

(भारत सरकार) GOVERNMENT OF INDIA
(रेल मंत्रालय) MINISTRY OF RAILWAYS
(रेलवे बोर्ड) RAILWAY BOARD

No.2021/SIG/Estimates/DPR (e file-3363771)

Dated 17.12.2024

GM,

All Zonal Railways.

Sub: Checklist & Project Appraisal format for S&T sub estimates submitted with DPR.

Ref: i) This office Letter of even no. 25.08.2022 & 22.06.2023.

ii) This office Letter No. 2023/GS/SIG./Typical Abstract Estimate dated 01.05.2023.

In continuation to above referred letters, pls find enclosed revised technical checklist, appraisal checklist & project appraisal format for S&T DPRs/estimates for appraisal of projects.

Duly filled copy of these checklists & project appraisal format shall be included invariably in all future S&T DPRs/sub-estimates.

This issues with the concurrence of Associate Finance & approval of Board (MI).

DA: As above

(Jonal Chaudhary)
Director/Gati Shakti (S&T)
Railway Board

Copy to:

- i. PCSTEs, PFAs and CAO/Cs, All Zonal Railway, for kind information & n/a.
- ii. ED/GS/Civil-I and ED/GS/Electrical for kind Information and n/a for composite works under their respective Plan Heads.

For Associate (Finance) Railway Board

Appraisal checklist

S.No.	Item	Certified By Railway
1.	Technical checklist of Signaling & Telecom as applicable is duly filled and attached with proposal.	
2.	Estimate is based on Latest SOR (Mention year also) or Latest LARs & Allocation wise break up is shown.	
3.	Certification of quantities is based on field requirement of the work as per plan and drawings. CRRM, if any, is considered.	
4.	All the provisions in the estimate are as per Board's circulars issued from time to time.	
5.	Commissioning date of Stations / Gears proposed for replacement is duly mentioned.	
6.	Proper justification for proposal has been brought out in case, codal life is not over.	
7.	DPR is enclosed for projects costing more than 50 Crores in the format prescribed by Boards L No. 2021/SIG/Estimates/DPR (efile-3363771) dated 24.02.23 or latest. For composite works S&T chapter in DPR is in standard format as per Boards L No 2022/W-I/Genl/DPR Performa(e-3404238) dated 13.12.2023 or latest.	
8.	There is no duplicity in the scope of proposed work with any other sanctioned or proposed work.	
9.	There is no willful splitting of work in the proposal.	
10.	Cost of proposal is not breaching the limit of Sub-umbrella or Umbrella for the zone as applicable for the proposal.	
11.	RoR (Exceptions mentioned under Para 202 of IRFC Vol I) of the proposal covered under Capital head duly approved by finance is enclosed. Excel Sheet of Cash flow shall also be enclosed.	
12.	Duly vetted PDF copy of Estimate is enclosed along with the proposal.	
13.	System Map (In Colour) showing proposed works of ABS, CTC, KAVACH & Double Distant along with already sanctioned/functional work in the vicinity is enclosed.	
14.	Name of the stations is mentioned in full form with code in bracket.	
15.	For the works pertaining to Level crossing gates, Joint certificate of Engg. & S&T that LC gates covered under the proposal are not planned for closure.	
16.	Planning for elimination of LC gates along with works of doubling/multi-tracking/GC has been brought out in DPR.	
17.	For ABS & other throughput enhancement works present line capacity & Line capacity after project completion is clearly mentioned.	

18.	Target date of completion (TDC) of proposed work is clearly mentioned.	
19.	Unit cost estimation and key elements have been taken in accordance with Board Letter 2023/GS/SIG./Typical Abstract Estimate dated 01.05.2023 or latest & reason for variation if any.	
20.	The proposed work is in consonance with cannons of financial propriety.	
21.	It is certified that there is no mismatch between checklist/Project appraisal format, DPR and estimate.	
22.	Tentative SIP/Signalling schematic for each station has been enclosed in DPR.	
23.	Standard circuits issued by RDSO will be used for execution of works for less than 100 routes.	
24.	For PH-33 works, Gantt Chart showing project schedule shall be enclosed in DPR.	
25.	Whether TOR of consultant included conducting survey for identifying cable route plan & utility shifting.	
26.	Provision for utility shifting has been made in DPR & estimate of project.	

To be Signed By Concerned CSTE/C or CSTE/Project.

Technical Checklist for Signaling Sub-estimates submitted with DPRs & Proposalssubmitted on IRPSM for sanction of Board.

SN	Items	Policy/Guidelines	Yes/No	
1	Provision of PI/EI/RRI	As per Railway Board's policy, provision of EI should be made in all estimates. Railway Board's letter No. 2003//Sig/G/5 dated 28.04.2016. Centralized/Distributed EI up to 100 routes based on physical layout of yard, complexity involved, maintainability aspect etc. (letter No. 2021/Sig/25-Conf/5/SSC dated 26.02.21 of Special SSC).		
2	Point Machine	Non-Trailable Electric Point Machines 143-mm throw with internal locking and non-trailable electric point machines 220 mm. (IRS - S 24-2002 or latest spec).		
3	LED Signal	Procurement of Main Signals and subsidiary signals should be as per RDSO specification i.e., RDSO/SPN/199/2010 Rev 1.0 and of RDSO/SPN/153/2011 ver. 4.1 respectively or as per latest Spec.		
4	Cable	Provision of cable as per extant policy		
		a.	6 core X 1.5 sq. mm. Copper conductor cable.	
		b.	12 core X 1.5 sq. mm. Copper conductor cable.	
		c.	24 core X 1.5 sq. mm. Copper conductor cable.	
		d.	2 core X 2.5 sq. mm. Copper conductor cable.	
		e.	2 core X 25 sq. mm. Aluminum conductor power cable.	
		f.	2 core X 70 sq mm power cable.	
		g.	6 Quad cable.	
		h.	OFC.	
5	Power Supply (IPS)	There should be provision of IPS or approved power supply arrangement.		
6	BPAC	Dual detection should be there. JPO issued by Board (ML & MT) vide letter No. 2015/Sig/PLN/Pt. dated 02.11.2005.		
7	DAC	Redundancy to be provided as per extant guideline.		
8	Provision of Automatic signaling.	To be provided as per policy issued vide L No ABS No 2023/ABSCOMMITTEE/RailwayBoard dated 16.11.2023.		

9	Datalogger	To be provided as per latest RDSO spec.	
10	Double Distant	To be provided as per Boards L No 2017/Mobility/2/3 dated 12.06.18.	
11	Fire alarm and smoke detector system	To protect from fire the panel interlocking equipment, indication cum operating panel, S&T equipment's in Panel room, Relay room, power supply room, battery room, diagnostic panel room and OFC room shall be provided with Fire alarm and smoke detection system as per extant policy.	
12	Automatic Fire Detection & Suppression system	As per Rly Board's policy letter no. 2013/Sig/Specifications dated 22.06.2015 or latest, firefighting equipment shall be kept in the power supply equipment room. Automatic fire suppression system along with Automatic fire detection & alarm system may be provided at stations with more than 400 routes or as per requirement in accordance with extant guidelines.	
13	Interlocking of LC Gates	To be done as per guidelines. Provision of Emergency Sliding Boom should be made in the estimate.	
14	Standard of Interlocking	Standard of Interlocking shall be as per extant guidelines.	
15	Cost of Alteration	In sections where KAVACH/ABS/CTC is functional/sanctioned the cost of alteration in KAVACH/ABS/CTC has been included in estimate.	
16	Cable laying & Trunking	Laying of cable should be inside prefabricated/pre cast cable ducts as per Boards L No. 2022/GS/IR/Cable laying Policy dated 29.03.23 or latest.	
17	Dept. Charges	To be taken as per Rly Board's policy dated 28.12.2022 or latest with Contingency @ 1%, Dept Charges @10.05% for S&T projects, for Environmental related works @0.5% lumpsum (for PH-11, 14, 15, 30 & 42) & Sports charges @0.1% lumpsum.	

To be Signed By Concerned CSTE/C or CSTE/Project.

Checklist for Telecom Sub-estimates submitted with DPRs

SN	Items	Policy/Guidelines	Yes/No
1	IP-MPLS, IP-Exchange and Data Network for PRS, UTS, FOIS and SCADA	To be followed Railway Board's policy vide letter no. 2011/Tele/9(2)/1 dated 25.02.2020 as Telecom Circular no.4/2020 and Revised Technical Advisory Note Ver 2.0 issued by RDSO vide letter No RDSO-TELE0LKO(TECH)/8/2020-Telecom Directorate/RDSO dtd 29.03.2023 or latest.	-
1a	Provision of IP-MPLS System at stations	All future works/replacement of SDH/PDH works, including works where tender is yet to be floated shall be with IP-MPLS standards.	
1b	Provision of IP Exchange	All future exchange works/replacement shall be done with IP exchanges. All exchanges can be integrated into one at the Divisional level, where feasible, with provision of suitable bandwidth and ring connectivity/protection. In addition to that, for IP-Exchange, telecom Circular 04/2022 should be followed.	
1c	Provision of Data network	The telecom backbone of all future works/replacement of Data networks such as PRS/UTS/FOIS/SCADA shall be with IP-MPLS equipment by providing separate VPN network, if required.	
2	Provision of VOIP based TCCS at station	As Para 5.4 of Telecom manual, VoIP Based TCCS among the various control communication systems to be used in Indian Railways as per RDSO specification.	
3	LC gate communication	Phone communication to all manned level crossing gates controlled from the station and it should be a part VOIP TCCS with voice logging facility.	
4	25 W VHF set and 5W VHF sets	25W VHF sets with proper standby power supply at each station and 5 W walkie-Talkie set as per requirement and 25W VHF sets at stations should be a part VOIP TCCS with voice logging facility.	
5	Provision of LTE in section where Kavach is provided	Vide Board Letter No 2020/Tele Dev/Umbrella works dtd 21.10.2021, Provision of LTE in section where Kavach is provided/being provided.	

6	Cable	<p>Usage of cable as per Telecom manual</p> <p>6 Quad cable (Quad Cable 0.9 or 1.4 mm conductor dia. as per IRS specification No. IRS:TC 30/05. 1.4 mm conductor dia. cable is used for longer block sections longer than 12 kms.)</p> <p>Multi pair (from 10 pairs to 200) Multi Dia (0.5mm/0.63mm/0.9mm) PIJF (Polythene insulated Jelly Filled) Cable as per IRS specification No. IRS:TC 41/97 used for exchange subscriber lines or branch cables branching off from the main Quad cable</p> <p>Twisted Pair Switch Board Cable of sizes 0.5 mm /0.6mm copper conductor dia. as per IRS/TEC specification used for indoor applications such as distribution to various telephone subscribers in a building, MDF to exchange wiring etc.</p> <p>OFC (24/48 Fibers Optical Fibre Cable as per latest RDSO specification) to be laid in HDPE pipe.</p> <p>It is preferred that all the Signalling and Telecom circuits should be planned on OFC.</p> <p>Note: Since 6 quad cable and OFC are also a part of Signalling system. It should be ensured that there should not be duplicity of cable.</p>	
7	Power Supply (IPS)	<p>All Telecom Equipment's shall be provided with a reliable Power Supply system including battery with latest RDSO specifications/TAN/TEC specifications/latest guidelines.</p>	
8	IP based Video Surveillance System	<p>CCTV system at stations - As per RDSO spec (Spec no RDSO/SPN/TC/65 /2021 Rev 6.0 issued by Tele Dte/RDSO or latest).</p> <p>CCTV at non critical locations- To be procured either RDSO spec or Rly's own specifications with approval of GM as per RB letter No 2017/Tele/3(8)/1 dtd 28.11.2017.</p> <p>CCTV system in Divisional & Zonal Hospitals- Type of system and its specifications to be decided by Zonal Rlys as per RB Letter No 2018/Trans Cell/Health/MR Review dtd 14.09.2018.</p> <p>CCTV at Railway offices- Type of system and its specifications to be decided by Zonal Rlys as per RB letter No 2018/Tele/6(4)/1 dtd 16.01.2020</p> <p>CCTV system in relay rooms- an extension of the existing/proposed CCTV system at stations as RB</p>	

		Letter No 2017/Tele/3(8)/1 Pt-1 dtd 20.04.2020 CCTV at RPF Thana/Posts- an extension of the existing/proposed CCTV system at stations as RB Letter No 2020/Sec(CCB)/210/CCTV dtd 23.11.2021.	
9	Passenger Information System at station	Followed Comprehensive instructions for provision of Passenger Amenities and user facilities at Stations issued vide Lt.No.2018/LM(PA)/03/06 Dtd. 09.04.2018	
10	Fire Alarm system at Telecom Installations	As per Rly Board's policy letter no 2019/Tele Dev/ Fire Alarm dtd 27.07.2019, Automatic Fire Detection & Alarm System is to be provided as per RDSO specification No. RDSO/SPN/217/2018 ver. 2.0 or latest at Telecom installations like major Exchanges, Test Room/Telecom Control Room, Data Centre locations, CCTV Control & Equipment Rooms, Main Switching Centre (MSC) & Base Station Controller (BSC) of MTRC, main QFC centers /Quad repeater stations, Satellite Hubs, etc.	
11	Tunnel communication	In Section where Tunnel exist, Tunnel communication is to be provided as per RDSO spec (Spec no RDSO/SPN/TC/109 /2019 Rev 0.0 issued by Tele Dte/RDSO or latest).	
12	Utility shifting of Telecom assets	Like in doubling, Gauge conversion project, existing utility pertaining to telecom cables and other accessories have to be shifted, Hence, its shifting provisions should be ensured	
13	Remote diagnostic & predictive maintenance tool for Telecom assets.	To ensure uninterrupted communication services, 24x 7 working of Telecom assets has to be ensured. Hence, Provision of Remote diagnostic & predictive maintenance tool for Telecom assets should be ensured.	
14	Dept. Charges	To be taken as per Rly Board's policy dated 28.12.2022 or latest with Contingency @ 1%, Dept Charges @10.05% for S&T projects, for Environmental related works @0.5% lumpsum (for PH-11, 14, 15, 30 & 42) & Sports charges @0.1% lumpsum.	

Signature of SAG officer In-charge

Project Appraisal Format
(To be submitted along with checklist)

1. Name of Project& Plan head :
2. Total Cost of Project and allocation :
3. FIRR of project (For PH 11,15 & 16):
4. Brief Scope of Signalling & Telecom Work:
5. For PH 33 works, justification of project may be brought out in five bullet points.
6. Cost of Signaling Work (Including Departmental charges):
7. Cost of Telecom Work (Including Departmental charges):
8. Total cost of S&T Work(Including Departmental charges):
9. No. of stations:
10. No. of LC gates:
 - a. Engg. LC gates-
 - b. Traffic LC gates-
11. Length of Section :
12. Whether part of HDN/HUN/3000MT routes :

(Signature of in charge SAG officer)

13. Details of Signalling Sub-systems.

A. Station Interlocking:

S. No.	Type	No. of Stations	No. of Running Lines	Architecture of EI	Cost of Signaling Work/Station (Including Departmental charges)	Rate reference	Total cost (Including Departmental charges)
a	Up to 100 Routes						
b	100 to 200 Routes						
c	200 to 500 routes						
d	More Than 500 Routes						
e	Alterations in existing stations						
							Total

B. Details of Kavach, ABS, CTC, IBS, Engg. LC gate

Sr No.	Signalling sub system	Unit	Per Unit Cost (Including Departmental charges)	Rate Reference	Total (Including Departmental charges)
a	Kavach	Rkm			
b	ABS	Rkm			
c	CTC	Rkm			
d	IBH	Per IBH			
e	Interlocking of Engineering LC Gate	Per LC			
f	Kavach alteration	Rkm			
g	CTC alteration	Rkm			
					Total

(Signature of in charge SAG officer)

14. Details of Telecom Sub-systems

Sr No.	Telecom Sub-system	Unit	Per Unit Cost(Including Departmental charges)	Rate Reference	Total (Including Departmental charges)
a	OFC and Quad Cable for telecom	Rkm			
b	LTE	Rkm			
c	Tunnel Communication	Km			
d	IP-MPLS	Per Station			
e	CCTV	Per Station			
f	IPIS	Per Station			
g	PA System	Per Station			
h	VoIP based TCCS	Per Station			
i	Other				
				Total	

15. Type of Block Working:

16. Train Detection in the Yard (DC Track/ MSDAC):

17. Detail of High Value Signaling items in the Estimate.

S No.	Item	Qty.	Unit Cost	Rate reference	Total cost
a	Signaling Cable				
b	Power cable				
c	Quad cable				
d	EI				
e	Indoor relays				
f	Maint. Free earth				
g	BPAC S/L or D/L with UFSBI				
h	SSDAC/HASSDAC				
i	MSDAC (Per DP cost)				
j	IPS				
k	Datalogger				
l	Cable duct (per meter) a) Station section b) Block section				

(Signature of in charge SAG officer)

18. Detail of High Value Telecom items in the Estimate

S No.	Item	Qty.	Unit Cost	Rate reference	Total cost
a	Quad Cable (Tele)				
b	OFC (Tele)				
c	EPC, e-Node B and other items in LTE System				
d	LER and LSR in IP-MPLS System				
e	Communication server and other items in VOIP based TCCS				
f	Passenger Amenity item				
g	IP-Exchange				
h	others				

(Signature of in charge SAG officer)

Station wise summarized position

SN	Name of Station (No. of routes)	Total Cost of Signalling at Station	EI/ EI modification		Sig. Cable		Quad Cable		MSDAC		Cable Duct		Other high value items like BPAC, MF Earth, IPS		Total cost of high value item	Remark
			Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Cost	Cost		
1																Remarks to clearly mention reason for higher cost at given station.
2																
3																
	Total															

S No.	Name of station/section	Total telecomm Cost at station/section	OFC with HDPE		Quad Cable (Tele)		IP-MPLS		MF Earth (Tele)		Passenger Amenity		Total cost of high value item	Remark
			Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost	Qty	Cost		

(Signature of in charge SAG officer)