

Dedicated Freight Corridor Corporation of India Limited
(A Government of India Enterprise)
Addendum No.3 Dated 25.09.2013
Addendum / Amendments to the Bidding Documents for

DESIGN AND CONSTRUCTION OF SIGNAL AND TELECOM WORKS FOR DOUBLE LINE RAILWAY INVOLVING TRAIN DETECTION SYSTEM, TRAIN PROTECTION & WARNING SYSTEM, ELECTRONIC INTERLOCKING IN STATIONS, AUTOMATIC SIGNALLING IN BLOCK SECTIONS, INTERLOCKING OF LEVEL CROSSING GATES, DISPATCH TELEPHONE SYSTEM, FIBER OPTIC COMMUNICATION SYSTEM, GSM(R) SYSTEM, DIGITAL ELECTRONIC EXCHANGE SYSTEM, MASTER CLOCK SYSTEM AND VIDEO SURVEILLANCE SYSTEM FOR REWARI – MAKARPURA SECTION AND TRAIN MONITORING AND DIAGNOSTIC SYSTEM FOR DADRI – JNPT SECTION INCLUDING TESTING AND COMMISSIONING ON DESIGN-BUILD LUMP SUM PRICE BASIS OF WESTERN DEDICATED FREIGHTCORRIDOR

SIGNALLING AND TELECOMMUNICATION WORKS CONTRACT
(Rewari – Makarpura of Phase 1 and part of Phase 2)

Ref.: ICB No. ST P-5

SI. No.	Volume	Section/ chapter	Page No.	Clause / Para No.	Item	Amendments in the Bidding Documents
83.	III Part 2	1	8	1.3	Employer's Drawing	Word "Employer's" is replaced by "Reference"
84.	III Part 2	1	8	1.3.1	Employer's Drawing	In first line of sub-clause , words "Employer's drawings consist of Reference ---" are replaced by "Reference drawings consist of" At the end of the sub-clause add sentence " <i>All drawings are indicative and for reference.</i> "
85.	III Part 2	5	21	5.3.3.1.4	auto location hut	In the third line of sub-clause after word SCADA, and before word etc add words "Signalling Equipment Rooms & <i>auto location huts for signaling systems</i> "
86.	III Part 2	5	28	5.3.10.4.1	OFC Communic ation System	In the second line of sub-clause after word OFC and before word system add word "Communication"

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87.	III Part 2	5	30	5.4.3.8	Link	In the second line of sub-clause word “Ling” is replaced by word “Link”
88.	III Part 2	5	33	5.5.3.2.1	G.709 deleted.	In the second line of sub-clause words “---G.707 to G.709, G.781to G.784 -----” are replaced by word “---G.707, G.781, 783, G.784---”
89.	III Part 2	5	36	5.6.2	System expansion	<p>In the first line of sub-clause words “in the OFC network” are replaced by “in the main OFC Communication system network”</p> <p>In the second line after word “nodes” add words “and add more nodes of phase 2 in the SDH rings of phase 1”</p> <p>In the third line of the sub-clause after words “---central equipment“ add words ”It shall also be possible to add in the secondary OFC communication network about 90 secondary nodes and equal numbers for future expansion beyond phase 2.</p> <p>In the third and fourth lines of sub-clause words “including atleast one number of ADM1” are deleted.</p> <p>At the end of the sub-clause sentence “The size of SDH nodes at stations and in OCC per clause 5.3.4.2 above shall take into account the requirements of phase II also” is deleted.</p> <p>New sentence “Phase 2 section Rewari to Dadri has 5 stations while phase 2 section Makarpura to JNPT has 12 stations as planned at present. Provision in the SDH network of phase 1 shall be made such that it will be possible to add SDH nodes of phase 2 to the SDH rings designed for phase 1 for an integrated single network controlled and managed from the NMS provided in phase 1.” Is added at the end of the sub-clause.</p>
90.	III Part 2	6	37	6.1.2		<p>In the third line of the sub-clause after words “---v7.3.0” add words “and latest)”</p> <p>Also in the third line of the sub-clause after words “---(SRS v15.3.0” add words “and latest)”</p> <p>In the sixth line of sub-clause after word “specification” add words “Requirements marked as mandatory in EIRENE FRS & SRS are to be complied fully”</p> <p>In lines 3, 4 & 5 of the sub-clause words “and RDSO Specification of Mobile Train Radio Communication System (GSM-R) No. RDSO\SPN\TC\88\2008 and latest” are deleted.</p>

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91.	III Part 2	6	39	6.3.1.1 and 6.3.1.1(6) d)	Core network to be as per ETSI standard for Rel-4 & ETCS level 2 speed 220 km/h	In the third line words “(ETSI) Global System for Mobile (GSM) Standards” are replaced by “(ETSI)TS 103 066 Version 1.1.1 or latest for Rel-4 Core Network requirements for GSM-R, Global System for Mobile (GSM) Standards for BSS” In the fifth line after words “SRS documents” sentence “Tenderer shall submit, along with his bid, certificates, from European Commission’s notified certification bodies, confirming compliance to the standards in respect of the offered core and radio equipment.” is added. (6) d) Words “---120 km/h.” are replaced by “----220 km/h.”
92.	III Part 2	6	42	6.3.9.3	220 km/h	In the second line Words “---120 km/h.” are replaced by “----220 km/h.”
93.	III Part 2	6	48	6.3.9.13.2		In the second line of the sub-clause after Words “– cab electronics” add words “ <i>and other radio communication links operating in the same band of frequencies</i> ”
94.	III Part 2	6	55	6.3.13.1	220 km/h	At the end of the sub-clause words “120 km/h” are replaced by “220 km/h”
95.	III Part 2	6	55	6.3.13.3 (2) & (7)	DFCCIL Headquarters deleted and IR tracks and IR stations included Sub-clause (2) and (7)	In sub-clause 6.3.13.3 (2) at the end after words “---- this contract” add words “along each IR track and IR station parallel to WDFC track alignment. RF coverage of IR tracks and stations in the zones of detours is excluded;” In sub-clause 6.3.13.3 (7) words “----DFCCIL Headquarters” at the end are deleted.
96.	III Part 2	6	57	6.4.6.1	Interoperability certificate	At the end of the sub-clause sentence “Tenderer shall submit a current and valid Interoperability certificate to this effect from recognized/notified certifying body” is added
97.	III Part 2	6	57	6.4.6.2	IR	In the second line of the sub-clause word “etc” is added after word “corridors” In the second line of the sub-clause word “DFCCIL” is replaced by “DFCCIL/IR”
98.	III Part 2	6	57	6.4.9.1	220 km/h	In the second line of sub-clause Words “---120 kmph.” are replaced by “----220 km ph.”

Sl. No.	Volume	Section/ chapter	Page No.	Clause / Para No.	Item	Amendments in the Bidding Documents
99.	III Part 2	6	58	6.5.1.1	ETSI standard for Rel-4	In the second line of sub-clause Words "(ETSI), Global System of Mobile (GSM) Phase 2 standard." are replaced by words "(ETSI) TS 103 066 Version 1.1.1 or latest for Rel-4 Core Network requirements for GSM-R and Global System of Mobile (GSM) Phase 2 standard for BSS."
100.	III Part 2	6	58	6.5.1.1 (2) & (3)	ETSI standard for Rel-4	2) In the second line of item 2) of the sub-clause words "centers (MSCs)" are replaced by words "subsystems (MSSs)" In lines 4, 5, 7 & 8 of item 2) of the sub-clause word "MSC" is replaced by "MSS" 3) In the first line of item 3) of the sub-clause Words "--also support--" are replaced by "----also comprise--"
101.	III Part 2	6	59	6.5.1.8 (4&5)	Cab radio numbers	In sub-clause 6.5.1.8 (4) words "132 (One Hundred Thirty Two)" are replaced by "120 (One Hundred twenty)" In sub-clause 6.5.1.8 (5) words "132 (One Hundred Thirty Two)" are replaced by "120 (One Hundred twenty)"
102.	III Part 2	6	61	6.5.3.1	220 km/h	In the sixth line of sub-clause Words "—120 km/h." are replaced by "----220 km/h."
103.	III Part 2	6	61	6.5.3.2	RF coverage IR alignment	In the first line of sub-clause Word "also" after word "shall" is deleted. At the end of the sub-clause words "for which an extra margin should be considered for a minimum coverage level of -88 dBm at 1.5 m above terrain outdoor." are replaced by "RF link budget shall also be designed to provide a minimum of -80 dBm RF signal at 1.5 m above terrain outdoor for satisfactory communication from a handportable radio inside locomotive cab for speeds lower than or equal to 220 Km/h on WDFC and IR tracks parallel to the WDFC alignment excluding IR tracks on detours. An in-train/in-locomotive loss of a minimum of 15 dB shall be considered for link budget calculations".
104.	III Part 2	6	61	6.5.3.5	speed	At the end of the sub-clause words "---120 km/h" are replaced by "—220 km/h"
105.	III Part 2	6	61	6.5.3.7	Double coverage is not envisaged	At the end of the sub-clause after word "---0 Km" add " <i>limited by the sensitivity of the cab radio. Double coverage is not envisaged</i> "
106.	III	6	62	6.5.3.15	GSM R	In the second line of the sub-clause after words " ----crossing gates." Add new

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	Part 2				base stations co-location with auto location huts	<p>sentence "Telephone communication / data circuits / dark fibers as required have to be provided in the Auto location huts for signalling."</p> <p>In the second line of sub-clause after words "base stations" words "along with SDH nodes" are added.</p> <p>At the end of the sub-clause after words "--- crossing gates" words "and preferably co-located with the auto location huts." are added.</p>
107.	III Part 2	6	62	6.5.3.17	Reference	In second line of sub-clause words "----- NKC-S&T-SSD-AL-20008 (version A) in Employer's" are replaced by "NKC-S&T-SSD-AL-20008 (version B) in Reference" Revised drawing at attachment 15 incorporates fixed network for RDW and BSC indicative requirements of phase 2
108.	III Part 2	6	64	6.5.9.3	Maximum height of tower	At the end of the sub-clause after words "---structure." sentences "The maximum height of the tower will normally not exceed 40m. However in exceptional cases higher height may be permitted by the Engineer." are added.
109.	III Part 2	9	84	9.5.2 (9)	Add sub-clause central Master clock (1+1)	New Sub-clause 9.5.2(9) "The central Master Clock system shall be provided with (1+1) configuration". is added
110.	III Part 2	10	86	10.1.1	OCC location	At the end of the sub-clause words " --- located at Ahmedabad." Are replaced by "located in and around Ahmedabad City within a distance of about 15 km from the Right OF Way.
111.	III Part 2	13	98	13.4.3.9	Chapter 6	At the end of the sub-clause words "---Chapter 4" are replaced by "----Chapter 6."
112.	III Part 2	15	112	15.7.4.4.2		Sub-clause is replaced by "The contractor may make use of Traction Earth provided by EMP-4 contractor along the main line as per agrees system of Earthing Management plan.
113.	III Part 2	15	113	15.7.4.8		<p>In the first line of the sub-clause after words "--- connections" words "with minimum 25 mm² copper conductors each," are added.</p> <p>In the second line of the sub-clause words "to the earth terminals provided inside the rooms where the telecom equipment is installed," are replaced with "for signal grounding,"</p>
114.	III	15	114	15.7.4.13		The sub-clause is replaced by "The earthing connection bar for the clean earth shall be separated away from the main earth connection bar."

Sl. No.	Volume	Section/ chapter	Page No.	Clause / Para No.	Item	Amendments in the Bidding Documents
	Part 2					
115.	III Part 2	18	122	18.3.2 (3)	In India	In the first line words “ ---overseas at—“ are replaced by “ ---overseas/India at—“
116.	III Part 2	18	123	18.3.2 (3)		The table for training requirements is modified as per attachment 1.
117.	III Part 2	Appendix 2	3&5	Appendix 2	Dispatch Telephone Console Matrix	In the table Appendix 2 under column “No. of external connections” words “IR OCC 6(8)” are replaced by “IR OCC 4(9)” for chief controller, Deputy Chief Controller and Traffic Controllers as per attachment 2. At the end of Appendix 2 table words “DTS Consoles to be provided by the contractor shall be sized to accommodate the requirements of extension both for phase I and phase II” are added as per attachment 2.
118.	III Part 2	Appendix 5	8	Appendix 5	Contract Spares	Appendix 5 S.No. 1 quantity modified, S.Nos. 6,7 & 8 description of items modified as per attachment 3
119.	V	-	V-7-1-5	-	NKC-S&T- SSD-AL- 20004 (VERSION A)	NKC-S&T-SSD-AL-20004 (VERSION A) revised as per NKC-S&T-SSD-AL-20004 (VERSION B) at attachment 12 <ul style="list-style-type: none"> LAN & WAN deleted from SDH nodes SDH nodes at stations, Depot (ELMD) & OCC marked STM16 level and note 1 added in drawing.
120.	V	-	V-8-1-1 & V-8-1-2	-	2x25kv System: Traction Supply & Sectioning	Drawing No. EMP4/PS/201 is replaced by revised Drawing No. drawing EMP4/PS/201@ at attachment No. 16
121.	V	-	V-8-2-1	-	LT Supply tapped from 25kv OHE	Drawing No. EMP4/OHE/106 is replaced by revised Drawing No. drawing EMP4/OHE/106@ at attachment No. 17
122.	IV	-	102, 103, 113 & 116	-	ROW Offsets for section 9, Section 6 and	<ol style="list-style-type: none"> Replace the existing ROW offsets for Section 9 on pages 102 & 103 from Chainage 8697 to Chainage 14200 with the ROW Offsets as attached herewith as Attachment 4 Replace the existing ROW offsets for Section 6 on page 113 from Chainage 81822 to Chainage 85853 with the ROW Offsets as attached herewith as

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					Palanpur Bye-pass	<p>“Attachment 5”</p> <p>3. Add the new ROW offsets for Section 6 on new page no. 113 (a) for sidings connecting Sabarmati South to Goraguma, Sabarmati South to Sanand, Goraguma to Sabarmati North and Sanand to Sabarmati North as attached herewith as “Attachment 6”</p> <p>4. Replace the existing ROW offsets on page 116 for Palanpur Bypass from Chainage 5400 to Chainage 7900 with the ROW Offsets as attached herewith as “Attachment 7”</p>
123.	V	-	-	-	Transverse Control Points for Package 3	New Transverse Control Points for Package 3 for IQBALGARH – VADODARA SECTION added as Attachment 8
124.	III Part 2	6	61	6.5.3.8	RF coverage plots	In the first line of sub-clause words “and RF Signal coverage plots “ are deleted In third line of sub-clause words “and RF Signal coverage plots for down link” are added after words “-----coverage)”
125.	III Part 2	7	69	7.3.14	Printer required at each station	In table of clause 7.3.14 against S. N 5 add words “and printer” after word “PC” under the column description of item. Revised table is at attachment 9
126.	III Part 2	5	36	5.5.3.7.2	48 Fiber OFC cable	At the end of the sub-clause add words “. 48 fiber optical fiber cable shall conform to RDSO specification no. TC-55/2006 (rev. 1) or latest maintaining mechanical construction as per RDSO specification for 24 fiber optical fiber cable. Contractor shall submit the details to the Engineer for review and approval”
127.	III Part 2	5	22	5.3.4.2	SDH nodes at stations, ELMD & OCC as a minimum to be STM16	In the first line of the sub-clause words “station and ELMD” are replaced with words “station, ELMD and OCC” In the first line words “---- STM-4 level” are replaced with “----STM-16 level” In the second and third lines of the sub-clause words “expandable to STM16 level and STM1 ADM in the SDH hierarchy. SDH node at OCC as a minimum shall be of STM4 or higher level expandable to STM-16 level or higher.” are replaced with “Number of STM16/STM4/STM1 interfaces in each of the nodes at each station, ELMD and OCC shall be decided during design stage.” In the fourth line words “exact level of each node shall be determined by the Contractor to” are replaced by “system configuration shall”
128.				5.3.4.3		In the second and third lines of sub-clause words “other tributaries including STM-1/STM4 and” are deleted

Sl. No.	Volume	Section/ chapter	Page No.	Clause / Para No.	Item	Amendments in the Bidding Documents
129.				5.3.4.4		In the second line of the sub-clause words “STM-1 ADM level or higher, expandable to STM4” are replaced with “STM4 or higher” At the end of the sub-clause a new sentence “Number of STM4/STM1 interfaces in the SDH node at each of the porta huts shall be decided during design stage.” is added
130.	III Part 2	8	81	8.6.1	DTS switching system in OCC	At the end of the sub-clause new sentence “The DTS switching system for OCC shall, in addition, be sized to accommodate five numbers of additional DTS consoles for phase 2 without any modifications or addition of any modules.” Is added
131.	V		V-7-1-3, V-7-1-6, V-7-1-8 & V-7-1-9		Drawings modified	<p>Page V-7-1-3 Drawing no.NKC-S&T-SSD-AL-20002 (version A) for “major optical fiber Cable network (indicative)” replaced by revised version B drawing no. NKC-S&T-SSD-AL-20002 (version B) at Attachment 10 incorporates</p> <ul style="list-style-type: none"> • OFC Distribution Frame 48 Fiber instead of 24 Fiber • Note 3 added <p>Page V-7-1-6 Drawing no.NKC-S&T-SSD-AL-20005 (version A) for “Typical Arrangement for Secondary OFC (SDH Ring Network) (Indicative)” replaced by revised version B drawing no. NKC-S&T-SSD-AL-20005 (version B) (indicative) at Attachment 13 incorporates</p> <ul style="list-style-type: none"> • STM-1/ ADM replaced by STM-4 • 24 core replaced by 48 cores • Notes 1 to 3 added <p>Page V-7-1-8 Drawing no.NKC-S&T-SSD-AL-20007 (version A) for “GSM R Transmission Network (indicative)” replaced by revised version B drawing no. NKC-S&T-SSD-AL-20007 (version B) (indicative) at Attachment 14 incorporates provision for phase 2 in BSC</p> <p>Page V-7-1-9 Drawing no.NKC-S&T-SSD-AL-20008 (version A) (indicative) for “GSM R Transmission Network Overview (indicative)” replaced by revised version B drawing no. NKC-S&T-SSD-AL-20008 (version B) (indicative) at Attachment 15 incorporates provision for phase 2 in BSC and fixed network connecting RDWs in OCC to core equipment.</p>
132.	III Part 2	5	33	5.5.3.2.2	Add-drop multiplexer, multiple	At the end of the sub-clause new sub-para

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					add-drop multiplexer configurations to support	“The SDH equipment in add-drop multiplexer, multiple add-drop multiplexer configurations shall support “drop-and-continue” and “broadcast” capability. Such configuration shall be possible through network management system control. These features shall be provisioned at VC12, VC3 and VC4 level. is added
133.	III Part 2	5	33	5.5.3.2.4		The sub-clause is replaced with “The East & West Side of STM-16 Interface for Aggregate Ring as well as STM-1/4 Interface on Tributary Rings shall be accommodated on two separate cards.”
134.	III Part 2	6	65	6.6.1	Added “as far as possible” after software in third line of the clause.	In the third line of the sub-clause words “, as far as possible,” are added after the word “--- software”
135.	III Part 2	5	.21	5.3.3.1.5	“Fiber count of 24” replaced by “Fiber count of 48”	In the first line of the sub-clause words “ ---- fiber count of 24 fibers” is replaced with “fiber count of 48 fibers “
136.	V		V-7-1-3		Termination of 12 fiber secondary cables in OCC & main OFC cable 24 fibers replaced with minimum 48 fibers	Drawing No NKC-S&T-SSD-AL-20003 (Version-A) V-7-1-4 revised to incorporate <ul style="list-style-type: none"> • Secondary OFC cable termination in OCC • Main OFC cable 24 fibers replaced with 48 fibers • Main OFC cable termination in porta hut midway between stations deleted Revised drawing No NKC-S&T-SSD-AL-20003 (Version-B) V-7-1-4 addendum is at attachment 11
137.	III Part 2	5	33	5.5.3.2.3	SDH equipment cross	The sub-clause is replaced with “The SDH Equipment at stations shall have the Non-Blocking Cross Connect Capacity of minimum 96 X 96 VC4 equivalent at VC4 hierarchical level and 96 X 96

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					connect capacity	<p>VC4 equivalent at VC3 and VC12 level. VC3 and VC12 Cross Connect shall be implemented using Cross Connections at VC4, VC3 and VC12 in the same equipment in Single Stage.</p> <p>The SDH Equipment at OCC shall have the Non-Blocking Cross Connect Capacity of minimum 256 X 256 VC4 equivalent at VC4 hierarchical level and 256 X 256 VC4 equivalent at VC3 and VC12 level. VC3 and VC12 Cross Connect shall be implemented using Cross Connections at VC4, VC3 and VC12 in the same equipment in Single Stage."</p>
138.	III Part 2	5	23	5.3.5.2	Number of EoS tributaries at station and port hut revised.	<p>In the first line of the sub-clause words "4 Ethernet" are replaced by words "16 Ethernet"</p> <p>In the second line of the sub-clause after words "-----EoS tributaries" words " and any other Ethernet interface EoS tributaries as may be required for implementation of the project." are added</p> <p>In the second line of sub-clause after words "----equipped with" words " a minimum of 4" are added</p> <p>At the end of the sub-clause words ".as required" are replaced with words "and any other Ethernet interface EoS tributaries as may be required for implementation of the project"</p>
139.	III Part 2	5	21	5.3.3.1.2	OFC fiber cable of first network termination in port hut deleted	Last sentence of the sub-clause "In addition OFC cables of the First network shall also be terminated at one of the SDH/GSM-R nodes in port huts approximately midway between adjacent stations." Is deleted
140.	III Part 2	6	59	6.5.1.9	.in sub-item (5) added "fixed radio terminal for" before SCRs	<p>The words of sub-item 5 "dispatcher consoles and associated hardware for OCC and SCRs" are replaced by the words "dispatcher consoles and associated hardware for OCC and fixed radio terminals for SCRs"</p>
141.	III Part 2	6	65	6.6.2	MSS, BSC, TRAU etc for phase 2	<p>In the first line of the sub-clause words "all equipment" are replaced by words "all other equipment including BSC, TRAU etc"</p> <p>In the second line of the sub-clause words "of expansion to cover the phase 2" are</p>

Sl. No.	Volume	Section/ chapter	Page No.	Clause / Para No.	Item	Amendments in the Bidding Documents
					requirements and expansion	replaced by words "to cover the phase 1 & phase 2" In the third line words "capacity of 25% or expansion" are replaced by capacity of 50% for expansion and other expansion" At the end of the sub-clause words "whichever is higher" are deleted A new sentence "Requirements of phase 2 may be assumed to be about 80% of requirements of phase 1." Is added at the end of the sub-clause.
142.	III Part 2	Appendix 9-5	40 of 40	1.5	Sub clauses of clause 1.5 Appendix 9-5 Interface issues between ST P-17, P-14 and ST P-5	In the first line of 12 th bullet words (24 fiber cable) are replaced by words (48 fiber cable)" In the first and second lines of thirteenth bullet words "including at least one number of ADM1 for cross connection" are replaced by words "for integration of phase 1" In the fifteenth bullet from top word "MSC etc" are replaced with words "MSS, BSC etc" Add new bullets sub-items <ul style="list-style-type: none"> The phase 1 contractor shall coordinate with the phase 2 contractors ST P-17 and P-14 to configure the MSS and other equipment in OCC/CER etc for the addition of BTSs etc for phase 2. Phase 2 contractors ST P-17 and P-14 shall provide the BTS and other relevant information to ST P-5 contractor to configure the MSS and other equipment provided as part of phase 1.
143.	III Part 2	6	52	6.3.10.3.1	Add sub item 5). Security management to provide rules for authentication procedures	In the sub-clause add new sub-item 5) "5) Provide the rules for authentication procedure."
144.	III Part 2	6	52	6.3.10.4.1	Fault management and sub-clause 1) modified	At the start of the sub-clause before the words "Fault---" add the words "Shall be used to detect, isolate and repair problems." In the first line word "Monitoring" after the word "---- Alarm" is replaced by word "management" In the sub-clause 1) after the words "Capable of" words "tracing faults through the system, carry out diagnostics and act upon the detection of errors in order to

Sl. No.	Volume	Section/ chapter	Page No.	Clause / Para No.	Item	Amendments in the Bidding Documents
						correct faults and” are added
145.	III Part 2	5	23	5.3.4.7	EoS	At the end of the clause words “using Ethernet Pseudo Wire (PWE3)” are deleted.
146.	III Part 2	5	24	5.3.6.2	Redundant Layer 3 Switches for WAN	At the end of the sub-clause add sub-para “At each station two numbers of such layer 3 switches wired in redundant configuration shall be provided. Numbers of layer 3 switches in redundant configuration in OCC shall be decided during design stage subject to No Objection by the Engineer”
147.	III Part 2	6	49	6.3.9.14.1 2	Standard audio visual indications for Driver Machine Interface	At the beginning of the sub-clause words “The standard set of audible and visual indications specified in ‘Railway applications –Communication, signalling and processing systems – European Rail Traffic Management System – Driver Machine Interface shall be implemented in the Cab radio system.” are added
148.	III Part 2	6	44	6.3.9.6.2 other cab radio functions e)	Train borne recorder	At the end of the sub-clause item e) words “RS P-7” are deleted
149.	III Part 2	6	59	6.5.1.3	ETSI standard for Rel-4 for Core equipment	In the first line of the sub-clause words “centre (MSC)” are replaced by words “subsystem (MSS)” In line 4 of the sub-clause word “MSC” is replaced by word “MSS” In line 6 of the sub-clause words “Mobile Switching Centre” are replaced by “Mobile Switching subsystem”
150.	III Part 2	6	51	6.3.10.1.1	ETSI standard for Rel-4 for Core equipment	In the third line of the sub-clause word “MSC” is replaced by “MSS”
151.	III Part 2	6	56	6.4.2.1 (1)	MSS & MGW	(1) In the sub-clause words “MSC sub components.” are replaced by “MSS & MGW sub components.”
152.	III Part 2	6	56	6.4.3.2 (9)	Failure of MSS & MGW	(9) In the sub-clause words “failure of MSC equipment” are replaced by “failure of MSS & MGW equipment”

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153.	III Part 2	6	60	6.5.2.3		At the end of the sub-clause words “DFCCIL shall, however provide the necessary support” are added
154.	III Part 2	3	13	3.1.2	Service support	At the end of the sub-clause sentence “Contractor shall provide service support as a minimum for the specified service life of the system/equipment.” is added.
155.	III Part 2	6	57	6.4.7.1	Call setup time	In the sub-clause below the words “Table 6-7 Call setup time requirements“ add the words “* This call setup time refers to the beginning of the audible indication as part of emergency call warning.”
156.	III Part 1	Annex-2	41	14.5	Maintenance cum Technical manual	The Clause is modified as under: “This manual is meant for technical staff and guides step by step for carrying out the various periodical & preventive maintenance checks and backups to be taken to prevent loss of data/software.”
157.	III Part 1	10	64	10.7.4.5	Earthing of outdoor installations	The Clause is modified as under: “(a) EM P-4 Contractor shall develop Project wide Earthing and Bonding Management Plan. ST P-5 Contractor shall coordinate and provide earthing system accordingly as per International practice. (b) Extension of Traction Earth from the agreed track side connection point to Signalling equipment shall be done by ST P-5 Contractor as per agreed system of Earthing management plan. (c) EM P-4 Contractor shall be connecting OHE masts and rails to Traction Earth.”
158.	III Part 1	Annexure 7-1	1	2	Contractor’s responsibilities	Add new Sub-Clause 2.6 as under: “(a) EM P-4 Contractor shall develop Project wide Earthing and Bonding Management Plan. ST P-5 Contractor shall coordinate and provide earthing system accordingly as per International practice. (b) Extension of Traction Earth from the agreed track side connection point to

Sl. No.	Volume	Section/ chapter	Page No.	Clause / Para No.	Item	Amendments in the Bidding Documents
						Signalling equipment shall be done by ST P-5 Contractor as per agreed system of Earthing Management plan. (c) EM P-4 Contractor shall be connecting OHE masts and rails to Traction Earth."
159.	III Part 1	1	3	1.4.2(8)	TMS system	The Clause is modified as under: "Train Monitoring and Diagnostic System (for phase 1 stations including Block sections as per Annexure 3);"
160.	III Part 1	8	40	8.3(v)	Physical Interfaces	The Clause is modified as under: "ST P-5/ CP-14 /ST P-17 (Specific Issues)"
161.	III Part 1	5	24	5.5.1.15	LED Signals	Replace the Clause with "NOT USED".
162.	III Part 1	1	4	1.4.4	Depot	Add sub-clause (c) as under: "Typical Signalling Plan of Depot may be referred at Attachment 18 of Addendum 3 . It may be noted that Trap and Point taking off from main line and Crossover between UP and DN lines of DFCCIL at Dadri end of Depot shall be controlled from DFCCIL's Rewari Interlocking.
163.	III Part 1	Annex. 2	2	4.1(A)(ii)	System design	The Clause is modified as under: "List of Junction and Crossing stations is given in Annexure 3."
164.	III Part 1	4	15	4.3.4	Reliability requiremen ts of TPWS.	The Clause is modified as under: "The TPWS line equipment shall be engineered for a minimum service life of 15 years, based on the equipment being continuously in operation."
165.	III Part 1	Annex. 1	11	9.3(i)a	Traffic Related Alarms	The Clause is modified as under: "Failure of any Signalling gear including Electronic Interlocking, I/O controller, PSS, Axle Counter, Signal Lamp, Point Machine, Line side Electronic Unit (LEU) of TPWS etc. in the entire section under scope."
166.	III Part 1	Annex. 4	1		Phase 2 list of stations	The Annexure is replaced with "Typical Signalling Plan of Depot".
167.	III Part 1	5	21	5.3.1(14)	On board TPWS	The Clause is modified as under:

Sl. No.	Volume	Section/ chapter	Page No.	Clause / Para No.	Item	Amendments in the Bidding Documents
					Data base storage capacity	“Data base storage capacity of On board TPWS shall be so designed so as to keep in view Clause 5.16 of RDSO’s Spec of TPWS and the operational plan of using the Locomotive for about 3 months on main line before bringing it back to ELMD. It shall be possible to download required On Board Data when the Loco is under revenue operation. Necessary software shall be supplied to analyse downloaded data by competent signaling staff on line as well as transmit it to ELMD for analysis by TPWS maintenance center staff.”
168.	V	-	V-6-1-1	-	Typical Signalling Plan – Station	DAC track device in overrun protection section is deleted and revised drawing (Ver C) is given as Attachment 19 of Addendum 3.
169.	III Part-1	9 Part-1	25 of 84	5.5.1.21	Use of Separate Cables for UP and DOWN lines.	The Clause is modified as under: 5.5.1.21 Separation for UP and DN lines: (i) Use of cables, I/O cards etc. shall be separate for UP and DN lines. (ii) Cables meant for UP and DN lines shall generally be laid in separate trenches outside respective DFCCIL tracks. In exceptional cases, when it is not possible to ensure the same, the Contractor shall suggest alternative method with detailed reasoning for consent by the Engineer and approval by the Employer. (iii) Location boxes meant for UP and DN lines shall generally be located separately outside respective DFCCIL tracks. In exceptional cases, when it is not possible to ensure the same, the Contractor shall suggest alternative method with detailed reasoning for consent by the Engineer and approval by the Employer.
170.	III Part 1	8	40	8.1	Contractor’s coordination with others	The first sentence of the Clause is modified as under: “The Contractor (ST P-5 Contractor) shall interface with Other Contractors (Contractors of CT P-1, CT P-2, CT P-3, CT P-3A, EM P-4, PE P-6, RS P-7, ST P-17 and CP-14 packages), Interfacing parties, relevant authorities and agencies to ensure the effective and compatible coordination of all aspects of design, installation, testing and commissioning of Works.”
171.	III Part 1	8	41	8.4.5	Contractor’s coordination with others	The Clause is modified as under: ““Project Wide” for the purpose of the Appendices is defined as the complete Scope of Work to be executed under Contracts CT P-1, CT P-2, CT P-3, CT P-3A, EM P-4, ST P-5, PE P-6, RS P-7, ST P-17 and CP-14 including other obligations of the Employer for successful commissioning of DFC Western Corridor Phase1 .”
172.	III Part 1	Annex. 1	1	1.1	Scope of	The Clause is modified as under:

Sl. No.	Volume	Section/ chapter	Page No.	Clause / Para No.	Item	Amendments in the Bidding Documents
					TMS work.	“Train Monitoring & Diagnostic System (TMS) is proposed to be provided in Rewari-Vadodara section (Phase 1) of DFCCIL Western corridor.”
173.	III Part 1	Annex. 1	1	1.2	Scope of TMS work.	The Clause is modified as under: “TMS shall be designed to include complete Signalling system covering full line of Phase 1. If required, TMS shall be commissioned in two or more phases depending on progress of works.”
174.	III Part 1	Annex. 1	2	5.1(i)	Live Indications in Control Office	First sentence of the Clause is modified as under: “Overview Mimic Indication Panel consisting of video panels shall be provided to display an overview of the DFCCIL Western Corridor Phase 1 network covered by TMS.”
175.	III Part 1	Annex. 1	2	5.1(ii)	Live Indications in Control Office	The Clause is modified as under: “The Mimic Indication Panel shall display all Axle Counter Track sectioned lines and all interlocked signal aspects of track layouts of stations & auto sections from Rewari to Vadodara stations. Location of Auto Location Huts shall also be shown.”
176.	III Part 1	Annex. 1	9	7.5(i)	Crew Managemen t System	The Clause is modified as under: “Crew Management System shall be provided for Loco Pilots.”
177.	III Part 1	Annex. 1	11	9.3(i)c	Traffic Related Alarms	The Clause is modified as under: “Alarms initiated by Health Monitoring Systems of Points, cables, PSS, Earth Leakage Detector, ACs provided by the contractor etc.”
178.	III Part 1	Annex. 1	13	11(ii)	Integration with train radio	The Clause is deleted.
179.	III Part 1	9 Part 1	35	6. 2. 3)	System Cycle	The Clause is modified as under: “Cycle time and response time shall meet the requirements of Clause 5.1.2 of RDSO Spec of EI. Cycle time and response time of the system shall be clearly indicated.”
180.	I (Part 1/2)	3	123	6.3	Form I-B-7: Technical Particulars – Signal and Telecommu nication	Add new sub-para (xii) at the end of clause 6.3, as under: “(xii) Cycle time and response time of the EI system as per Clause 5.1.2 of RDSO Spec of EI.”

Sl. No.	Volume	Section/ chapter	Page No.	Clause / Para No.	Item	Amendments in the Bidding Documents
					System	
181.	III Part 1	Annex-2	8	6.1 viii)	Tape Drive	The Clause is modified as under: "Blu-ray Disc recorder".
182.	III Part 1	Annex-2	10	6.3 (5)	Tape Drive	First sentence of the Clause is modified as under: "It shall be possible to take INCREMENTAL back up on Blu-ray Disc."
183.	III Part 1	Annex-2	10	6.4(1)(iii)	Tape Drive	The Clause is modified as under: "Blu-ray Disc player for accessing archived data."
184.	III Part 1	Annex-2	1	1	Introduction	The Clause is modified as under: "This specification covers the technical requirements of the Train Monitoring and Diagnostic System (hereafter called TMS) for use on Rewari - Vadodara section of Western Dedicated Freight Corridor."
185.	III Part 1	Annex-2	1	2.1	FRS	The Clause is modified as under: "Signalling work including TMS in Western Corridor is divided into two phases as under: Phase 1: Rewari-Vadodara, to be provided by P-5 Contractor. Phase 2: Dadri-Rewari and Vadodara-JNPT, to be provided by P-14 & P-17 Contractors respectively. "
186.	III Part 1	Annex-2	1	2.2	FRS	The Clause is modified as under: "TMS shall be designed to work as an integrated system of both phases covering full line of Western corridor. Suitable interface shall be developed with P-14 & P-17 Contractors to achieve this functionality. Refer Annex. 7-5 for details."
187.	III Part 1	Annex-2	1	2.4	FRS	The Clause is modified as under: "Wall display shall include display of SCADA also. Provision of SCADA for phase 1 will be done by P-4 contractor and will provide feed for display controller. However, Work stations on tables of Traction Power Controllers showing SCADA display shall be provided by P-4 contractor."
188.	III Part 1	Annex-2	2	4.1(A)(i)	System design specificatio n	The Clause is modified as under: "Signalling work including TMS in Western Dedicated Freight Corridor is divided into two phases as under: Phase 1; Rewari-Vadodara Phase 2: Dadri-Rewari and Vadodara-JNPT."

Sl. No.	Volume	Section/ chapter	Page No.	Clause / Para No.	Item	Amendments in the Bidding Documents
189.	III Part 1	Annex-2	2	4.1(A)(v)	System design specification	The Clause is modified as under: "Block sections in Rewari-JNPT section will be provided with Automatic Signalling with signal spacing of about 2 Kms."
190.	III Part 1	Annex-2	2	4.1(A)(ix)	System design specification	The Clause is modified as under: "Train Protection and Warning System (TPWS) will be provided in Rewari-JNPT section to monitor observance of speed limits, stop signals etc."
191.	III Part 1	Annex-2	2	4.1(A)(x)	System design specification	Add new Clause as under: "Dadri – Rewari section will be provided with Absolute Block Signalling out of which a total of 3 long Block Sections will be provided with Intermediate Block Signalling (IBS)."
192.	III Part 1	Annex-2	5	4.10	Safety Integrity Level	The Clause is modified as under: "TMS can have SIL0 or equivalent safety level."
193.	III Part 1	Annex-2	20	8(ii)	SCADA display	The Clause is modified as under: "Wall display shall include display of SCADA also. Provision of SCADA for phase 1 will be done by P-4 contractor and will provide feed for display controller."
194.	III Part 1	Annex-2	21	8.1(vi)	Video wall display	The Clause is modified as under: "The Mimic Indication Panel shall display all Axle Counter Track sectioned lines and all interlocked signal aspects of track layouts of stations & block sections."
195.	III Part 1	Annex-2	27	9.1	Power Supply System for TMS	The Clause is modified as under: "Load of TMS shall be combined with other Signal & Telecom equipment loads in OCC as well as at stations and combined PSS provided as per details given in bid documents. Capacity of PSS in OCC shall be determined by taking load requirement of phase 2 TMS also and calculations got agreed by the Engineer."
196.	III Part 1	Annex-2	40	12(iv)	On Board vital data and alarm transmission via radio	Replace the Sub-clause with "NOT USED".
197.	III Part 1	Annex 7-5	1	All	Interface issues with other S&T Contractors	The Annexure is updated and replaced with Attachment 20 .
198.	III Part 2	11	91	11.1.4	AC Power supply in telecom	The existing clause is replaced by "For telecom porta huts EM P-4 shall provide 1 phase AC power supply from UP & Down catenaries with an automatic change over switch. Automatic change over switch shall be provided by EM P-4 inside Signal porta

SI. No.	Volume	Section/ chapter	Page No.	Clause / Para No.	Item	Amendments in the Bidding Documents
					porta hut	huts. Further transmission of power from Signal Porta hut to Telecom Porta hut and distribution within Telecom Porta hut shall be the responsibility of ST P-5"