

## Major Achievements : Signal & Telecom.

Financial Year : 2020 – 21

### Signalling

#### 1. Asset renewal work : -

(SRU station)

Commissioning of **Salempur (SRU)** station after asset renewal work with Std.-II(R) interlocking from along with complete track renewal of signaling gears and provision of Domino type panel by Division open line have been done in 6 hours long traffic block followed by a testing block of 2 hours duration on 15.05.2020 by taking all precautions and observing all health protocol issued by Government of India for COVID-19.



Domino panel

#### 2. Up gradation of Standard of Interlocking : -

(AMH station)

Commissioning of Panel interlocking with up gradation of interlocking from Std.-I to Std.-II(R) at **Azamgarh (AMH)** station in the division has been done by Construction organization on 23.05.2020 in 4 days NI with complete track circuiting, provision Domino type panel, all modern signaling equipments like IPS, Data Loggers, BPAC, LED lit signals and two nos. DG sets at the station.



UFSBI – RKS side



Domino panel



UFSBI – SAA side

#### 3. Commissioning of EI/PI interlocking and Doubling : -

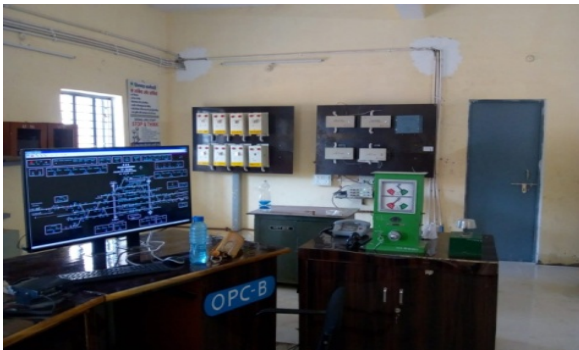
(06 stations)

Commissioning of Doubling with Electronic interlocking (Make – KYOSAN) with Std.-II(R) interlocking at **Katka (KFK)** and **Madhosingh (MBS)** stations in PRRB – MUV section on 13.06.2020, **Taraon (TRN)**, **Syaidpur bhitri (SYH)** and **Aunihar Jn (ARJ)** stations on 12.10.2020 and **Nandganj (NDJ)** station on 12.11.2020 in ARJ – GCT section through a joint execution by RVNL, Construction and Open line. During the work, complete track circuiting of newly laid running line for doubling with signal and points and major assets like LED lit signals, Networked Data Logger (Make – Efftronics), IPS (Make – Amar Raja), HASSDAC (Make – GG.Trionics) for BPAC and Double line block instrument (Make – SWS/Byculla).

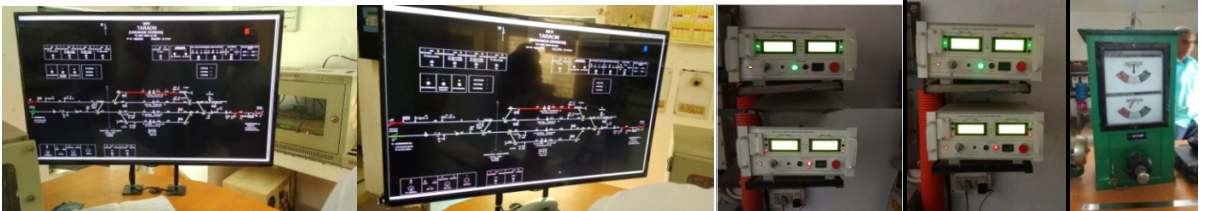
**Katka (KFK) station –**



**Madhosingh (MBS) station –**



**Taraon (TRN) –**



**Syaidpur bhitri (SYH) –**



**Aunihar Jn (ARJ) –**



**Nandganj (NDJ) –**



**5. Provision of Slider Boom at LC Gates : -**

**(23 LC Gates)**

Commissioning of Slider boom at 23 nos. LC gates to cut short the restoration time to zero in event of main boom of gate broken. Slider boom serves the purpose as an additional boom with same interlocking. This saves detention to traffic : -

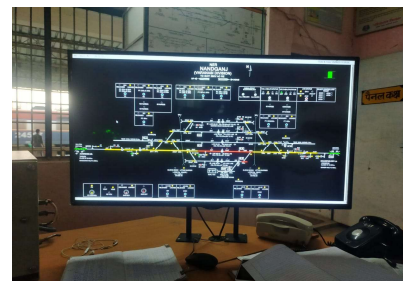
SN	LC no.	KM No.	Station/Section	Date of Commissioning
1.	23 'C'	54/15-16	Tariyasujan Yard	18.08.2020
2.	34 'C'	63/8-9	Tamkuhi Road Yard	18.08.2020
3.	35 'C'	63/13-14	Tamkuhi Road Yard	18.08.2020
4.	36 'C'	64/13-14	Tamkuhi Road Yard	18.08.2020
5.	46 'C'	76/5-6	Dudahi Yard	17.08.2020
6.	48 'C'	77/6-7	Dudahi Yard	17.08.2020
7.	56 'C'	87/0-1	Kath Kuiyan Yard	29.08.2020
8.	58 'C'	88/2-3	Kath Kuiyan Yard	29.08.2020
9.	7 'B1'	179/6-7	Rajwari Yard	30.09.2020
10.	19'C'	196/5-6	Sarnath Yard	02.11.2020
11.	20 spl.	197/3-4	Sarnath – Varanasi section	02.11.2020
12.	21'B'	197/9-198/0	Sarnath – Varanasi section	02.11.2020
13.	22'A'	198/5-6	Sarnath – Varanasi section	02.11.2020
14.	22 spl.	241/9-242/0	Kachwan – Katka section	01.11.2020
15.	24'A'	244/5-6	Katka yard	01.11.2020
16.	25'B'	245/1-2	Katka yard	01.11.2020
17.	30 spl.	252/0-1	Madhosingh yard	01.11.2020
18.	31'A'	253/0-1	Madhosingh yard	01.11.2020
19.	12 spl.	148/3-4	Nandganj yard	01.11.2020
20.	13 spl.	147/2-3	Nandganj yard	01.11.2020
21.	14 'C'	21/5-6	Rasra Yard	07.12.2020
22.	15 'A'	22/7-8	Rasra Yard	07.12.2020
23.	16 'B'	24/7-8	Rasra – Ratanpura section	07.12.2020
<b>Total 23 nos. LC gate</b>				

With this, **23 nos. LC gates** have been provided with Slider boom during the current financial year 2020-21.



**4. Provision of Passenger Platform , Line No-4 & 5, Track and Rack Handling Facilities in Nandganj Station –**

Commissioning of Passenger Platform, Line No-4 & 5, engineering siding Rack Handling for Coaching facilities in the existing yard by introducing a new running line, new Points, new tracks circuits, new relays, shifting of signals and alteration in the existing circuit have been done by Construction organization on 18.06.2020.



**6. Provision of Electric Lifting Barrier at LC Gates : - (01 LC Gates)**

Provision of Electric Lifting Barrier at the following level crossing has been done to facilitate operation of gate by electric –

SN	LC no.	KM No.	Station/Section	Date of Commissioning
1.	29 'C'		Azamgarh (AMH) station	23.05.2020

**7. Commissioning of Dual Axle counter: - (RJI-KDQ & KDQ-SRNT section)**

Commissioning of Dual Axle counter, first in the division, in Rajwari – Kadipur and Kadipur – Sarnath section has been done respectively on 30.09.2020 and 02.11.2020 for both UP and DN direction to ensure redundancy in block proving through axle counters in the section –



**8. Provision of SSDAC/HASSDAC : - (05 Block section)**

Commissioning of Axle counter (SSDAC/HASSDAC) for block proving have been done in the following block section to improve reliability in block proving in the section : -

SN	Block section	SSDAC/HASSDAC	Date of commissioning
1.	Azamgarh – Rani ki sarai section	HASSDAC	23.05.2020
2.	Azamgarh – Sathiyaon section	HASSDAC	23.05.2020
3.	Aunihar – Syaidpur bhitri section UP	HASSDAC	12.10.2020
	Aunihar – Syaidpur bhitri section DN	HASSDAC	12.10.2020
4.	Syaidpur bhitri – Taraon section UP	HASSDAC	12.10.2020
	Syaidpur bhitri – Taraon section DN	HASSDAC	12.10.2020
5.	Taraon – Nandganj section UP	HASSDAC	12.11.2020
	Taraon – Nandganj section DN	HASSDAC	12.11.2020

**9. Provision of UFSBI for Block working : - (02 Block section)**

Commissioning of **Universal Fail Safe Block Interface** in place of token/token less block instruments with the provision of axle counter (SSDAC/HASSDAC) for block proving have been done in the following block section to improve reliability in block working in the section. Quad cable has been used for media for block working and BPAC : -

SN	Block section
1.	Azamgarh – Rani ki sarai section Date of commissioning - 23.05.20
2.	Azamgarh – Sathiyaon section Date of commissioning - 23.05.20



UFSBI – RKS side



UFSBI – SAA side

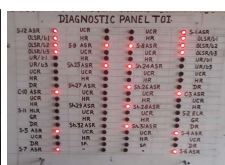
**10. Provision of Diagnostic Panel : - (At 16 stations)**

Provision of Diagnostic Panel at the following stations to help maintainers on duty at the station to localize faults in S&T gears through LED lit indication corresponding to Signal, Points and Track feed Charger status. This work is being done by an effort by our field unit on departmental basis : -

Sadat(SDT), Laxmiganj(LIJ), Kopasamhota(KPS), Gyanpur(GYN), Ekma (EM), Teknivas (TKV), Chhapra gramin (CHPG), Jangiganj (JGG), Thawe (THE), Chapra gramin (CHPG), Jangiganj (JGG), Bhati (BYH), Jhunsi (JI), Ramnathpur (RTR), Handiakhas (HDK) and Saidabad (SDC)



Sadat (SDT)



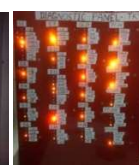
Laxmiganj (LIJ)



Kopasamhota (KPS)



Gyanpur (GYN)



Teknivas (TKV)



Ekma (EM)



Chhapra gramin (CHPG)



Jangiganj (JGG)



Thawe (THE)



Chapra gramin (CHPG)



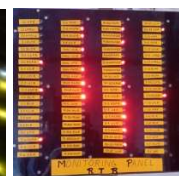
Jangiganj (JGG)



Bhati (BYH)



Jhunsi (JI)



Ramnathpur (RTR)

With this, at 28 stations are, now, provided with Diagnostic Panels in the division to help maintainers to identify faults to ensure speedy rectification.

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**11. Commissioning of Monitoring panel for Track Feed Charger :- (At 04 stns)**

Commissioning of Monitoring panel for Track Feed Charger at the following stations have been done through PFC contact of Track Feed Charger –

a) Khaira (KYH) b) Maraura (MEW) c) Patehri (PEE) d) Unaula (UNLA)

**Khaira (KYH)****Maraura (MEW)****Patehri (PEE)****Unaula (UNLA)****12. Provision of Mini IPS at IBH : -****(02 IBH)**

Commissioning of Mini IPS of **Make – M/s Amar Raja** at the following IBH huts along with back up of 55 nos. 300AH/2V battery sets at each IBH (Total 110 nos.) to improve reliability of power supply at IBH huts –

S. No.	Name of IBH
1	Bhatni – Bhatparani IBH at NNPR
2	Deoria sadar–Nonkhar IBH at ALHR
3	Sivan – Ziradei IBH at Chakra
4	Ziradei – Mairwa IBH at Karchue
	<b>Total 02 IPS at 02 IBH</b>

**DEOS-NRA IBH****BTT-BHTR IBH****SV-ZRDE IBH (Mini IPS)****ZRDE-MW IBH (Mini IPS)**

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## Major Achievements : Signal & Telecom.

Financial Year : 2020 – 21

### Telecommunication

#### 1. Implementation of E-office : -

(BSB Div.)

Inauguration of E-office in the division has been done by DRM/BSB on 28.04.2020 after mapping of employee data on NIC portal. In Varanasi division, S&T department is the first department succeeded to move a file on the E-office platform for vehicle hiring proposal during lockdown. Some snaps are as below : -



Inaugural address by DRM/BSB



Snaps of file movement on E-office platform

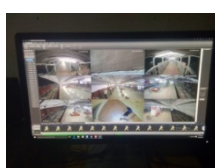
#### 2. Commissioning of CCTV Cameras in VSS project : -

(At 07 stations)

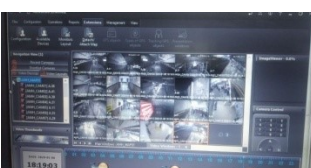
**Commissioning of CCTV cameras for surveillance purpose** of stations and stupendous elements in the station circulating area under VSS project have been done at the following **07 stations** and CCTV cameras are now live. This work was sanctioned in **Nirbhaya fund** costing about 8.34 crores in PH-64 at 13 stations in the division. Out of these 13 stations Gazipur station has already been commissioned. Station wise details of nos. of CCTV camera planned and live now are as under: -

SN	Name of Station	Total nos. of camera planned	Total nos. of camera installed	Total nos. of camera live now
1	Deoria sadar	40	40	25
2	Siwan Jn	40	23	21
3	Mau Jn	40	32	28
4	Azamgarh	35	29	19
5	Belthra road	31	31	12
6	Ballia	40	39	28
7	Chhapra Jn	40	20	18
<b>Grand Total</b>		<b>266</b>	<b>214</b>	<b>151</b>

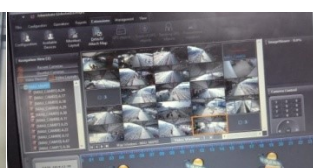
Snaps of some stations with live CCTV cameras –



Ballia station



Azamgarh station



Belthra road station



Mau Jn station

**3. Commissioning of OFC in Dobhi – Jaunpur section : – (44.81 Kms KM)**

- a) Commissioning of OFC in Dobhi – Muftiganj section, 20.21 kilometers has been done on 18.05.2020. All STMs and MUX are operational and circuits like Control and Datalogger are, now, functional on OFC channel.
- b) Commissioning of OFC in Muftiganj – Jaunpur section, 24.60 kilometers has been done on 05.07.2020. All STMs and MUX are operational and circuits like Control and Datalogger are, now, functional on OFC channel.

**4. Inauguration of E-Visitor's Room (ई - संवाद कक्ष) : -**

Inauguration of E-Visitor's Room (ई - संवाद कक्ष) for Rail user in DRM office administrative building has been done by Shri V. K. Panjiar, DRM/BSB and Shri B. K. Singh, Div. Secy./NRMU on 21.07.2020. It is a fully air conditioned room having comfortable seating arrangement providing highest level of ambience and state of the art facilities for communication with divisional officials. This facility eliminates the hassle of taking prior appointments, waiting time and prevention from Covid-19 due to its E-feature.

**Available facilities are –**

- **Intercom facility**  
Number assigned – 266
- **Railway phone**  
Number assigned – 50609
- **Video Conferencing devices**  
18 nos. 1 no. in Visitor's room and 17 nos. in officer's chamber
- **Feature available for Video Conferencing**
  - 1 X 1 Video calling facility
  - 30 Party in 1 room VC facility with Symmetric, Asymmetric and Roll based feature. At present VC facility limited to 18 parties.
  - **Symmetric VC** – Video of all parties available with host.
  - **Asymmetric VC** – Video of all individual party only is available with host.
  - **Roll based VC** – Video of all parties for which Roll assigned by host.





- **TV – 42 Inch**  
For accessing video during VC
- **One server and 09 Access points**  
To manage data during VC all communication infrastructure.
- **WI-FI facility**  
For use of Visitors.
- **Digital clock**  
For showing local time



E-Visitor's room

**Benefits of E-Visitor's (ई - संवाद कक्ष) Room –**

1. It will prevent likely infection of Covid-19 as there is no need to visit officer's chambers by the visitors.
2. Meeting with Union representatives may be done without visiting to chambers.
3. Negotiation/Renegotiation meeting may be done with visiting Contractors.
4. Any meeting related with grievances/official matters without approaching officials.

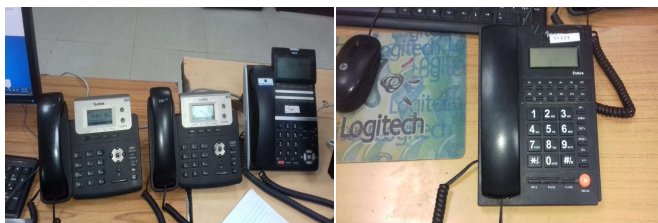
**5. Provision of Alternate Control Room : -**

To face consequences arising due to Covid-19 positive case coming out, an alternate arrangement for setting up of a Control at CCTV control room in ground floor of DRM office administrative building has been done.



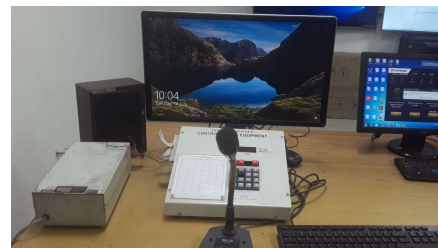
Seating arrangement of 10 person has been done which includes –

- 5 Board Controllers,
- 2 Deputy Controllers,
- 1 Chief Controller,
- 1 TPC Controller,
- 1 TNC.



Communication facilities for Board controller, Chief controller, Deputy controllers, TNC and TPC controller on same phone number and Intercom facility too.

- Board control equipment provided for each boards.
- TPC control board equipment provided.
- Railnet for FOIS is available.
- COA terminals – 06 nos. and FOIS terminals – 02 nos. are under installation including seating arrangements.



**6. Provision Free WI-FI facility at station : -**

**(MFJ & EM station)**

Commissioning of **WI-FI facility** having 4G speed at **Muftiganj (MFJ) and Ekma (EM) stations** by Tata Trust on mobile based user registration and authentication through one time password. With this, **WI-FI facilities have been provided at all 122 stations in the**



**Muftiganj (MFJ)**



**Ekma (EM)**

**7. Surrender of BSNL Phones : -**

**(At 64 Nos.)**

Surrender of **64 nos. BSNL phones** provided at different locations in the division have been done to **save rail revenue to the tune to Rs 3.91 lakhs** in terms of fixed charges and usage charges.

**8. Provision of New Pre activated CUG SIM : -**

**(1047 nos.)**

Provision of **1047 nos. New Pre activated 4G VOLTE CUG SIM** of for use of following departments –

- Mechanical deptt. – 444 nos.
- Medical deptt. – 06 nos.
- Personnel deptt. – 20 nos.
- SS/ASM – 554 Nos.
- DEMU Shed supervisors – 22 Nos.
- Administration – 01 No.

**9. Provision of Thermal Bullet Camera for Covid-19 surveillance/ monitoring : -**

Commissioning of **Thermal Bullet Camera** for Covid-19 surveillance/monitoring purpose has been provided at **3 important locations**, the **Main entry point of DRM's office administrative building, Manuadih** and **Chhapra Jn.** stations in the division to identify symptomatic/asymptomatic entrants in the premises automatically. This system provides the following facilities and features –

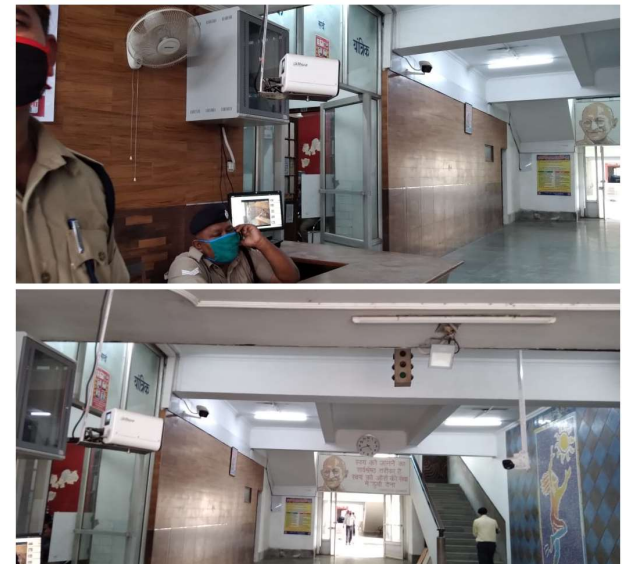
- Visible Lens and Thermal lens for capturing high quality images, body temperature and wearing of face mask by entrants.
- Alarm : Built-in white light and loudspeaker alarm.
- Face recognition system with sensor.
- Storage of Person Snapshot with higher temperature and without mask.
- Temperature measurement Range: 30°C-45°C with measurement accuracy of  $\pm 0.5^\circ\text{C}$ .
- LED display panel for accessing real time video.



**Manuadih station**



**Chhapra Jn. station**



**DRM's office administrative building**



**10. Provision of Talk Back System : -**

**(24 stations)**

Provision of New Counter Communication System have been provided at the following stations –

Station	Nos.	Station	Nos.
Prayagraj Rambagh (PPRB)	04 nos.	Jhunsi (JI)	01 no.
Gyanpur (GYN)	02 nos.	Manduadih (MUV)	07 nos.
Madhosingh (MBS)	01 no.	Jakhania (JKN)	01 no.
Mau Jn (MAU)	05 nos.	Rasra (RSR)	02 nos.
Indara Jn (IAA)	02 nos.	Muhamdabad (MMA)	02 nos.
Azamgarh (AMH)	02 nos.	Chhapra kuchehery (CI)	02 nos.
Chhapra Jn (CPR) - PRS	02 nos.	Chhapra Jn (CPR) - UTS	03 nos.
Chhapra Jn (CPR) - Enquiry	01 no.	Thawe Jn (THE)	03 nos.
Kaptanganj (CPJ) - PRS	01 no.	Gopalganj (GOPG)	01 no.
Deoria sadar (DEOS) - PRS	01 no.	Bhatni JN (BTT) - PRS	01 no.
Siwan Jn (SV) - PRS	01 no.	Ballia (BUI)	02 nos.
Aunrihar (ARJ)	01 no.	Suraimanpur (SIP)	02 nos.
Ghazipur city (GCT)	02 nos.		
Dullahapur (DLR)	01 no.		
<b>24 stations – 53 nos.</b>			

**11. Passenger Amenity work : -**

**(04 station)**

a) As part of expansion of passenger amenity works at way side stations, following passenger amenity work done at **Ekma (EM)**, **Siswabazar (SBZ)**, **Ghughli (GH)** and **Duraundha (DDA)** stations –

- LCD Train Display Board – 01 no. at platform no.-1.
- Auto announcement system.
- Digital clocks – 01 no. at platform no.-1.

b) **Train Display Board** and **Auto Announcement System** at the following stations have been integrated with NTES : - **(18 station)**

SN	Name of station	SN	Name of station
1	Chhapra Jn (CPR)	11	Deoria sadar (DEOS)
2	Gyanpur (GYN)	12	Siwan Jn (SV)
3	Manduadih (MUV)	13	Bhatni Jn (BTT)
4	Gazipur city (GCT)	14	Chitbadagaon (CBN)
5	Mau Jn (MAU)	15	Indara Jn (IAA)
6	Ballia (BUI)	16	Khorasan road (KRND)
7	Aunihar Jn (ARJ)	17	Nandganj (NDJ)
8	Azamgarh (AMH)	18	Salempur (SRU)
9	Lar road (LRD)		
10	Rasra (RSR)	<b>Total 18 stations</b>	

**12. Provision of FCT Phone : -**

**(Kusumhi – Chainwa section)**

Commissioning of FCT Phones at stations after surrendering BSNL phones has been done at the following **16 stations** in **Kusumhi – Chainwa section** in compliance to GM's instruction given during Video conferencing on 02.12.2020.

<b>SN</b>	<b>Name of station</b>	<b>SN</b>	<b>Name of station</b>
1	Kusumhi (KHM)	11	Bhatparani (BHTR)
2	Sardarnagar (SANR)	12	Bankata (BTK)
3	Chauri Chaura (CC)	13	Mairwa (MW)
4	Gauribazar (GB)	14	Ziradae (ZRDE)
5	Baitalpur (BALR)	15	Siwan Jn. (SV)
6	Deoria sadar (DEOS)	16	Pachrukhi (PCK)
7	Nonkhar (NRA)	17	Duraundha (DDA)
8	Bhatni Jn. (BTT) Panel	18	Chainwa (CW)
9	Bhatni Jn. (BTT) station	19	Kaptanganj (CPJ)
10	Piparaich(PPC)	20	Unaula (UNLA)
<b>20 stations</b>			

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The background of the slide features a large, light pink watermark of the Indian Railways logo. The logo is circular, with the words "INDIAN RAILWAYS" in English and Hindi at the top. In the center is a lamp (diya) on a pedestal, flanked by a steam locomotive on the left and a modern train on the right. The entire logo is surrounded by a ring of stars.

# **Innovations**

## **Varanasi Division**



# Innovations : ORRAAMS

## OTP based Relay Room Access Authorization & Monitoring System (ORRAAMS)

Development of OTP based Relay Room Access Authorization and Monitoring System (ORRAAMS) for the first time in Indian Railway to ensure only authorised person may access relay room. This system is cloud based cloud based with analytics feature and it can be accessed from any device. BSB Division has implemented SMS (OTP BASED) RELAY ROOM ACCESS & MONITORING SYSTEM for opening and closing of relay room.



### Dashboard

A screenshot of the ORRAAMS web dashboard. It features a sidebar with navigation icons and a main content area with a table of access requests. The table has columns for S.No, Station, Date, Designation, Module No, Opened At, OTP, and Closed At. One row is visible with data for station 'MENDASAR' and a user '7510402152'.

S.No	Station	Date	Designation	Module No	Opened At	OTP	Closed At
23	MENDASAR	2018-02-22	7510402152	1425	14:25	498764	15:32

## Benefits –

- **Hassle free implementation of JPO**, without human intervention, saving manpower.
- **No waiting time** in opening the relay rooms under OTP system, as presently being faced.
- Phase wise **elimination of all the seven registers**.
- **Dashboard** has the feature to send **daily reports** automatically to concerned officer's email IDs.
- Dashboard to have **historical data & analytics on cloud**, which can be analyzed to get **meaningful insights**. E.g. Purpose wise, designation wise, frequency wise, opening time wise etc.
- **Cloud based system** ensures web access of dashboard on –
  - Any device
  - Any browser
  - Anywhere.
- **Only authorized members** can receive OTP for a particular station. System also keeps track of all **unauthorized requests**.
- **Pinpoints individual** who received OTP to open the Relay Room.
- Internet is not required to request access and get OTP. Only mobile network is required.

# Innovations : Diagnostic Panel

## Diagnostic Panel

Currently, Data loggers are provided at stations and they are networked at central place. During failure, the Control guides the ground staff but it takes long time. To overcome this, Diagnostic Panel has been conceptualized to analyse cause of failure in substantially lesser time through LED lit indications. It is developed in house by division. It enables maintainer to locate failures easily at first instance and help them in rectifying failures. Diagnostic panel helps in early rectification of different types of failures at stations. Till date provided at 29 stations.



## Features –

- **Track Feed Charger health –**

Using potential free contact of all PFC's installed in the yard, Diagnostic panel shows LED indication to indicate failure of TFC.

- **Signal Status –**

- Indication for ASR, UCR & ULR have been given on panel. It will indicate the relay in case of signal failure

- **Point Status –**

Point indication NWKR/RWKR, WJR, NWR/RWR has been provided at the panel. This will provide the position of relay related to point failure

## Benefits –

- Helps maintainer to localize fault at ease.
- Substantial improvement in MTTR.
- It conveys information regarding gears at fault through LED lit indications

# Innovation : E-Visitor's Room (ई – संवाद कक्ष)

## E-Visitor's Room (ई – संवाद कक्ष)

Inauguration of E-Visitor's Room (ई – संवाद कक्ष) for Rail user in DRM office administrative building has been done by Shri V. K. Panjiar, DRM/BSB on 21.07.2020. It is a fully air conditioned room having comfortable seating arrangement providing highest level of ambience and state of the art facilities for communication with divisional officials. This facility eliminates the hassle of taking prior appointments, waiting time and prevention from Covid-19 due to its E-feature.



## Available facilities are –

1. Intercom facility,
2. Railway phone,
3. Video Conferencing devices - 18 nos. 1 no. in Visitor's room and 17 nos. in officer's chamber,
4. TV – 42 Inch,
5. WI-FI facility and
6. Digital clock.

## Benefits –

1. It will prevent likely infection of Covid-19 as there is no need to visit officer's chambers by the visitors.
2. Meeting with Union representatives may be done without visiting to chambers.
3. Negotiation/Renegotiation meeting may be done with visiting Contractors.
4. Any meeting related with grievances/official matters without approaching officials.