

Reasoned Document bases on comments received from various firms and concerned Directorates of RDSO on Draft Technical Specification No. TI/SPEC/OHE/SPOLT /0140, Rev-1 (...2019) for Self-propelled Over Head Equipment Laying Train forBG (1676 mm) Routes of Indian Railways.

S. No.	Clause No. of Spec.	Description (as per Draft Spec.)	Firm's Name	Firm's comment	RDSO's remark	To be amended based on comments
	1.1	This specification is for aSelf-propelled Over-Head-Equipment-Laying-Train for BG (1676 mm) Routes of Indian Railways. The OHE Laying Train shall be 8-Wheeler Stock. It shall be used for simultaneous stringing of contact & catenary wire which would save the block requirement making the composition (to & fro) and would obviate the need for using diesel loco, as per the existing practice. The OHE Laying Train shall consist of 8-Wheeler Diesel Electric Tower Car (8-WDETC) and Un-Rolling/Re-Rolling Car. The 8-WDETC shall conform to RDSO's Specification No. TI/SPC/OHE/8WDETC/009 2. This modern OHE-Laying -Train shall consists of automatic tensioning arrangement, guide masts, instrumentation for ensuring proper tension	M/s Geismar India pvt ltd, New Delhi	We understand that: 1. Self propelledover head equipment laying train is a formation of 02 independent units which includes 01 no. self propelled wiring machine and 01 no. 08-WDETC. 2. Both the units should be self propelled in nature while used independently. In such case kindly clarify whether the wiring machine which is not having the feature of self propulsion and being towered by a prime mover like 8-WDETC would be considered a self propelled wiring train?	Please refer clause no.4.0 para 3, in which working speed (creep speed) during un-rolling/re-rolling is mentioned as 0-20 kmph. Also, in same clause under heading "Diesel Engine" it is mentioned that "Fuel efficient Diesel Engine of suitable capacity to operate in self-propelled mode at a speed of 0-20kmph at work site and maximum towing speed in the section shall be 110 kmph" Hence, both i.e. 8W DETC and un-rolling/re-rolling Car shall be self propelled.	No change is required in this clause.

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		and uniform rotation of the wiring drums etc. The OHE-Laying-Train shall be robust, sturdy and capable of operating under the conditions prevailing on Indian Railways. Herein, after it will be called OHE Laying Train throughout the Specification.				
	2.0	The 8-Wheeler self-propelled OHE-Laying-Train shall be used for simultaneous stringing of contact & catenary wire which would save the block requirement making the composition and would obviate the need for using diesel loco, as per the existing practice. It shall be equipped with crane for loading and unloading of Contact and Catenary Wires drums and Un-rolling/Re-rolling shall be possible in both the directions. The standards, specification and other design details along with list of machinery and equipments to be	M/s Geismar India pvt ltd, New Delhi	Kindly clarify whether the composition of 8-WDETC and Wiring Train is considered as self propelled train or both the units should have its own power source (Engine and transmission system) individually. we propose to have the self propulsion in both the units to have the redundant system in place in case of breakdown of any one unit.	Please refer clause no.4.0 para 3, in which working speed (creep speed) during un-rolling/re-rolling is mentioned as 0-20 kmph. Also, in same clause under heading "Diesel Engine" it is mentioned that "Fuel efficient Diesel Engine of suitable capacity to operate in self-propelled mode at a speed of 0-20kmph at work site and maximum towing speed in the section shall be 110 kmph"	Not Applicable

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		provided in the Un-rolling/Re-rolling Car are detailed in para 4.0 below.			Hence, both i.e. 8W DETC and un-rolling/re-rolling Car shall be self propelled.	
	3.10	<ul style="list-style-type: none"> It must be possible to reach all parts of Contact/Catenary installation from a safe working position. 	M/s Geismar India pvt ltd, New Delhi	It is understood from the point that there is a requirement of elevating platform or a cradle on wiring machine, which would make it possible to access the parts/areas of contact/catenary installations including the cantilevers. Kindly clarify.	No change required	No change
	3.11	<u>Requirement For Execution of Work:</u> <ul style="list-style-type: none"> OHE-Laying-Train shall be self-propelled and shall run independently at the working speed (creep speed) of 0 - 20 kmph at work site. 	M/s Geismar India pvt ltd, New Delhi	Although the OHE-Laying train can achieve a creep speed of 0-20 kmph but that would require a team of experienced workers who can work in synchronization of 20 kmph unrolling speed at final tension which is very hard to achieve. Therefore we request to kindly review the requirement of working speed of machine.	Not acceptable, As the speed of un-rolling/ re-rolling Car is from 0 to 20 kmph(creep speed).	Not Applicable
	4.0 (2)	Purpose of use (applications) ...	M/s Geismar India pvt ltd, New Delhi	It is requested to kindly specify the height of High rise OHE.	Height of High rise OHE is already mention in SN-8 of Para 3.8.	Not Applicable
	4.0 (3)	Unrolling/Rerolling Car Parameters- Working Speed (Creep Speed) during un-	M/s Geismar India pvt ltd, New	Although the OHE-Laying train can achieve a creep speed of 0-20 kmph but that would require a team of	Not acceptable, As the speed is from 0 to 20	Not Applicable

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		rolling/re-rolling: 0-20kmph	Delhi	experienced workers who can work in synchronization of 20 kmph unrolling speed at final tension which is very hard to achieve. Therefore we request to kindly review the requirement of working speed of machine.	kmph(creep speed).	
	4.0 (3)	Unrolling/Rerolling Car Parameters- Material for construction	M/s Geismar India pvt ltd, New Delhi	It is requested to kindly include RDSO's Specification No. 56-BD-07 and side buffer arrangement to RDSO's drawing No. SK-98145 within the tender documents, allowing us to study these documents before making any comment on same.	This specification may be obtained from carriage Directorate as per extant rule.	Not Applicable
	4.0 (3)	Unrolling/Rerolling Car Parameters- Coupling and Buffer Arrangement.	M/s Geismar India pvt ltd, New Delhi	Kindly allow us to study RDSO's Specification No. 56-BD-07 along with the side buffer arrangement to RDSO's drawing no. SK-98145.	This specification may be obtained from carriage Directorate as per extant rule.	Not Applicable
	4.0 (3)	Unrolling/Rerolling Car Parameters- Axle:- Shall conform to RDSO's Specification No.IRS R-43/92	M/s Geismar India pvt ltd, New Delhi	Kindly allow us to study RDSO's Specification No. IRS R43/92.	This specification may be obtained from carriage Directorate as per extant rule.	Not Applicable
	4.0 (3)	Unrolling/Rerolling Car Parameters- Wheel: Shall conform to RDSO's Specification No.IRS R-	M/s Geismar India pvt ltd, New Delhi	Kindly allow us to study RDSO's Specification No.IRS R-19/93 Part-II (Latest Version) for forged Wheels.	This specification may be obtained from carriage Directorate as per extant rule.	Not Applicable

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		19/93 Part-II (Latest Version) for forged Wheels.				
	4.0 (3)	Unrolling/Rerolling Car Parameters- Wheel profile	M/s Geismar India pvt ltd, New Delhi	Kindly allow us to include RDSO drawing No. SK-91146 within tender documents, enabling the renderers to study the wheel profile before making offer.	This specification may be obtained from carriage Directorate as per extant rule.	Not Applicable
	4.0 (3)	Unrolling/Rerolling Car Parameters- Transmission Hydrostatic transmission suitable for gradual speed of 0-20 kmph at work site and maximum towing speed in the section shall be 110 kmph. (Details to be submitted)	M/s Geismar India pvt ltd, New Delhi	Although the OHE-Laying train can achieve a creep speed of 0-20 kmph but that would require a team of experienced workers who can work in synchronization of 20 kmph unrolling speed at final tension which is very hard to achieve. Therefore we request to kindly review the requirement of working speed of machine.	Not acceptable, As the speed is from 0 to 20 kmph(creep speed).	Not Applicable
	4.0 (3)	Under-frame, frame components and bogie.	M/s Geismar India pvt ltd, New Delhi	M/s Geiser S.A.S., are among the world's leading manufacturer and supplier of such kind OHE Machines. Our equipments are serving in various railway networks over the globe. We request you to kindly allow us to follow the international standards for bogies and under-frame.	If firm is offering design as per international standard, the same will be accepted subject to compliance this specification no. TI/SPC/OHE/SPOLT/0140 Rev.1 (Draft),IRSOD and will required complete design & prototype clearance by	Not Applicable

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					RDSO as per extant procedure.	
	4.0 (3)	Brake system Para 8, Air dryer of approved make conforming to Spec. No. MP-0.01.00.06 (Rev-05), March'2011 should be provided in line with latest equipment on EMU/DEMU Coaches.	M/s Geismar India pvt ltd, New Delhi	Can air dryer complying with UIC/EN Standard be proposed and supplied?	If firm is offering design as per international standard, the same will be accepted subject to compliance this specification no. TI/SPC/OHE/SPOL T/0140 Rev.1 (Draft), IRSOD and will required complete design & prototype clearance by RDSO as per extant procedure.	Not Applicable
	4.0 (3)	Parking brake: Parking Brake shall be provided as per RDSO Specification No. C-K 408 and to be submitted to RDSO for approval.	M/s Geismar India pvt ltd, New Delhi	Can we adopt the UIC/EN Standards for this?	If firm is offering design as per international standard, the same will be accepted subject to compliance this specification no. TI/SPC/OHE/SPOL T/0140 Rev.1 (Draft), IRSOD and will required complete design & prototype clearance by RDSO as per extant procedure.	Not Applicable
	4.0	Crane Fittings:		The mounting position of	Not accepted as it	No change

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	(10)	The crane shall be equipped with hydraulic extensions, Load hook, Hydraulic stabilizer jacks with outriggers, stabilizers pad, electro hydraulic height limiting device, adjacent track limitation device, electronic control of lifting capacity and range management system, earth bonding of all components and other accessories for safe operation of crane. • Lifting Hook- A standard forged hook with proper locking arrangement. The safe working load shall legibly stamped on a non-vital part of the hook, an authentic test certificate shall be supplied.	M/s Geismar India pvt ltd, New Delhi	crane on wagon does not allow to have the stabilizers and outriggers. As per our internal calculations and our past experience with such machines, the load capacity and required length of crane boom do not need to have dedicated stabilizers and outriggers. We believe that the requirement of stabilizers can be removed or can be made optional for renderers.	is the requirement for safe operation.	
	3.9(4)	Flasher Units conforming to RDSO's spec No ELRS/SPEC/LFL/0017 (Rev-1) Sept, 2004	Motive Power Directorate of RDSO	The specification for Flasher light should be ELS/SPEC/LFL/0017, Rev 1 Setp 04 or latest	Accepted	Flasher Units conforming to RDSO's spec No ELRS/SPEC/LFL/0017 (Rev-1) Sept, 2004 or latest
	3.9(5)	Marker light conforming to RDSO's spec No ELRS/SPEC/PR/0022 (Rev-1) Oct. 2004	Motive Power Directorate of RDSO	The specification for Marker light should be No. ELRS/SPEC/PR/0022 (Rev-1) Oct. 2004 or latest	Accepted	Marker light conforming to RDSO's spec No ELRS/SPEC/PR/0022 (Rev-1) Oct. 2004 or latest
	3.9(6)	Twin Beam Head lights conforming to RDSO's spec No RDSO's Specification No	Motive Power Directorate of RDSO	The specification for Head lights should be No. ELRS/SPEC/PR/0024 (Rev-1) Sep	Accepted	Twin Beam Head lights conforming to RDSO's spec No RDSO's Specification No ELRS/SPEC/PR/0024

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		ELRS/SPEC/PR/0024 (Rev-1) Oct. 2004.		2004 or latest.		(Rev-1) Sep. 2004 or latest.
	3.9(7)	Speed recorder conforming to RDSO's specs No No.MP-0.3700-07 (Rev.03) of April'2003.	Motive Power Directorate of RDSO	Motive Power Specn. No. MP-0.3700-07 (Rev.07) Aug 17 or latest.	Accepted	Speed recorder conforming to RDSO's specs No.MP-0.3700-07 (Rev.07) Aug.17 or latest
		-	Carriage Directorate	No separate para of superstructure, under-frame, sole bar headstock, driving cab,bogie and brake system etc of subject rolling stock has been mentioned in 8W DETC specification. All para shall be mentioned in same draft specification.	Mentioned in para 4.0 (SN.3; under item under frame, frame components and bogie) Already mentioned and also added new SN-21 of Clause no. 4.0of Spec.	Mechanical design shall be as per RDSO 8WDETC Specification No.TI/SPC/OHE/8WDETC/0092 and shall be finalized during design approval stage.
				Full dimension i.e. length of head stock, length over buffer, floor height from rail level, height of coupler/buffer from rail level, wheel base and distance between should be mentioned at Annexure-IV.	Not accepted It shall be checked during design drawing approval stage. Drawing mentioned at annexure-IV is tentative.	No change
				As per subject specification rolling stock is self-propelled over head equipment lying train whereas in tentative layout the subject rolling stock is coupled with 8W DETC tower car. It means the same stock is operating with attach with 8W DETC tower car. The same should	Already mentioned in Clause 4.0 Point no. 2 under features of Un-rolling/rolling car i.e. self propelled vehicles for working at work	Not Applicable

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				be clarified.	site.	
				Details regarding car body mechanical strength requirements to be provided.	Accepted. Point 23 under Clause 4.0 has been added.	Mechanical design shall be as per RDSO Specification No.TI/SPC/OHE/8WDETC/0092 for 8WDETC and shall be finalized during design approval stage.
				A brief para regarding the construction of car body may be provided.	Accepted. Point 23 under Clause 4.0 has been added.	Mechanical design shall be as per RDSO Specification No.TI/SPC/OHE/8WDETC/0092 for 8WDETC and shall be finalized during design approval stage.
				Requirements of corrosion protection to be provided.	Accepted. Point 23 under Clause 4.0 has been added.	Mechanical design shall be as per RDSO Specification No.TI/SPC/OHE/8WDETC/0092 for 8WDETC and shall be finalized during design approval stage.
	Para 4.0 ()	Under-frame,frame components and bogie.	Carriage Directorate (VDG)	Bogie frame and suspension point of view:- i. Upper limit of tare weight, gross weight and unsprung mass of unrolling/Re-rolling Car should be clearly defined.	Added new SN. 22 of Clause No. 4.0	Pay Load: 15 Ton (Approximately).
				ii. Detailed drawings mentioned in Bogie General Arrangement may also be included in specification for more clarity.	NA	NA

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				iii. If contractor deviates from existing drawings of ICF/RCF/RDSO for bogie & its components, FEA of components deviating from the drawings shall be done & submitted to RDSO.	Accepted Added new para of clause no. 5.0.	(i) If contractor deviates from existing drawings of ICF/RCF/RDSO for bogie & its components, FEA of components deviating from the drawings shall be done & submitted to RDSO. (j) If firm is offering design as per international standard, the same will be accepted subject to compliance this specification no. TI/SPC/OHE/SPOLT/0140 Rev.1, IRSOD and will required complete design & prototype clearance by RDSO as per extant procedure.
				iv. Computer Simulation of dynamic behavior of vehicle shall be done, results shall be submitted.	Already covered in Annexure-III.	Not applicable
	Para 4.0 (3)	Axle	Carriage Directorate (VDG)	Wheel Axle point of view: (a) RDSO specification no. shall be read as IRS R-19/93 Part-II(Rev.4) for Solid forged wheels. (b) Wheel profile shall conform to RDSO drawing no. Sketch-91146. (c) Drawing of Wheel and axle are not given. The same may be provided.	Accepted and suitably modified.	(a) Shall conform to RDSO Specification No. IRS R-19/93 Part-II(Rev.4) or latest for Solid forged wheels. (b) Shall conform to RDSO drawing No. Sketch-91146.

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		-		-	Added new SN-23 in clause No. 4.0.	The acceptance of the un-rolling/Re-rolling car for operation/working on Indian Railway Track shall be based upon stipulations given under the RDSO document named as "3 rd report of Standing Criteria Committee with latest revision/alteration."
	Clause 4.0 (para 3, under provision of parking brake)	-			As per discussion Carriage Directorate, Clause 4.0 (para 3, under provision of parking brake) has been modified to include parking brake capability in 1:33 gradient.	Parking brake:- Parking Brake shall be provided as per RDSO Specification No. C-K 408 and to be submitted to RDSO for approval. It shall be capable to hold the un-rolling/Re-rolling car at Max down gradient 1:33 under gross load condition.
	Clause 4.0 (para 3, under frame, frame components and bogie)	-			As per discussion in Carriage Directorate, Clause 4.0 (para 3, under provision under frame, frame components and bogie) Added details as follows as per Rail Bound Multi utility Vehicle (RBMV) spec.	The under frame shall be designed to meet the following loads: i) A vertical load of 3 t/meter run uniformly distributed. The weight of the various equipment mounted in the SPMUV shall be considered as concentrated load and shall be simulated as such during load/strain testing. ii) A horizontal squeeze

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						<p>load of 100 t applied at each buffers.</p> <p>iii) A combination of loads specified at (i) & (ii).</p> <p>iv) FEA in this regard shall be submitted at the design approval stage for approval.</p> <p>The stresses estimated by an approved method shall not exceed 139.3 MPa (14.2 kgf/sq.mm) for members made from Steel to IS:2062 Fe 410CuWC and 221.7 Mpa (22.6Kgf/ sq.mm) for members made from corrosion resistant steel to IRS:M 41 for the uniformly distributed vertical load. Also for the squeeze load referred to above, the stress should not exceed 90% of the lower yield point or proportional limit of the material in the load OHE carrying member of the shell and</p>

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						<p>95% of the lower yield point or proportional limit of the material in the end construction. The estimated vertical deflection of the shell at the center of the OHE car shall also not exceed 10mm under any loading condition detailed at (i) to (iii) above.</p> <p>Completed shell of prototype vehicle shall be strain gauged for stress analysis under tare and loaded conditions with squeeze load. The same shall also be tested for leakage through roof of the Cab and body sides and ends at the works of the manufacturer. To carry out this test, the manufacturer shall provide a test rig to the satisfaction of the inspecting authority.</p>

