GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)

No. 2010/C&IS/Project/RTIS/59 Pt **New Delhi, Dated:08.07.2024**

The General Manager,
Northern Railway,
New Delhi.

Sub: Sanction of the 2nd Revised Estimate of the work of "Real time Train Information System (RTIS)".
Ref: CRIS's letter No. CRIS/HQ/PRJT/64/2023-CN dated 19.03.2024.

The 2nd Revised Estimate costing Rs.1221.76 Crore for the subject work proposed by CRIS vide letter under reference, has been pruned down to Rs.1099.13 crore as per break-up of cost attached as 'Annexure'.

Accordingly, Sanction of the President is hereby communicated for the 2nd Revised Estimate of the work of **"Real time Train Information System (RTIS)"** at the cost of Rs.1099.13 crore (Rupees One Thousand Ninety Nine Crore and Thirteen Lakh only).

It should be ensured that no additional O&M expenditure should be incurred in this project.

This work may be carried out in an open, competitive, transparent, fair and cost effective manner after drawing up 'right-sized', 'vendor and technology neutral' technical specifications and other tender conditions.

This issues with the concurrence of Finance Directorate of Ministry of Railways.

Signed by
Bharat Bhushan Harit
Date: 08-07-2024 20:32:25
(Bharat Bhushan Harit)
Director (C&IS)

No. 2010/C&IS/Project/RTIS/59 Pt **New Delhi, Dated: 08.07.2024**

Copy to:

1. **Principal Financial Adviser, Northern Railway, New Delhi.**
2. **Principal Director of Audit, Northern Railway, New Delhi.**
3. **The Dy. Comptroller and Auditor General of India (Railways), Room No. – 224, Rail Bhawan, New Delhi.**

Signed by Sanjay Kumar Singh
Date: 08-07-2024 20:37:14
Reason: Approved
For Member Finance

Copy to :

1. **The Chief Administrative Officer/FOIS, CRIS Complex, Chanakyapuri,New Delhi.**
2. **The Managing Director, CRIS, Chanakyapuri, New Delhi.**
3. **F(X)-II and Budget Branches of Railway Board.**

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Annexure

No. 2010/C&IS/Project/RTIS/59 Pt **New Delhi, Dated: 08.07.2024**

2nd Revised Estimate of the work of "Real Time Train Information System (RTIS)"

S. No.	Item Description	Amount (Rs.)
1	**Loco device**	
a	Loco device comprising of MSS transceiver module, dual 4G/3G modems, GAGAN modules, RF module, Antennae, compute resources, OS etc.	2,49,88,54,800.00
b	Material damage and rejection @5%	12,49,42,740.00
c	**Installation and Training charges**	
(i)	Cost of loco device installation/mounting in locomotives	31,74,69,600.00
d	2nd Year Warranty support for Loco device	38,43,64,733.00
e	3rd Year Warranty support for Loco device	41,95,71,860.00
f	Updation and Handholding Support for loco devices for 4th Year	37,71,65,880.00
g	Updation and Handholding Support for loco devices for 5th Year	41,10,47,910.00
h	Updation and Handholding Support for loco devices for 6th Year	44,79,68,430.00
	Sub Total (Item no. 1)	**4,98,13,85,953.00**
2	**Main DC & DR DC system for RTIS**	
a	Connectivity with Central Server and interfacing with CRIS Network (Connectivity between CRIS and Delhi Earth Station (DES) for an interim period of 01 Year. 02 E1 from SP-1 and 02 E1 from SP-2. Total 04 E1 links.)	500000.00
b	Servers	98,21,256.00
c	Enterprise Linux Server OS	16,60,428.00
d	IP Based KVM Switch	5,71,860.00
e	L-2 Switches	20,37,792.00
f	Racks	4,57,600.00
g	Routers	51,74,910.00
h	Layer-3 Switches with 48 x10G ports	2,26,42,150.00
i	Firewall (External, UTM with Anti- virus, Anti-Spam, Mail content filtering/Anti spyware filtering etc)	93,76,065.00
j	License cost of NMS(Network Management System), SIEM, HIPS and VA for Servers	16,20,000.00
k	Security audit including certification charges	2,10,00,000.00
l	Storage system	78,56,198.00
m	Central Hardware / Software Installation/Implementation and overall System Integration including technical support as well as OEM support/ resources required (excluding OEM mandays for RHEL and RDBMS)	74,38,932.00
n	Resident Engineers for system monitoring & maintenance for first year (for Primary DC and DR DC sites)	6,01,10,736.00
o	Collection of spatial coordinates at about 250 Stations/ Loco Sheds/Trip Sheds	63,04,250.00

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p	Main DC & DR DC System Updation and Handholding Support for 2nd year to 6 year (@ 10% for all items from 2a to 2o above except Item No. 2k and 2n)	3,77,30,720.50
	Sub Total (Item no 2)	**19,43,02,897.50**
3	**MSS Hub System & Satcom bandwidth**	
3.1	MSS Hub System(including NMS, Antenna sub- system, RF, IF & Baseband equipment, civil work for mounting of Antenna & setting up Hub RF room along with electrical/air-conditioning requirements)	11,76,36,098.00
3.2	Space Segment / Satellite bandwidth charges for one year to be paid to NSIL for usage of upcoming satellite (GSAT-N3- successor of existing GSAT-6 satellite), 06 years charges included	2,01,92,34,000.00
3.3	Updation and handholding support charges for MSS Hub System for 2nd to 6th year @ 10% of Item 3.1	5,88,18,049.00
	Sub Total (item no 3)	**2,19,56,88,147.00**
4	**GPRS connectivity including SIM rentals for one year**	
a	4G/3G SIM rentals for one year (2SIMs per loco device)	7,02,71,400.00
a1	4G/3G SIMs rental for 2nd year to 6th year	10,35,45,000.00
b	04 Mbps backhaul link between MSPs GPRS Hub and RTIS Primary DC to be hired from 02 different service providers	53,69,664.00
b1	04 Mbps backhaul link between MSPs GPRS Hub and RTIS primary DC to be hired from 02 different service providers for 2nd to 6th year	38,08,856.00
c	Backhaul link between MSPs GPRS Hub and RTIS DR DC to be hired from each of 02 different Mobile service providers. 08 E1 from MSP-1and 08 E1 from MSP-2.	53,69,664.00
c1	Backhaul link between MSPs GPRS Hub and RTIS DR DC to be hired from each of 02 different Mobile service providers. 08 E1 from MSP-1 and 08 E1 from MSP-2 for 2nd to 6th year	2,68,48,320.00
d	Links for data replication between RTIS Primary DC and DR DC to be hired from each of 02 different service providers (SP). 02 E1 from SP-1 and 02 E1 from SP-2. Total 04 E1 links.	13,64,000.00
d1	Links for data replication between RTIS Primary DC and DR DC to be hired from each of 02 different service providers (SP). 02 E1 from SP-1 and 02 E1 from SP-2. Total 04 E1 links for 2nd to 6th year.	67,12,080.00
e	Links between RTIS DR DC in SC and ISRO's MSS Hub in Ahmedabad to be hired from each of 02 different service providers (SP). 08 E1 from SP-1 and 08 E1 from SP-2. Total 16 E1 links.	54,56,000.00
e1	Links between RTIS DR DC in SC and ISRO's MSS Hub in Ahmedabad to be hired from each of 02 different service providers (SP). 08 E1 from SP-1 and 08 E1 from SP-2. Total 16 E1 links for 2nd year to 6th year	2,68,48,320.00
	Sub Total (Item no. 4)	**25,55,93,304.00**
5	**Software modification required in RTIS for COA integration**	
a	Hub NMS software development	2,08,60,000.00
b	Development of RTIS Software (Loco devices, CLS & LMCS)	2,14,42,349.00
c	Handholding support for RTIS software for first year (Loco devices, CLS, LMCS & Hub NMS)	6,80,854.00

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d	Annual Maintenance support for RTIS Software (Loco devices, CLS, LMCS & Hub NMS) for first year	6,80,854.00
e	Updation/Upgradation and Handholding support of RTIS Software for 2nd year to 6th year	21,99,23,085.00
	Sub Total (item no. 5)	**26,35,87,142.00**
6	**Software modification required in COA software for COA integration with RTIS**	
A	**Hardware including OS**	
a	Front End /Middleware/App Server	98,21,256.00
b	Database server	47,21,140.00
c	Enterprise Linux Server OS	23,52,273.00
d	License for OS & SAN clustering for DB Servers	3,44,425.00
e	Middleware licenses for Front End/Middleware/App Server	9,38,23,236.00
B	**RDBMS Software**	
f	RDBMS Software	11,62,32,480.00
C	**CAS DR HW**	
g	Server for CAS	49,10,628.00
h	Enterprise Linux Server OS for CAS Servers	8,30,214.00
i	License for OS & SAN clustering for CAS Servers	2,75,540.00
j	CAS DR SW	8,00,00,000.00
	Security Infrastructure Upgradation	
k	Server Load Balancer	1,08,62,840.00
l	DDoS protection system	74,40,000.00
m	Structured LAN Cabling cost	18,76,422.00
n	Datacenter facility cost	5,07,60,000.00
o	Manday Support (Red Hat) for 20 days(10 days for Primary DC site and 10 Days for DR DC site)	13,46,460.00
p	OEM Mandays for RDBMS for 60 days(30 days for Primary DC site and 30 Days for DR DC site)	34,23,180.00
	Sub Total (Item no. 6)	**38,90,20,094.00**
	Updation/upgradation and handholding support of hardware/software of Item 6	
q	Updation and handholding support for hardware (Item No. a,b,g,k, l,m) @ 10% of the cost per year for 2nd to 6th year	1,98,16,143.00
r	2nd to 6th year cost for updation/upgradation and handholding support of system software (Item Nos. c,d,e,f,h,i,j) @15%	23,11,65,714.00
s	5 years handholding cost of data centre facility (item No. n)	15,00,00,000.00
	Sub Total (Item q+r+s)	**40,09,81,857.00**
	Total (Item No. 6)	**79,00,01,951.00**
7	**Hardware up-gradation for integration of COA with RTIS**	
a	**COA Software customization**	1,75,17,400.00
	Total (Item no. 7)	**1,75,17,400.00**
	(A)Total (Item no 1 to 7)	**8,69,80,76,794.50**
8	Engineering Charges	62,00,000.00
9	Electrical charges	20,59,000.00
	(B)Total (Item no 1 to 9)	**8,70,63,35,794.50**
10	**CRIS and Railway Charges @10%**	**87,06,33,579.45**

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10.1	CRIS charges @ 7% of Total D&G Charges	**60,94,43,505.62**
10.2	D&G Charges for Railway Charges @ 3% of Total D&G Charges	**26,11,90,073.84**
	(C)Total Project Cost (in Rupees) excluding GST (Sum of item no. 1 to 10)	**9,57,69,69,373.95**
	Total Project Cost (in Rupees) of all items except item nos 3.2 and 10.2	**7,29,65,45,300.12**
	(D)GST @18% for all items except item no. 3.2 and 10.2	**1,31,33,78,154.02**
	(E)GST @5% for item no. 3.2	**10,09,61,700.00**
	Total Project Cost (in Rupees) with GST for RTIS implementation (C+D+E)	**10,99,13,09,227.97**
	Rounded Off	**Rs. 1099.13 Crore**

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