was neither accessible nor linked with reservation system. Only the information was editable by IT Department at Railway Headquarters

Office. Moreover, if the data of passenger e.g. his/her name, Cell No./ CNIC is entered wrongly, the reservation office remained unable to make correction. It showed non-integrated and non-professional use of information system.

h) Some instances were noted where old citizen tickets were booked at reservation center but copy of CNIC was not available.

The matter was taken up with the management in June 2023 and discussed in DAC meeting held on 17.10.2023. DAC directed the Director/I.T and CCM to submit a comprehensive revised reply within one week to Audit. In compliance with DAC directives, the management submitted on that some of the discrepancies as pointed out by Audit had been removed such as restricting expiry dates of CNIC of some registered senior citizens. Moreover, the commercial department issued instructions to reservation staff ensuring valid CNIC entries at the time of booking. The reply was admission of audit observation; however, validation rules must be defined restricting the human error/malpractices.

Audit recommends that registration process of senior/disabled citizens be improved so that valid citizenships are registered.

## **4.2 Customer's Facilitation**

### **4.2.1 Non-integration of different web apps for the facilitation of passengers**

Software Design Document dated May, 2018 provides that SMS service shall be used for passengers in case of late running of trains.

During audit, it was observed that SMS service was not available in case of late or cancelled trains. Moreover, E-ticketing and Computerized Reservation System software were not integrated with other Railway Apps for customer facilitation e.g. Pak Rail Live. The passengers having computerized or E-tickets were not being informed about delays in train and they had to contact Railway helpline or separately search with Pak Rail Live for updates on delays of trains. Moreover, passengers remained unable to set alerts as provided in Pak Rail Live app. Thus non-integration of these Apps of Pakistan Railways reflected poor service delivery for passengers. Audit is of the view that live location of trains, booking of seats, meal orders, retiring rooms booking, booking of ride from railway station to passenger destination etc may be integrated in one app. This would promote Pakistan Railways' business and uphold the customer facilitation.

The matter was taken up with the management in June 2023 and also discussed in DAC meeting held on 17.10.2023 wherein DAC directed the Director/I.T and CCM to submit a comprehensive revised reply within one week to Audit. In compliance with DAC directives, the management submitted that RABTA team had taken over the project of 'Pak rail Live'

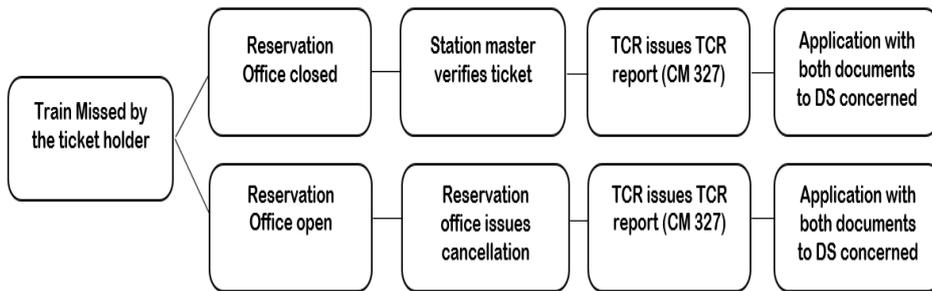
application. Directorate of IT had also informed RABTA team to integrate the ‘Pak rail Live’ with E-ticketing system to send alerts to passengers in case of train delays. Management reply is the admission of audit observation.

Audit recommends that better service delivery be ensured by providing train related information on a single interface.

#### 4.2.2 Complicated refund procedure in respect of unused computer tickets on account of missed trains

Policy for refund against unused tickets booked through reservation system provides that following procedure will be adopted for refund against unused tickets:

##### Flow diagram of refund against unused tickets after departure of train



It was observed during IS audit that procedure of refund for unused tickets was based on the early Railway system under the British era which was much difficult and cumbersome for the passengers as ticket holders had to visit three offices for completion of documents for applying the refund. Normal time for refund processing was 15 days. However, in 75% cases it took average 28 days (ranging from 16 to 156 days above normal) for clearance of refund claims of the passengers during FY 2022-23 as detailed in Annexure-2.

The matter was taken up with the management in June 2023 and discussed in DAC meeting held on 17.10.2023. DAC directed the Director/I.T and CCM to submit a comprehensive revised reply within one week to Audit. In compliance with DAC directives, the management replied that in new RABTA system refund will be given on booking window within three hours after departure of train.

Audit recommends that the refund of unused tickets should be made easy and amount be refunded to passengers within minimum time after departure of train in order to facilitate and retain the customers.

#### **4.2.3 Non-Refund of E-ticket after departure of train.**

Refund Policy of PR (Computerized Paper Ticket only) provides that in case of missing of train the passenger could avail 50% refund of fare on unused computer tickets purchased in advance subject to fulfillment of certain conditions.

During audit, it was observed that above mentioned refund was not allowed to a passenger having E-ticket if he/she missed the train unlike to a passenger holding Computerized Paper Ticket. Therefore, it had an adverse impact on E-Ticket holders.

The matter was taken up with the management in June 2023 and also discussed in DAC meeting held on 17.10.2023 wherein DAC directed the Director/I.T and CCM to submit a comprehensive revised reply within one week to Audit. In compliance with DAC directives, the management replied that as per SOP for E-ticketing after departure of train, no refund is allowed on booking through E-ticketing. If the same is allowed, it was apprehension that a passenger travelling in the train and also get refund after departure of train. Therefore, to avoid misuse of ticket refund is not allowed after departure of train. However, in new RABTA system it will be changed. The reply was an admission of audit observation.

Audit recommends that the refund policy against E-tickets after departure of train may be revisited and implemented in order to facilitate general public.

#### **4.2.4 Non provision of cancellation of computer tickets after closing of reservation centers**

During audit, it was observed that if a passenger intends to cancel the journey before departure of train, the cancellation/refund against booking was not available if reservation office was closed. The only option with such passenger is to process the refund as it is processed after departure of train.

The matter was taken up with the management in June 2023 and discussed in DAC meeting held on 17.10.2023. DAC directed the Director/I.T and CCM to submit a comprehensive revised reply within one week to Audit. In compliance with DAC directives, the management replied that due to acute shortage of staff, it was not possible to operate reservation offices for 24 hours. However, in such cases passengers will get CM-109 Guard Certificate from Station Master concerned and apply for refund to concerned Railway division.

Audit recommends that the policy for cancellation of tickets after close of reservation offices should be revisited by provision of 24/7 facility of cancellation in order to facilitate general public.

#### **4.2.5 Anomaly in E-ticket fare for Economy and AC Classes**

During audit, it was observed that passengers intending to travel in Economy class are required to pay fare from the station of available accommodation. For example a passenger travelling in economy class from Faisalabad to Karachi shall pay fare from Lalamusa (LLM) to Karachi for a ticket of LLM quota. However, this policy was not adopted for passengers opting AC Class i.e. the same passenger travelling in AC class from Faisalabad to Karachi shall pay fare from Faisalabad to Karachi for a ticket of LLM quota. This situation exposed an anomaly in application of fare of E-ticketing for different classes against the same stations.

The matter was taken up with the management in June 2023 and also discussed in DAC meeting held on 17.10.2023 wherein DAC directed the Director/I.T and CCM to submit a comprehensive revised reply within one week to Audit. In compliance with DAC directives, the management replied that the fare based on quotas was only available for the Economy class. However, the fare was not based on quotas for the AC classes as per requirement of the CMM office. The reply was admission of audit observation.

Audit recommends that anomaly in fare application may be removed and passengers be charged actual fare in accordance with the distance from starting point to end point stations.

#### **4.2.6 Non-Availability of E-Ticketing for International customers**

In India Foreign Tourists/Overseas citizens holding valid passport can avail Foreign Tourist Quota facility to book railway tickets online using IRCTC E-Ticketing website [www.irctc.co.in](http://www.irctc.co.in). International Users can book tickets under Foreign Tourist Quota up to 365 days in advance.

During audit, it was observed that E-ticketing was not available to Overseas Pakistanis/ Foreign Tourists. In contrast, this facility was available in neighboring country India as quoted above. In fact, the MoU between Pakistan Railways and National Telecommunication Corporation (NTC) dated 15.04.2021 provides that NTC shall be responsible and provide nationwide end to end secure primary and secondary connectivity services to Pakistan Railways on its request. Therefore, E-ticketing website is not accessible from outside Pakistan. It has been ascertained that non-availability of E-ticketing for overseas Pakistanis/foreign tourists caused dissatisfaction and remained unsupportive for Tourism in Pakistan.

The matter was taken up with the management in June 2023 and also discussed in the DAC meeting held on 17.10.2023 wherein DAC directed the Director/I.T and CCM to submit a comprehensive revised reply within one week to Audit.

In compliance with DAC directives, the management replied that due to security restrictions imposed by NTC, Pakistan Railways E-Ticketing application couldn't be accessed by international users. However, new RABTA E-ticketing system can be accessed from abroad. The reply was an admission of audit observation.

Audit recommends that PR online ticketing system be upgraded facilitating the customers around the world. Moreover, the availability of new RABTA system to international customers may also be ensured.

#### **4.2.7 Non-provision of facility for cancellation of orders/ tickets pending for payment and non-availability of waitlisted tickets in CRS & E-ticketing System**

Waitlisted tickets are those tickets which are booked by a user/prospective passenger but their payment is pending; these tickets are issued to other users/passengers on conditional basis subject to non-payment by the former user. In Indian Railway, Waitlisted (WL) tickets are issued; if the passenger status is marked as WL followed by a number then the passenger is considered waitlisted customer. The WL ticket is confirmed only if the former user/passenger cancels the booking or does not make payment within prescribed time.

During audit, it was observed that in Pakistan Railways, for booking of a ticket through E-ticketing (Website or Mobile App) if a user opts to pay through Jazz Cash/ Easy Paisa or UBL Omni, the system allows 7 hours and 59 minutes for payment with no option available with the user to cancel the order prior to payment. Moreover, any other prospective passenger remains unable to book as waitlisted customer.

Audit further observed that during walk through test of E-Ticketing system that a user can book maximum 12 tickets and opts to pay through Jazz cash / easy paisa/ UBL Omni agent and system allows him 4 hours and 6 minutes for payment. This order is reflected in pending orders of the registered user. This order cannot be cancelled by the user but cancelled by the system only when payment is not made within permissible time i.e. 4 hours and 6 minutes. It is important to mention that such tickets are shown booked on Computerized Reservation system (CRS) and E-Ticketing App/ website users. These 12 pending tickets would be live in ticketing system after expiry of allowed time and during this time other prospective passengers were deprived of WL tickets, who could pay instantly through cash/mobile account/ credit card. Unfortunately, such facility was not made available by Pakistan Railways.

The matter was taken with the management in June 2023 and also discussed in the DAC meeting held on 17.10.2023 wherein DAC directed the Director/I.T and CCM to submit a comprehensive revised reply within one week to Audit.

In compliance with DAC directives, the management replied that the provision of facility for cancellation of orders/tickets pending for payment was included in RABTA project. The reply was an admission of audit observation.

Audit recommends that Waitlisted (WL) Ticket may be made an integral part of the computerized reservation system or online reservation through web/mobile app as being practiced in Indian Railway. The facility may also be ensured in Railway Automated Booking and Travel Assistance (RABTA) system.

### **4.3 Real-time reporting / visibility of revenue generation**

#### **4.3.1 Non-Availability of historical data in the reservation system**

Software Design Document dated May, 2018 provides that a complete web dash board portal will be designed for management purpose so that management can access a complete real time business view (train earnings) any time from any location and based on this information, management can take better and accurate decisions. Moreover, System Requirement Specification Document for E-ticketing system provides that data will be stored easily and be accessed in quick and rapid way. Moreover, Historical data will be available as and when required.

During audit, it was observed that complete historical data was not available in the live IT system. A comparison of revenue earnings from E-ticketing and Computerized Reservation System for the period from July 2017 to June 2022 revealed that the information retrieved from system showed a difference of Rs 31.9 billion and Rs 43.133 billion respectively as shown in **Annexure-3 & Annexure-4**. It was informed by the IT officials that the historical data older than 6 months was being stored on a backup server and retrieved afterwards for generating different reports. Thus, due to non-availability of dashboard and historical data live on the system, real time reporting was not possible for the Railway management for quick and informed decisions. Therefore, the intended objectives of dashboard could not be achieved.

The matter was taken up with the management in June 2023 and also discussed in the DAC meeting held on 17.10.2023 wherein DAC directed the Director/I.T and CCM to submit a comprehensive revised reply within one week to Audit.

In compliance with DAC directives, the management replied that the historical data is archived in the E-ticketing/ reservation systems. The archived data was still available to generate reports on demand. Real time reporting could also be generated from the archived database with the use of Business Intelligence/Reporting tools. The reply was not tenable

because the information system was intended to generate reports in most efficient manner within minimum possible time.

Audit recommends that the data storage capacity of the Railway reservation information system may be enhanced and dashboard be made functional for effective decision making.

#### **4.4 Monitoring system for checking of travelling passengers**

##### **4.4.1 Non-utilization of modern gadgets for checking of travelling passengers**

The modern monitoring system for checking of travelling passengers is based on E-devices (hand held devices) connected with train reservation system.

During audit, it was observed that travelling passengers had been checked by the ticket checking staff on the basis of physical examination of passengers as compared with reservation information provided on the Guard's Chart. In the absence of instant reservation/cancellation information with train checking staff, there is a likelihood that some passengers may travel without ticket or some seats/berth are left vacant. PR initiated procurement of 260 Nos of handheld devices in 2017 for checking of travelling passengers and issuance of Printed Card Tickets and Excess Fare Tickets in the running trains. However, the procurement process was not finalized due to one or other reasons. These devices were meant to be used for following purposes:

- i. Vacant/berth summary for train staff
- ii. Vacation of seats/berth in enroute stations summary
- iii. Build in printers for ticket printing
- iv. Adjustment of passengers in different coaches
- v. Complete seat plan of train, class wise and quota wise
- vi. STE wise amount with complete details
- vii. AC failure report
- viii. Failure of electricity

The matter was taken with the management in June 2023 and also discussed in the DAC meeting held on 17.10.2023 wherein DAC directed the Director/I.T and CCM to submit a comprehensive revised reply within one week to Audit.

In compliance with DAC directives, the management replied that the use of Personal Digital Assistants devices instead of conventional guard chart was implemented in RABTA project, which would provide real time information of the passenger bookings from E-Ticketing/Reservation system. The reply was an admission to audit observation.

Audit recommends that monitoring system for travelling passengers may be automated in order to meet the challenges regarding ticketless passengers and vacant seats/berths etc.

#### **4.5 Comparison of reserved seats/berths in online reservation system and No. of passengers actually travelled**

##### **4.5.1 Variation in occupancy of seats/berths with regard to online booking**

During audit, it was observed that five passengers of 108 DN Islamabad Express on 29.04.2023 from Rawalpindi to Lahore having E-tickets in Parlour Class, didn't actually travel. However, their seats were not vacant and ticketless passengers were sitting there. The ticket checking staff prepared EFTs in respect of all five ticketless passengers at the instance of Audit. It has been ascertained that there was a likelihood that passengers having E-tickets may not travel and their seats/berths were being mis-utilized.

The matter was taken with the management in June 2023 and also discussed in the DAC meeting was held on 17.10.2023 wherein DAC directed the Director/I.T and CCM to submit a comprehensive revised reply within one week to Audit. In compliance with DAC directives, the management replied that currently the E-Ticketing/Reservation software only allows the advance booking of tickets and refund. The option of on-board passengers' booking during journey was available in RABTA system. The reply was an admission to audit observation.

Audit recommends that train checking in respect of travelling passengers be automated and linked with reservation system.

## **5. Conclusion**

Pakistan Railways' reservation and E-ticketing is a customized computerized information system which was evolved during last two decades without following any strategic plan. The software development lifecycle was also not defined properly which could be a sound basis for making changes in the system. The major controls regarding information security, disaster recovery and physical security of server rooms were managed by outsourcing the data service to NTC. This audit concluded that PR couldn't reap maximum benefits out of its reservation system due to non-automation of some crucial controls e.g. checking of passengers in running trains and IT support/ complaint management system etc. Resultantly, not even a single component of revenue receipts i.e. passenger earnings could be fully automated.

Audit ascertained that Railway Automated Booking and Travel Assistance (RABTA) would take-over the existing reservation and E-ticketing system of Pakistan Railways in 2024-25. Therefore, it is anticipated that discrepancies pointed out in this report may be properly addressed in the new reservation system in order to take maximum benefit of information technology besides achieving higher level of customer facilitation.

### **Acknowledgement**

Audit acknowledges the support of Pakistan Railways' Directorate of IT and office of the Chief Commercial Manager for their cooperation and assistance in providing the necessary information and record.

## Annexure-1

### Statement Showing GCC control categories and Rating of control Assessed over Computerized Reservation System and E-Ticketing, Pakistan Railways (Para 4.1)

Sr#	Information Security	Rating	Management of IT Risks	Rating	IT Operations	Rating	Disaster Recovery Plans	Rating	Change Control	Rating	Physical Security	Rating
1.	Password policy	2	IT risk are defined	3	IT staff support	2	Back up of data	4	Changes to Reservation System properly Planned?	1	Fire Hazards security	4
2.	Multifactor Authentication	1	IT risk register is maintained.	0	Atomization of IT support process	0	Arrangement in case of breakup of main server	4	Changes to Reservation System properly documented	2	Security of Reservation offices	2
3.	Removable Media/ Unauthorized Devices	2	System is tested against IT Risks	2	Processes /policies for Review of logs	0	Backup internet connection	4	Changes to Reservation System are tested before implementation	4	IT equipment register	4
4.	Encryption of passenger data	4			Review of Booking clerks rights	0						
5.	Classified Data Policy	2										
6.	Anti-Malware	4										
7.	Anti-virus	4										
8.	Disaster Recovery Plans	4										
9.	Email protection policy	4										

## Annexure-2

### No. of days taken to refund on account of Missed Trains during FY 2022-23 (Above normal 15 days)

SR	Ticket No.	Date of Application (M/D/Y)	Amount of Ticket (Rs)	Refund Amount (Rs)	Date of Pay order (M/D/Y)	No. of days Taken in processing claim
1	2026051444	15-Mar-23	1650	820	4-Apr-23	21
2	2024213058	18-Mar-23	2450	1205	4-Apr-23	18
3	2025143863	20-Mar-23	2200	1090	4-Apr-23	16
4	2026047083	2-Mar-23	1150	570	4-Apr-23	34
5	2026062167	21-Mar-23	3000	1480	6-Apr-23	17
6	2026060543	22-Mar-23	750	370	6-Apr-23	16
7	2026060500	21-Mar-23	2250	1110	8-Apr-23	19
8	2026047852	17-Mar-23	2600	1290	8-Apr-23	23
9	2026059712	15-Mar-23	2500	1740	8-Apr-23	25
10	2026050792	20-Mar-23	1750	1220	8-Apr-23	20
11	2025616164	13-Mar-23	6600	3270	10-Apr-23	29
12	2026062111	25-Mar-23	6000	2990	11-Apr-23	18
13	2026061883	28-Mar-23	21450	10710	13-Apr-23	17
14	2026062355	27-Mar-23	1100	760	13-Apr-23	18
15	2026062008	27-Mar-23	1100	740	13-Apr-23	18
16	2019546163	23-Feb-23	7950	3970	13-Apr-23	50
17	PCT 982254	8-Mar-23	6800	3395	13-Apr-23	37
18	2026059718	21-Mar-23	2700	1340	13-Apr-23	24
19	2025763373	11-Nov-22	3950	1960	15-Apr-23	156
20	2025142241	27-Feb-23	4500	2240	15-Apr-23	48
21	2026051195	21-Mar-23	3950	1970	17-Apr-23	28
22	02024213455/56	1-Apr-23	56100	28010	18-Apr-23	18
23	2026063855	11-Apr-23	950	469	28-Apr-23	18
24	2025144457	10-Apr-23	4150	2045	29-Apr-23	20
25	2026054166	11-Feb-23	3500	1740	1-Mar-23	19
26	2025634868	6-Feb-23	2500	1245	1-Mar-23	24

<b>SR</b>	<b>Ticket No.</b>	<b>Date of Application (M/D/Y)</b>	<b>Amount of Ticket (Rs)</b>	<b>Refund Amount (Rs)</b>	<b>Date of Pay order (M/D/Y)</b>	<b>No. of days Taken in processing claim</b>
27	2025141025	6-Jan-23	1000	495	1-Mar-23	55
28	2026023922	24-Jan-23	1750	870	1-Mar-23	37
29	2026032909	14-Feb-23	1400	690	1-Mar-23	16
30	2026613190	14-Feb-23	1500	740	2-Mar-23	17
31	2025637901/02	14-Feb-23	4550	2240	2-Mar-23	17
32	2026046088	13-Feb-23	1800	895	2-Mar-23	18
33	2026054048	14-Feb-23	5400	2685	2-Mar-23	17
34	2026040623	14-Feb-23	2650	1305	2-Mar-23	17
35	2026038238	15-Feb-23	10800	5380	2-Mar-23	16
36	2025637899	10-Feb-23	2700	1345	3-Mar-23	22
37	2026040220	11-Feb-23	1500	735	3-Mar-23	21
38	2026037637	8-Feb-23	6800	3395	4-Mar-23	25
39	2026052389	15-Feb-23	16000	7980	4-Mar-23	18
40	2025141531	23-Jan-23	700	345	4-Mar-23	41
41	2026028699	6-Jan-23	1860	920	6-Mar-23	60
42	2026049174/75/76	11-Feb-23	9505	4720	6-Mar-23	24
43	2025142520	20-Feb-23	3000	1490	7-Mar-23	16
44	2026031621	3-Feb-23	1050	515	7-Mar-23	33
45	2026035855	20-Feb-23	11100	5535	8-Mar-23	17
46	2026035467	13-Feb-23	2200	1090	8-Mar-23	24
47	2025637969	6-Feb-23	1550	770	8-Mar-23	31
48	20260492225	14-Feb-23	1900	945	8-Mar-23	23
49	2026027687	28-Jan-23	6000	4180	9-Mar-23	41
50	2026035912	15-Feb-23	3750	1850	13-Mar-23	27
51	2025479538	23-Jan-23	5700	5700	13-Mar-23	50
52	2017759854	11-Feb-23	1750	870	14-Mar-23	32
53	2024210518	11-Feb-23	1750	870	14-Mar-23	32
54	2026038914	20-Feb-23	3200	1590	14-Mar-23	23
55	2026035307	8-Feb-23	15200	7580	16-Mar-23	37
56	2025634912	23-Feb-23	3000	1485	18-Mar-23	24

<b>SR</b>	<b>Ticket No.</b>	<b>Date of Application (M/D/Y)</b>	<b>Amount of Ticket (Rs)</b>	<b>Refund Amount (Rs)</b>	<b>Date of Pay order (M/D/Y)</b>	<b>No. of days Taken in processing claim</b>
57	2025142754	27-Feb-23	1500	740	18-Mar-23	20
58	2026036759	20-Feb-23	2250	1110	20-Mar-23	29
59	PCT87557	2-Mar-23	8650	4320	20-Mar-23	19
60	2025143088	4-Mar-23	3000	1480	21-Mar-23	18
61	2026050329	6-Mar-23	9900	4930	22-Mar-23	17
62	2026061184	8-Mar-23	1100	540	25-Mar-23	18
63	2025516082	27-Jan-23	2800	1380	28-Mar-23	61
64	2026042606	13-Mar-23	15100	7540	28-Mar-23	16
65	2025143589	14-Mar-23	3400	1675	29-Mar-23	16
66	2026029660	7-Mar-23	1400	690	29-Mar-23	23
67	2026059060	9-Mar-23	750	370	30-Mar-23	22
68	2026061173	8-Mar-23	1500	1040	31-Mar-23	24
69	2026047107	13-Mar-23	1400	695	31-Mar-23	19
70	2026049073	6-Mar-23	4300	2190	31-Mar-23	26
71	2021141230	8-Jan-22	1700	1180	1-Feb-22	25
72	2022038975	3-Jan-22	10500	5220	1-Feb-22	30
73	2023630666	10-Jan-22	2750	1350	1-Feb-22	23
74	2021134902	12-Jan-22	3750	1860	1-Feb-22	21
75	2021129461	20-Dec-21	2850	1410	2-Feb-22	45
76	2021133748	9-Jan-22	600	415	2-Feb-22	25
77	2021134044	14-Jan-22	7100	3545	2-Feb-22	20
78	2021128252	12-Jan-22	2550	1245	2-Feb-22	22
79	2021138979	18-Jan-22	1500	735	3-Feb-22	17
80	2017753172	28-Dec-21	11100	5540	3-Feb-22	38
81	2021116511	31-Dec-21	2700	1875	3-Feb-22	35
82	2022935464	12-Jan-22	9000	4470	3-Feb-22	23
83	2021148076	17-Jan-22	1600	790	4-Feb-22	19
84	20211223	14-Jan-22	3850	1900	7-Feb-22	25
85	2021137154	18-Jan-22	3800	1890	7-Feb-22	21
86	202115029	18-Jan-22	2200	1080	7-Feb-22	21

<b>SR</b>	<b>Ticket No.</b>	<b>Date of Application (M/D/Y)</b>	<b>Amount of Ticket (Rs)</b>	<b>Refund Amount (Rs)</b>	<b>Date of Pay order (M/D/Y)</b>	<b>No. of days Taken in processing claim</b>
87	2021141323	5-Jan-22	1950	970	7-Feb-22	34
88	2021146209	22-Jan-22	1950	1360	7-Feb-22	17
89	2021151238	18-Jan-22	2400	1670	7-Feb-22	21
90	2021137128	20-Jan-22	3500	1740	8-Feb-22	20
91	2021125973	17-Jan-22	2550	1260	8-Feb-22	23
92	2021130710	10-Jan-22	1650	810	8-Feb-22	30
93	2021147118	11-Jan-22	2750	1370	8-Feb-22	29
94	2023626711	11-Jan-22	2750	1350	8-Feb-22	29
95	2021146274	24-Jan-22	12500	6220	8-Feb-22	16
96	2021150511	17-Jan-22	4000	1990	8-Feb-22	23
97	02021125440 to 41	9-Jan-22	4000	1960	9-Feb-22	32
98	2021147425	17-Jan-22	5850	2910	9-Feb-22	24
99	2017754138	20-Oct-21	4550	3180	9-Feb-22	113
100	2021151586	21-Jan-22	550	270	10-Feb-22	21
101	2021134372	6-Jan-22	1200	835	10-Feb-22	36
102	2021139400	27-Jan-22	1150	570	11-Feb-22	16
103	2021124916	31-Dec-21	14200	7090	11-Feb-22	43
104	2021132412	26-Jan-22	4700	2335	11-Feb-22	17
105	2021151530	24-Jan-22	5800	2890	12-Feb-22	20
106	2021134058	12-Jan-22	1100	540	12-Feb-22	32
107	2023626577	7-Jan-22	3900	1940	12-Feb-22	37
108	2021145985	24-Jan-22	7800	3870	12-Feb-22	20
109	2021145790	27-Jan-22	1600	795	12-Feb-22	17
110	2021146738	27-Jan-22	5400	2685	13-Feb-22	18
111	2021128800	14-Jan-22	3900	1945	14-Feb-22	32
112	2023630320	10-Jan-22	2400	1170	14-Feb-22	36
113	2023707236	12-Jan-22	4900	2445	15-Feb-22	35
114	2021146387	29-Jan-22	7900	3940	15-Feb-22	18
115	2021145800	19-Jan-22	4250	2110	15-Feb-22	28
116	2023630377	12-Jan-22	1800	890	15-Feb-22	35

SR	Ticket No.	Date of Application (M/D/Y)	Amount of Ticket (Rs)	Refund Amount (Rs)	Date of Pay order (M/D/Y)	No. of days Taken in processing claim
117	2023630376	12-Jan-22	1650	810	15-Feb-22	35
118	2021150818	29-Jan-22	550	270	15-Feb-22	18
119	2021146804	29-Jan-22	1650	1140	16-Feb-22	19
120	2023627656	22-Jan-22	11100	5540	16-Feb-22	26
121	2021146287	27-Jan-22	1500	735	16-Feb-22	21
122	2021154227	31-Jan-22	2750	1350	16-Feb-22	17
123	2021153676	1-Feb-22	1100	540	16-Feb-22	16
124	2021129202	21-Dec-21	2900	1445	16-Feb-22	58
125	2023100308	24-Jan-22	600	295	17-Feb-22	25
126	2021144696	1-Feb-22	3440	1620	18-Feb-22	18
127	2022001000	29-Oct-21	1550	770	19-Feb-22	114
128	2021146146	1-Feb-22	2000	990	19-Feb-22	19
129	2021131752	17-Jan-22	700	340	19-Feb-22	34
130	2021148836	29-Jan-22	4150	2900	19-Feb-22	22
131	2021153469	29-Jan-22	21000	14680	19-Feb-22	22
132	2.02E+11	18-Jan-22	5800	2890	21-Feb-22	35
133	2019545290	24-Jan-22	5250	2620	22-Feb-22	30
134	2023627943	27-Jan-22	550	270	22-Feb-22	27
135	2021151765	26-Jan-22	550	270	22-Feb-22	28
136	2021146977	2-Feb-22	1100	760	22-Feb-22	21
137	2021141632	12-Jan-22	1450	715	23-Feb-22	43
138	2021152416	1-Feb-22	1950	970	23-Feb-22	23
139	2020311843	20-Dec-21	4450	2220	23-Feb-22	66
<b>Average number of days</b>						<b>28</b>

### Annexure-3

**Statement showing Difference of Historical data of net earnings from E-ticketing available on system/software and IT Department records for the period from 2017 to 2022 (Para 4.4.1)**

**(Rs in million)**

<b>Division</b>	<b>E-ticketing Reported by IT department (2017 to 2022)</b>	<b>E-ticketing Reports as per System/ Software (2017 to 2022)</b>	<b>Difference</b>
Lahore	8,870.66	82.89	8,787.77
Rawalpindi	2,559.74	41.42	2,518.32
Multan	2,599.64	20.04	2,579.60
Sukkur	3,021.19	23.63	2,997.56
Peshawar	686.62	13.05	673.56
Karachi	14,194.66	193.34	14,001.31
Quetta	350.81	4.88	345.93
<b>Total</b>	<b>32,283.31</b>	<b>379.27</b>	<b>31,904.05</b>

Source: System generated reports and IT department reports.

## Annexure-4

Statement showing Difference of Historical data of net earnings from CRS available on system/software and IT Department records for the period from 2017 to 2022 (Para 4.4.1)

(Rs in million)

Division	C.R.S Reported by IT department (2017 to 2022)	C.R.S Reports as per System/ Software (2017 to 2022)	Difference
Lahore	17,750.21	30.81	17,719.39
Rawalpindi	11,436.17	55.63	11,380.54
Multan	3,700.73	12.97	3,687.76
Sukkur	1,183.02	9.26	1,173.75
Peshawar	1,246.38	7.75	1,238.63
Karachi	5,135.09	38.00	5,097.09
Quetta	2,849.28	13.55	2,835.72
<b>Total</b>	<b>43,300.87</b>	<b>167.98</b>	<b>43,132.89</b>

Source: System generated reports and information from IT department