O/o The General Manager (STR-EB)
Platinum-11, 3rd Floor, Sanchar Complex,
WMS Compound, 47th Cross, 9th Main, 5th
Block, Jayanagar, Bangalore-41
Off:080-26642777, Fax 26642122

भारत संचार निगम लिमिटेड
BHARAT SANCHAR NIGAM LIMITED
(A Govt. of India Enterprise)

SOUTHERN TELECOM REGION

| GM/STR-EB/Platinum11/SDWAN/EOI/2021-2022/ | Dated at BG-41 | 26.06.2021 |

NOTIFICATION

Sub: **Responses for the queries raised in respect of EoI No. GM/STR-EB/Platinum11/SDWAN/EOI/2021-2022/1 Dated 11.06.2021 at Bengaluru.**

Undersigned is hereby directed to inform all the bidders that all the queries raised by the bidders in the cited EoI are addressed as per the attachment point to point.

Further, we trust all queries raised are addressed. However please note that last date for submission of EoI documents remains as **15:00hrs of 03.07.2021.**

Asst. General Manager (EBP),
O/o General Manager (STR-EB),
Sanchar Complex, STR, Bangalore.

			Consolidated list of Queries received from Bidders			
Sno.	Clause No.	Page	EOI Clause/Specification	Query/Clarification	Suggested Change	BSNL Response
1	**Generic Query**		Would request BSNL to consider only make in India.OEMs to be empaneled directly or through the respective partners and make this clause as mandatory.			Regretted.
2	**Generic Query**		what are the adequate steps BSNL would deploy to counter additional commercial implications in terms of delayed sites, readiness of the customer, failed engineer visits and new site visits by the engineer and how exactly would the empaneled SI /OEM would be compensated over and above the project cost.			The bidder is expected to factor these things in his price as per the industry practice.
3	**Generic Query**		once the project is confirmed, would BSNL agree on the payment milestones and also pay additional charges for the delayed payment for no fault from empaneled partner.			Typically, payment milestones would be agreed mutually before the award of work. As soon as BSNL receives the payment from the customer, BSNL shall endeavour to make partner's relevant milestone payments, after deducting penalties, if any.
4	**Generic Query**		what are the adequate steps BSNL would employ to differentiate the SLAs from link business continuity against SDWAN services.			Query is not clear.
5	**Generic Query**		empaneled partners will have the capabilities to give the uptime reports and the utization reports of SDWAN as the services and BSNL should make sure the empaneled partner not to be penalized for any problems arising out at customers place or the service provider not meeting up the SLAs and hence would request to not hold the empaneled partner to be responsible fpr the link deleivery.			Please refer to Clause 31 of the EoI.
6	Eligibility Conditions National and Circle level System Integrators	2		SDWAN is a relatively new field and not many projects of the same have been implemented. Due to this, many National / Circle level SI who otherwise have the requried technical and financial capability capability will be left out of bidding for this opportunity. It is requested to allow to the SI or his OEM to fulfill this criteria.	Since the SD WAN Diployment is very limited in India. It is requested to allow participation by Bidders having WAN / MPLS network implementation & maintenance experience also. Suggested qualification as provided below may please be considered. a) Bidder should have executed a MPLS network project of minimum Rs.50 Cr value or two MPLS projects of minimum Rs 30 Cr each or three MPLS Projects of minimum Rs 20 Cr value each in any telecom service provider or Government organisation in India in the last 5 years b) Bidded should have executed Managed services / O&M project related to IT/Networking/WAN/DC – 1 project of min 50Cr or 2 of min 30Cr or 3 of min 25Cr in the last 5 years.	Regretted.
7	Eligibility Conditions National and Circle level System Integrator	2		BSNL has allowed SI to bid at both Circle level and National Level. If a national level SI obtains business from a pan India organization and to provide for the same, service delivery has to be done in a particular state, where there is another circle level SI appointed, then how will BSNL handle the issue of conflict of business interests between the two SI.	Since the project requires implementation of SDWAN services across India or the Cirle, it is suggested that bidders with sufficient technical manpower should be selected. Kindly consider bidders with atleast 100 Technical resources for National and 15 Technical resources for Circle on its roll. Kindly add the said clause as a prequalification criteria.	1) Each business opportunity will be circulated amongst the empanelled Circle/National SIs as per the work requirement and work will be awarded to the SI as per the conditions given in the EoI. 2) Regretted.
			Minimum Experience of SD-WAN implementation on turnkey			

Sno.	Clause No.	Page	EOI Clause/Specification	Query/Clarification	Suggested Change	BSNL Response
8		2	basis: National level: Atleast 10 customers and 1000 CPEs; Circle level: Atleast 3 customers and 250 CPEs; The experience can be in India or abroad; In case of consortium, the experience of the consortium partners shall be counted.	It is requested to kindly clarify on the number of SI partners at both National and Circle Level that BSNL intends to Empanel. Also let us know the quantum of business that BSNL intends to target for the SDWAN segment.	The Bidders with industry certifications like ISO 9001:2015, ISO 20000 & ISO 27001 should be preferred for the prestigious SDWAN emplanelment. Kindly include ISO 9001:2015, ISO 20000 & ISO 27001 certifications as the prequalification criteria.	1) This is a open, non exclusive empanelment. The quantum of business will be as per the market requirements. 2) Regretted.
9	Eligibility Conditions National and Circle level	2	c)Annual Turnover of the Company (for IT/ Networking business) for last two years to be atleast ₹ TEN(10) Crores for National and ₹ THREE(3) Crores for Circle category. In case of consortium, the relevant turnover of all the consortium partners towards IT /Networking business will be added with atleast 50% from the lead bidder.	Since large scale SDWAN deployment would require sound finances, it is requested to kindly increase the turnover criteria from the present 20Cr for National and 3 Cr for Circle to 100 Cr for National and 20 Cr for the Circle category.		Regretted.
10	3 OBJECT OF THE EOI	7	The responsibility of the said System Integrators(SI) shall be to design, supply, install, maintain and monitor the SDWAN service offering to the customers and subsequent AMC encompassing the SDWAN CPEs as well as the SDWAN Controllers and other items at the Data Center(DC) and Disaster Recovery(DR).	As per TEC GR SD-WAN architecture, uCPE is part of the architecture. To meet the guideline of this architecture would there be requirement for supply of uCPEs along with CPEs		The particular type of CPEs to be supplied shall be as per customer requirement.
11	4.3	8	The SLA's (Service Level Agreements) as well as penalty will be on back to back basis. Adequate process of customer complaint resolution by the partner will be established after mutual consultation and approval of BSNL.	For SLA calculation and penalty, any penalty imposed by customer on account of BSNL's failure would not be charged to SI. Kindly confirm		Please refer to Clause 31 of the EoI.
12	5.2	9	System Integrator shall be an IT/ Networking Sector Company. The Bidder or his consortium partners may be either OEM/ IT Services provider/ System Integrators of the national repute dealing with design, supply, install, commission the SDWAN service offering and post implementation operation, maintenance and support.	SDWAN is a relatively new field and not many projects of the same have been implemented. It is requested to allow to the SI with WAN / MPLS experience also. Suggested modification " System Integrator shall be an IT/ Networking Sector Company. The Bidder or his consortium partners may be either OEM/ IT Services provider/ System Integrators of the national repute dealing with design, supply, install, commission the SDWAN / **MPLS** service offering and post implementation operation, maintenance and support		No change in clause is envisaged.
13	5.6	9	SI shall also integrate his systems with those of BSNL and of customer for easy monitoring and fault clearance	What kind and extent of integration of the fault management system has to be provided. Kindly provide details. Ideally SI should be requried to provide a web base FMS and required access can be given to concerned BSNL official and customer representative		Depending on the requirement, BSNL shall provide access to the existing OSS/BSS systems of BSNL and the SI shall have to integrate their system to them.
14	5.7	9	System Integrator shall support SLA requirements of BSNL customers and ensure its compliance. In case SLA commitments are not met, System Integrator shall be responsible for payment of penalties, if any, imposed by the customer on account of failure due to hardware, software, network elements etc., supplied by system integrator.	For SLA calculation and penalty, any penalty imposed by customer on account of BSNL's failure would not be charged to SI. Kindly confirm		Please refer to Clause 31 of the EoI.
15	5.8	9	Once an SI is empanelled in National Category in any of the Circle, it can get empanelled in any other Circle with a consent letter (Annexure- VII). Consent would authorize its home Circle to revoke its BG on the advice of the additional consented Circle. Also, a Circle SI can become SI of any other Circle(s) of its choice on submitting a consent letter as above with an additional BG of Rs 1 Lakh per Circle	Kindly refer to BSNL's EOI for empanelment of National System Integrator - ref. no. - EOI No.: BSNL/NTR/EB-NCR-II/SI/13-14 Dated 12-05-2016. As per the corrigendum no. BSNL/NTR/EB-NCR-II/Circle SI/13-14 dt. 16-10-17 issued for EOI for empanelment of National System Integrator - ref. no. - EOI No.: BSNL/NTR/EB-NCR-II/SI/13-14 Dated 12-05-2016, clause no. 6.0, sub clause 6.1 "Once SI is empaneled in National Category in any of the circle, it can get empaneled in any circle with a consent letter through signatory. Consent letter would authorize its home circle to revoke its BG on the advise of additional consented circle". Basis the above, kindly clarify that a National Level SI is not required to submit additional BG of 1 lac per circle.		Yes. National level SI is not required to submit the additional BG of Rs 1 lakh per circle.

Sno.	Clause No.	Page	EOI Clause/Specification	Query/Clarification	Suggested Change	BSNL Response
16	5.9	9	SI shall also submit additional service PBG of at least 5% of the P.O. value, whenever a work is awarded to Network/ SI valid for the duration of the project. However, in tender cases SI shall submit EMD/PBG as per customer requirement on back to back basis.	As per latest GOI guielines, PBG is restricted at 3% and Bid Security Declaration can be given in lieu of EMD. You are requested to kindly incorporate the same in this clause.		The clause stands revised as: "SI shall also submit additional service PBG of at least 3% of the P.O. value, whenever a work is awarded to Network/ SI valid for the duration of the project. However, in tender cases SI shall submit EMD/PBG as per customer requirement on back to back basis.".
17	5.3	9	System Integrator shall be a direct owner of Technology OR shall have a direct teaming agreement with the Technology company (OEM) that forms the core building block for SDWAN OR a consortium that is capable of providing this service. The core building blocks may be broadly classified as including SDWAN CPEs, Controllers at DC & DR, EMS or equivalent monitoring system for monitoring the link performance etc.	Since there would be multiple SIs at circle level, is there a need for Central UNMS solution monitor, fault, performance, inventory, configuration, ticketing, SLA, provisioning of the PAN India network.		No.
18			System Integrator shall monitor the circuits provided by him 24x7x365 and provide either web-based or IVR-based 24 x 7 Help Centre or any other mechanism as per the requirement of the customer. The help centre should receive all types of complaints from customers and take up with concerned authorities in BSNL for clearance faults as defined in SLA entered with customer. For Support Centres, SI needs to give undertaking as per its category that SI shall work on PAN India (National SIs) or Pan Circle basis as applicable. SI shall also integrate his systems with those of BSNL and of customer for easy monitoring and fault clearance.	Is there expectation on integration with existing HPE supplied MPLS monitoring solution at BSNL.		No. It is expected that the proposed solution shall provide all reports, analytics etc. on its own to the customer for all the links.
19	5.6	9		Would national SI be expected to manage provisioning and assurance of the SD-WAN network across multiple circles PAN India?		Any National SI would be expected to manage provisioning and assurance of SD-WAN network based on the requirements of the customer.
20				Integration should cover fault management at PAN India level?		Depending on the requirement, BSNL shall provide access to the existing OSS/BSS systems of BSNL and the SI shall have to integrate their system to them.
21	5.7	9	In case SLA commitments are not met, System Integrator shall be responsible for payment of penalties,(System Integrator shall support SLA requirements of BSNL customers and ensure its compliance. In case SLA ommitments are not met, System Integrator shall be responsible for payment of penalties, if any, imposed by the customer on account of failure due to hardware, software, network elements etc., supplied by system integrator.)	While SI is expected to provide SLA management system with penalty reconciliation capability, and the SI supplied SLA management system should integrate with the BSNL Unified SLA Management Solution which intern will integrate with BSNL billing system. Is this understanding correct?		The SI supplied SLA management solution shall integrate with the appropriate systems of BSNL to ensure all stake holders are seeing the same data.
22	5.9	9	SI shall also submit additional service PBG of at least 5% of the P.O. value, whenever a work is awarded to Network/ SI valid for the duration of the project. However, in tender cases SI shall submit EMD/PBG as per customer requirement on back to back basis.	**Request yo to make changes** in PBG OF ATLEAST 1.5% TO 3% OF PO Value as per the present Government of India Notification		The clause stands revised as: "SI shall also submit additional service PBG of at least 3% of the P.O. value, whenever a work is awarded to Network/ SI valid for the duration of the project. However, in tender cases SI shall submit EMD/PBG as per customer requirement on back to back basis.".
23	5.11	10	The SI Policy would be non-exclusive, walk-in & open for all eligible categories for the current EoI version which shall remain hosted on STR Circle website. However, STR BSNL would periodically review the existing EoI and may revise the same as per the requirement, latest technical developments etc. The empanelled SIs of earlier version will be allowed a migration period of SIX (6) months to meet the additional requirements of the new EoI.	SI will have to have substantial investments in providing technical setup to provide for this service. Keeping an open ended policy in terms of continous empanelment of SI and un limited technical upgradation would be detriment to the interests of the SI.		No change in Clause is envisaged.

Sno.	Clause No.	Page	EOI Clause/Specification	Query/Clarification	Suggested Change	BSNL Response
24	5.13	10		SI will have to do a lot of investment in terms of technical infrastructure to provide for his service. Back to back payemnt terms are not viable. BSNL should make payment to SI on scheduled milestones, which should not be dependent on BSNL's collection from its customer		Regretted.
25			Payment to System Integrator shall be on back-to-back basis, i.e. as and when customer pays BSNL, BSNL shall pay to System Integrator their share.	What kind of business proposition BSNL is looking for its customers. Will it be on CAPEX or OPEX models. Kindly clarify.		Based on customer requirement, it can be on capex or opex models.
26	5.15. 8	11	SI shall provide 24X7 help center either web based or IVR based (as per details in Clause 5.6). SI shall ensure consultation, assistance and advice within four hours or as defined in SLA entered with customer. In other cases, complaint may be attended within eight hours	Kindly advise on the basis of the calculation of time period of 4 hrs and 8 hrs. Also, kindly advise how BSNL will ensure site access to cutomer premises, if required within this time frame, calculation of SLA in case customer site access is nto available, in case fault is at BSNL end.		The Clause is self explanatory.
27	5.15.10	11	A Bank Guarantee (BG) valid for two and half years shall be submitted by applicants once selected for the empanelment(@ ₹ 15 Lakhs and ₹ 3 Lakhs for National and Circle level SIs respectively) for abiding by the general rules of empanelment agreement. In case of any extension of empanelment, the BG shall be suitably extended.	SI have already submitted BG to BSNL for enrollment at National Level. Asking of another BG for empanelment for this opportunity will be an unnecessary financial burden on SI. You are requested to kindly waive this clause		No change in clause is envisaged.
28	5.15.5	10	Annual Turnover of the Company (for IT/ Networking business) for last two years to be atleast ₹ 10 Crores for National and ₹ 3Crores for Circle category."	Our Turnover for last 3 years is 9.03 Crores (2018-19) and 10.27 Crores(2019-20). We Kindly request you to relax this condition for this year for us to get National Level System Integrators		Regretted.
29	5.15.7	11	In case the SI is not the owner of the SDWAN technology, the SI should provide letters of support from OEM or the authorized channel of OEM stating that their solution will be supported on the platform proposed by SI for the duration of contract and as per customer requirement.	The OEM of national SI should meet minimum experience criteria and support provisioning & monitoring solution across multi vendor setup with multiple circles		The requirement is as per the Clause.
30	5.15.9	11	Minimum Experience of SD-WAN implementation on turnkey basis: At least 10 customers and 1000 CPEs for National and at least 3 customers and 250 CPEs for Circle level; the experience can be in India or abroad; In case of consortium, the experience of the consortium partners shall be counted.	SD-WAN is a new technology & customers have started embracing the technology predominantly in recent time resulting into very few customers having the install base. Hence, most of the System Integrator will not have these many customer reference or CPEs. Requesting to change this clause to accept SD-WAN experience of system Integrator or OEM.	SI or OEM should have minimum Experience of SD-WAN implementation on turnkey basis: At least 10 customers OR 1000 CPEs for National and at least 3 customers OR 250 CPEs for Circle level; the experience can be in India or abroad; In case of consortium, the experience of the consortium partners shall be counted.	The experience can be of the applicant bidder or his OEM. No change with reference to the consortium.
31	5.15.9	11	Details of experience to be supported by Purchase orders and satisfactory implementation certificate or similar documentary proof from the users.	Most of the customers or deals are governed under NDA/confidentiality clause wherein it would be diffcult to provide purchase order or custmters certificate. Request you to allow as per the suggested change.	Details of experience to be supported by Purchase orders and satisfactory implementation certificate or similar documentary proof from the users. Or Name of customer with number of CPEs on OEM letter head. Or Satisfactory Implementation certificate from customer for: At least 10 customers OR 1000 CPEs for National and at least 3 customers OR 250 CPEs for Circle level.	The requirement is revised as: Details of experience to be supported by Purchase orders or satisfactory implementation certificate or similar documentary proof from the users.
32	6.1	11	BSNL will provide the network connectivity including last mile connectivity for each branch location(except SDWAN CPE) and **these would be provided to the end customer on the mutually agreed tariff for the duration of the customer contract.** Provisioning of these links on the BSNL devices will be done by BSNL. Necessary coordination is to be extended by SI for the configuration in the CE device or any other devices.	SI should have rght to refuse to provide the CPE, in case the rates agreed by BSNL with customer and not workable for SI		Regretted.

Sno.	Clause No.	Page	EOI Clause/Specification	Query/Clarification	Suggested Change	BSNL Response
33	6.1.2	12	In case of the alternate links from the Alternate Service Providers (ASPs), BSNL will be responsible for the procurement and contract management of the same and pursuance with the ASP for restoration of any fault/clearance of any issue. All other activities like monitoring, ticket logging etc. shall be done by the SI similar to BSNL provided links.	SI should have their own ticketing tool or can leverage existing BSNL tool?		SI shall have their own ticketing tool.
34	6.1.6	12	BSNL will also consider allowing the bidder access to its Enterprise Business Call Center (EBCC) so that any SDWAN related faults can be booked by the customer. Also, BSNL shall make all efforts to provide connectivity to the existing BSNL OSS/BSS systems so that the existing fault monitoring/restoration mechanism can be followed for these customers as well.	Can bidder leverage existing BSNL helpdesk solution?		Depending on the requirement, BSNL shall provide access to the existing OSS/BSS systems of BSNL and the SI shall have to integrate their system to them.
35	6.1.6	12	BSNL will also consider allowing the bidder access to its Enterprise Business Call Center (EBCC) so that any SDWAN related faults can be booked by the customer. Also, BSNL shall make all efforts to provide connectivity to the existing BSNL OSS/BSS systems so that the existing fault monitoring/restoration mechanism can be followed for these customers as well.	Should bidder integrate the SD-WAN solution EMS with the existing BSNL OSS solution. If yes, then would BSNL arrange for any additional capacity requirements on OSS side?		Depending on the requirement, BSNL shall provide access to the existing OSS/BSS systems of BSNL and the SI shall have to integrate their system to them.
36	6.2.3	13	Case II: Customer is agreeable to locate central equipment in BSNL premises: In this case, the necessary DC & DR are to be installed in BSNL premises and BSNL shall provide the necessary bare physical space and cool air. Necessary UPS, full requirement of hardware, software for DC & DR sites along with the required bandwidth is to be planned by the SI and quote for the same (including services) in the bid. Necessary on site maintenance support as sought in the tender shall have to be provided by the SI for the contract duration. Any additional support required by the BSNL for the realisation of this shall be extended by the SI on cost basis which is to be quoted in the bid.	As the services would be provided from BSNL's DC/DR premises. It would be further meaningful if the option to provide bandwidth can either be provided by SI or BSNL. Request you to change this clause accordingly.		The bandwidth shall be provided by BSNL in this case as well.
37	12.10	17	In case of multiple SIs representing the same SDWAN OEM, BSNL shall empanel the top two to three SIs as per the ranking and meeting other eligibility criterion.	This will lead to unnecessary competition between SI, to the advantage of the OEM. The clause may be suitably modified in accordance with best industry practices		No change in clause is envisaged.
38	15.1	19	The EoI Agreement shall remain in force initially for a period of Two (02) years on non-exclusive basis from the date of empanelment. This agreement shall be valid for its full term unless revoked as per the clauses and mechanism defined in this Agreement. BSNL reserves the right to enter into agreement with other partners also during this period.	The two years period will cover implementation period as well?		The two year period is for empanelment. Implementation and AMC shall be as per the contract signed as per customer requirement.
39	28	26	Bidder is responsible for providing training to group of officers nominated by BSNL on SDWAN while on-boarding the solutions. Typically, a two day training on the overall solution, features, configuration, trouble shooting shall be provided by the bidder to the staff of BSNL. The size of the batch will be about 10.	BSNL will provide the venue for the conduct of training. Kindly confirm		Yes.

Sno.	Clause No.	Page	EOI Clause/Specification	Query/Clarification	Suggested Change	BSNL Response
40	31.1	27	Any penalty levied by the customer shall be passed through to the SI in case of any issue attributable to the SI. Any delays (in supply of the CPEs, commissioning and project rollout, repair and replacement of the CPEs, etc.), improper configurations, SLA non-compliance, improper working of the system etc. shall construe a non-exhaustive indicative list of delays attributable to the SI. **Any Liquidated Damages (LD) levied on BSNL for the delayed rollout of the project shall also be passed on through to the SI after removing the proportionate LD attracted due to any delays in BSNL Scope of Work.**	LD charged by customer due to any delay attributable to BSNL, should be fully charged to BSNL. Kindly confirm		The Clause is self explanatory.
41	31.4	27	Any GST implications on the levy of penalties shall be borne by the SI as BSNL is only seamlessly passing through the same.	BSNL will issue LD invoices to SI to ensure proper GST credits are accounted for. Kindly confirm		Yes.
42	36.3	29	To remove any doubt, it is hereby clarified that nothing contained in above para does not include SI activities related to engaging in advertising and promotional activities relating to service deliverables under a specific contract or efforts to source a service for BSNL.	This clause is not clear. Kindly clarify		The clause may be read along with Clause 36.2
43	38.1.6	31	In case of award of work, the bidder shall install and make ready the controller and the centralized system at the designated locations (DC & DR) within the specified time from the date of award of work. The Controller shall be scalable and shall be possible to realise 2000 CPEs on day-1.	AS per our understanding SI needs to deploy thethe controller and the centralized system in BSNL DC/DR along with necessary Hardware and software as per case no 2 on page no. 10. Please confirm if our understanding is correct? Also as per our recomendation the controller and the centralized system at DC and DR shall support 2500 CPEs from Day-1 and it should support horizontal scaling for future requirements by increasing number of nodes/resureces as and when required. Hence request you to amend this clause as suggested.	In case of award of work, the bidder shall install and make ready the controller and the centralized system at the designated locations (DC & DR) within the specified time from the date of award of work. The Controller shall be scalable to realise 2500 CPEs on day-1 and scale horizontally upto 10000 CPEs for future requirements.	The implementation of the controller and centralized DC/DR shall be as per the customer requirement. The requirement of 2000 CPEs on day-1 may be read as 2500 CPEs on day-1.
44			The SD WAN solution proposed by Bidder shall, generally, comply to the architecture specified in TEC GR No: TEC/GR/IT/SDW-001/01/MAY-19 and shall support the following features:	The TEC GR includes uCPEs as well in the architecture. The proposed solution should have capability to orchestrate across uCPEs as well. Please confirm the understanding		If the bidder is supporting uCPEs, he shall support orchestration across uCPEs as well.
45	38.1.2	30	(i) Zero touch provisioning	Please confirm if the zero touch provisioning is expected over a network across multiple circles including uCPE zero touch provisioning capabilities in the proposed solution		ZTP is required over the network. If the bidder is supporting uCPEs, then ZTP is required for them as well.
46			(iv) Centralized policy driven dashboard-based monitoring and control of the entire WAN.	Please confirm if the centralised capability is expected for PAN India network.		The requirement is as per the Clause.
47			(viii) Automated outage detection and correction.	Please confirm if the centralised automated outage detection and correction capability is expected for PAN India network.		The requirement is for the network to be supplied by the bidder.
48			(ix) Single pane of glass reporting to the customer	The single pane of glass would be for central monitoring team monitoring PAN India network or for end enterprise customer, please confirm		The requirement is as per the Clause.
49	38.1.7	31	Bidder would maintain the entire equipment inventory involved in end-to-end SDWAN solution (including the SDWAN Central Controller, SDWAN CPE device(s) & traditional router(s)).	The inventory application should cover end to end inventory of PAN India Network including SDWAN CPE, uCPE. The inventory should cover device information, status, allow/deny flags for PAN India SD-WAN network		Any feature that allows value add over the requirements of the clause is desirable.
50	38.1.11	31	The network architecture shall be flexible and allow smooth migration of services running on the legacy network on to the new one. It shall be possible to extend the architecture to Extranets, multi-clouds, IoT etc. It shall also allow for policy enforcement from end to end.	What type of services are expected to be migrated on new SD-WAN network? Shopuld this be an automated or manual process?		The services referred to relate to the MPLS/Internet services that the customer may be having and which he may desire to move to the SD-WAN network.

Sno.	Clause No.	Page	EOI Clause/Specification	Query/Clarification	Suggested Change	BSNL Response
51	38.1.17	31	The proposed system shall be capable of supporting centralized authentication system to authenticate network elements of control plane, data plane and NMS management tool.	The capability is expected to cover config/access management on device to define who and how can someone access the uCPE device, installing certificates, identity management, authentication (blocklist, allow list). Please confirm if the understanding is correct.		Generally, Yes.
52	38.1.20	32	The SD-WAN management solution shall provide a single platform to monitor, troubleshoot and maintain the SD-WAN Features and other security features including Firewall, IPS/IDS, URL-filtering.	IPS/IDS is on roadmap, expected to be released in Q3 2021		Query is not clear.
53	38.1.21	32	The offered system shall support Zero Touch Provisioning (ZTP) of CPE device with predefined parameters irrespective of any location and without involvement of central team to bring up a branch site.	ZTP capability is expected for CPE and uCPE both. Please confirm the understanding.		If the bidder is supporting uCPEs, then ZTP is required for them as well.
54	38.1.24	32	The SD-WAN solution shall have capability to notify external systems of events such as faults / alarms.	All alarms should be notified of only correlated alarms?		Generally, the defined faults/alarms are to be notified.
55	38.1.30	32	The SD-WAN solution shall support L3VPN and L2VPN/VPLS, P2P, Internet and Broadband. It shall support IPv4, IPv6 and IPv4 over IPv6 tunnel.	L2VPN/VPLS is supported as underlay transport but cannot be configured as a VPN on appliance		Each bidder may provide his technical readiness for meeting the requirements of the Clause.
56	38.1.31	32	The SD-WAN solution shall support IPv6 and IPv4 routing protocols like OSPF, BGP and static routing.	IPv6 static routing is supported from day one however dynamic routing is on roadmap		Query is not clear.
57	38.1.36	32	System should able to support of current network infrastructure, which operating with underlay infrastructure. Non-disruptive integration into existing networks with full interoperability with existing routing protocols.	"Non-disruptive integration into existing networks with full interoperability with existing routing protocols." Please clarify what routing protocols are in use		Typically, present networks use BGP, OSPF etc. as the routing protocols.
58	38.1.44	33	Enhanced security and policies, security policies for the devices and controllers to be configured to prevent the unwanted intrusion, if required in-depth analysis of traffic for prevention of malicious traffics and internal threats based on alerts generated.	The authentication system is expected to cover config/access management on device to define who and how can someone access the uCPE device, installing certificates, identity management, authentication (blocklist, allow list). Please confirm if the understanding is correct. IPS/IDS is on roadmap, expected to be released in Q3 2021		The requirement is as per the Clause. Noted.
59	38.1.49	33	Network would be functional at the time of connectivity failure between controller and branch device.	In order to avoid any business disruption request you to specify time(such as more than 5 days) of connectivity failure between controller and branch device.	Network would be functional at the time of connectivity failure more than 5 days between controller and branch device.	The maximum time shall be customisable between a period of 2-7 days. Any specific customer requirement may override this.
60	38.1.51	33	E-Mail/SMS and if required Ticketing system to be integrated with SDWAN.	Let us know which ticketing system you have? Does this integrations is required from Day-1 at the time of Central component deployment ?		The SI shall have its own ticketing system.
61	38.1.51	33	E-Mail/SMS and if required Ticketing system to be integrated with SDWAN.	These would be SI supplied systems or BSNL systems? If SI Supplied then would there be need for integration with BSNL systems.		The SI shall have its own ticketing system. Depending on the requirement, BSNL shall provide access to the existing OSS/BSS systems of BSNL and the SI shall have to integrate their system to them.
62	38.2.1	33	The SD-WAN controller shall be multi-tenant/enterprise supporting multiple enterprise customers.	Multi-Tenant capability is recommended to have on all SD-WAN components (Controller, Hubs, Gateway, Reporting and Management) in a MSP to better end to end segmentation. We request you to Amend this point as suggested.	The all SD-WAN components (Controller, Hubs, Gateway, Reporting and Management) shall be multi-tenant/enterprise supporting multiple enterprise customers.	The requirement is as per the Clause.
63	38.2.2	33	The controller shall be centrally located and is to be deployed at BSNL/Customer/SI premises or on Cloud as per the requirements of the customer. The DC & DR shall be in HA mode. The DR site should be preferably EoI No: STR/EB/Platinum11/SDWAN/EOI/2021-22/1 dated 11/06/2021for empanelment of SDWAN SIs Page 34 of 60 in a different seismic zone than the DC site. Both the DC & DR should be in India.	Aruba Orchestrator doesn't participate in data plane in any shape or form and data plane traffic is not affected even if Orchestrator is down for days. Customers can use VM level redundancy		Query is not clear.

Sno.	Clause No.	Page	EOI Clause/Specification	Query/Clarification	Suggested Change	BSNL Response
64	38.3.2	34	It shall support multi-tenant/enterprise supporting multiple enterprise customers as per customer requirement.	For such requirements we can go with single Hardware with multiple Cloud Port Gateway VM to support customer requirements for multi-tenant .		Multi tenant/enterprise support is desirable.
65	38.4.3	34	The solution shall support easy management of patches/ upgrades to SDWAN software centrally.	Apart from patch management should there capability to manage firmware updates together with OS over uCPEs.		If the bidder is supporting uCPEs, then this feature is desirable for them as well.
66	38.5	34	CPE	Please also include additional feature as suggested	Solution should support Multicast traffic over SD-WAN overlay fabric	Support for Multicast is desirable.
67	38.5.1	34	All types of the SDWAN CPEs as mentioned in the TEC GR on SDWAN shall generally be supported.	This would cover uCPE as well as per TEC GR. Please confirm.		Support for uCPE is desirable.
68	38.5.9	35	The CPEs shall be capable of the configurable feature of sending duplicate data over two links for guaranteed delivery of all application data.	**Request to rephrase this clause as :** Device should support forward error correction or packet duplication or equivalent for enhancing end user experience.		Equivalent method(s) for realising the end user experience is acceptable.
69	38.5.11	35	The SD-WAN solution shall assess the performance of the critical voice, video or data applications at any given time and take necessary action to maintain the committed SLAs.	For high quality voice, video experience MOS (mean openion score) is used by leading OEMs along with other WAN performance perrameters such as pakcet loss, jitter and latency. Hence request you to amend this clause as suggested	The SD-WAN solution shall assess the performance of the critical voice, video or data applications at any given time and take necessary action to maintain the committed SLAs. Also Solution should support MOS score based traffic steering for better end-user experience for voice and video traffic.	The requirement is as per the Clause.
70	38.5.15	35	Solution shall support High Availability feature at the CPE.	Is it applicable for uCPE only?		Here High Availability refers to the capability of the CPE to support controller less operation in case the connection to the controller is lost.
71	38.6	35	Self Service Portal	Is BSNL Planning for a common self service portal, cutting acorss all SDWAN vendors in circles/nations-wide?		As of now, no.
72	38.6.1 38.6.2	35	The self-service portal shall be capable of sending communications like Email, text etc. alerts on crossing of any of the user defined thresholds. The self-service portal shall support flexible hierarchical group management, including for group based configuration changes and software updates. Appliances may be grouped according to a hierarchical structure that affords easy management of hundreds of appliances. The customer shall be able to see for himself the various reports and the utilisation details of the links.	This looks like a Cisco properietry service however these reports/alarms can be viewed on Orchestrator itself		The features sought can be implemented in any device by the bidder.
73	38.7	36	Application Identification and Application Aware Routing	Please also include additional feature as suggested	Solution should support custom application signatures based on L3/L4 information to have more granular control on application based polices and visibility.	Regretted.
74	38.7.3	36	The SDWAN solution shall support Network Optimization Functions like TCP Flow Optimization, Packet Duplication, Forward Error Corrections, QoS etc.	**Request to rephrase this clause:** FEC adds Parity bytes which adds up as an overhead on already congested links. Users hardly enable such software features in real time. Request to rephrase the Clause :- "Device should support forward error correction or packet duplication or equivalent for enhancing end user experience"		Equivalent method(s) for realising the end user experience is acceptable.
75	38.7.6	36	The solution shall provide real time behavioural analytics at each WAN hop and also provide predictive analysis to avoid future outages. The system should centrally give the following information in relation to the Application's performances: (i) Applications consuming least bandwidth, most bandwidth, Suspicious applications that are using way more bandwidth than their baseline, Tunnel Performance metrics.	Predictive Analysis for the network performance monitoring is completely seprate solution which involves technologies, such as big data, machine learning, and artificial intelligence. With the Lavelle Networks SD-WAN complete historical data is available for intigration with such predictive tools.		Predictive analysis is optional

Sno.	Clause No.	Page	EOI Clause/Specification	Query/Clarification	Suggested Change	BSNL Response
76	38.7.6	36	The solution shall provide real time behavioural analytics at each WAN hop and also provide predictive analysis to avoid future outages. The system should centrally give the following information in relation to the Application's performances: (i) Applications consuming least bandwidth, most bandwidth, Suspicious applications that are using way more bandwidth than their baseline, Tunnel Performance metrics	There is no behavioural analytics available however reports can be scheduled and Orchestrator can send the reports automatically		Query is not clear.
77	38.7.7	36	The solution shall be flexible enough to support application level policy based routing mapped with defined SLAs.	**Request to rephrase this clause:** Apart from the routing protocol attributes, there are several other factors that impact the path selection process. The network diameter and the heterogeneity of the network entities result in different features and capabilities and also play a significant role in the diversity and the analysis of the selection process of the routing protocol. Lavelle Networks introduces AI technology to understand the live link behaviour and based on the input maneuver the traffic. **Request you to make changes** in the statement as instead of defined SLA , Should guaranteed delivery of traffic/application based on QOS		Equivalent method(s) for realising the end user experience is acceptable.
78	38.8.2	36	All the SD-WAN software/Hardware elements shall support any CA based authentication to authenticate controllers and routers.	"any CA based authentication" is ambiguous line. Please amend this clause as suggested	All the SD-WAN software/Hardware elements shall support PKI based authentication to authenticate controllers and routers.	PKI based authentication is also acceptable for empanelment. However, customer requirement shall be met as per the RFP.
79	38.8.6	36	The SDWAN solution shall support integrated Stateful Firewall with application visibility (Layer 4 - Layer 7), Zone based firewall, IDS/IPS and URL Filtering for Split tunnelled and local internet break out. Proposed hardware shall have all security features.	IPS/IDS is on roadmap, expected to be released in Q3 2021		Query is not clear.
80	38.8.6	36	The SDWAN solution shall support integrated Stateful Firewall with application visibility (Layer 4 - Layer 7), Zone based firewall, IDS/IPS and URL Filtering for Split tunnelled and local internet break out. Proposed hardware shall have all security features.	Few customers may ask for Advanced security features in order to provide better security and reduce the attack surface for inbound and outbound traffic over public internet, please also include advance UTM security features such as Antivirus, File-filtering. Hence requesting to you amend this clause as suggested	The SDWAN solution shall support integrated Stateful Firewall with application visibility (Layer 4 - Layer 7), Zone based firewall, IDS/IPS, **Antivirus, File-filtering** and URL Filtering for Split tunnelled and local internet break out. Proposed hardware shall have all security features.	Anti virus and File-filtering are desirable and can be provided as per customer requirements.
81	38.8.11	37	Locations deployed with Direct Internet Access should be provided complete visibility against DNS attacks and should have capability to provide recursive DNS analysis feature. This DNS level security should protect against malware irrespective of ports and protocols used by malware (bot net, exploit kits, phishing).	This service is not available on the appliance however customers can integrate with 3rd party cloud security partners like Zscaler, Prisma, Cloudguard to achieve this		It is flexible for the bidder to provide security features inhouse or have a tieup with third party for security features.
82	38.8.11	37	Locations deployed with Direct Internet Access should be provided complete visibility against DNS attacks and should have capability to provide recursive DNS analysis feature. This DNS level security should protect against malware irrespective of ports and protocols used by malware (bot net, exploit kits, phishing).	To Achieve this DNS filtering should be combined with IP Filtering, URL Filtering, AV, File Filtering and IPS. So requesting you to amend this clause as suggested	Locations deployed with Direct Internet Access should be provided complete visibility against DNS attacks and should have capability to provide recursive DNS analysis feature. The solution should support protection against threats (such as Malware, botnets, exploits, Phishing, etc.) by using NGFW/UTM features.	It is flexible for the bidder to provide security features inhouse or have a tieup with third party for security features.
83	38.8.11	37	Locations deployed with Direct Internet Access and subscribing to firewall feature should be provided complete visibility against DNS attacks and should have capability to provide recursive DNS analysis feature. This DNS level security should protect against malware irrespective of ports and protocols used by malware (bot net, exploit kits, phishing).	Can be supported via secure service chaining with Cloud Security (SASE).		Query is not clear.

Sno.	Clause No.	Page	EOI Clause/Specification	Query/Clarification	Suggested Change	BSNL Response
84	38.8.14	37	The firewall shall support Firewall for stateful blocking, IPS (minimum 12000 signatures) /IDS, Anti-malware functionality (to enable branches to break- out). IPS must support network traffic normalisation and evasion prevention techniques against stealth cyber attack methods.	All features are needed for remote proxy where actual content inspection takes place. Doing it on Edge device would impact the network performance because of extra compute. Hence we support secure service chaining for remote proxy or cloud security to provide complete security. More than this, devices are stateful firewall and with ACL policies, complete network security is provided by giving access to trusted users and applications.		Equivalent method(s) for realising the end user experience is acceptable.
85	38.8.14	37	The firewall shall support Firewall for stateful blocking, IPS (minimum 12000 signatures) /IDS, Anti-malware functionality (to enable branches to breakout). IPS must support network traffic normalisation and evasion prevention techniques against stealth cyber attack methods.	IPS/IDS is on roadmap, expected to be released in Q3 2021		Query is not clear.
86	38.8.15	37	The SD-WAN may support DDOS functionality and protect DDOS attack like UDP Flood, ping of Death. The router should support functionality to protect the route processor from unnecessary or malicious levels of traffic including DOS attacks	DOS protection is in roadmap		Query is not clear.
87	38.9.7	38	It shall have the capability to control traffic patterns and have dynamic traffic management feature to manage the SLAs.	**Request you to make changes** in the statement as instead of defined SLA, Should guaranteed delivery of traffic/application based on Priority.		Equivalent method(s) for realising the end user experience is acceptable.
88	38.11 38.11.1		Reliability: The solution shall support redundancy of control Plane and management plane irrespective of whether they are on cloud or prem. The SDWAN Controller shall have High Availability (HA) with geo redundancy in DC & DR.	Aruba Orchestrator doesn't participate in data plane in any shape or form and data plane traffic is not affected even if Orchestrator is down for days. Customers can use VM level redundancy		Query is not clear.
89	38.12.10		The offered solution shall have capability to have software image management service, remote upgradation service for SDWAN devices centrally across enterprise network.	Should the solution have capability to manage History of CPE & uCPE device configurations, config file storage and lifecycle/versioning management capability.		It shall be desirable to have these features over and above the one sought in the Clause.
90	38.11.2	39	In case of any data plane routers getting isolated from the control and management planes, the services shall not be degraded.	As per above serial no. 5 ("Non-disruptive integration into existing networks with full interoperability with existing routing protocols." Please clarify what routing protocols are in use)	In case of any data plane routers getting isolated from the control and management planes for more than 5 days, the services shall not be degraded.	The maximum time shall be customisable between a period of 2-7 days. Any specific customer requirement may override this.
91	TEC GR 3.7.6	28	i) The overlay services layer3 VPN/L2 VPN and Ethernet Services – P2P layer2 VPNs, P2MP layer2VPNs, MP2MP layer2VPNs. (optional to the purchaser)	Request you to amend this clause as suggested	i) The overlay services layer3 VPN/L2 VPN and Ethernet Services – P2P layer2 VPNs/P2MP layer2VPNs/MP2MP layer2VPNs/EVPN VXLAN. (optional to the purchaser)	Support for EVPN VXLAN is desirable.
92	TEC GR 3.10.14	34	ii) Jitter buffer on CPE devices shall be supported when WAN links experience jitters	A jitter buffer is a temporary storage buffer used to capture incoming data packets. It is used in packet-based networks to ensure the continuity of audio streams by smoothing out packet arrival times during periods of network congestion. We request you to use better alternative to achieve same functionality using MOS based traffic forwarding . Hence we request you to amend this clause as suggested.	CPE devices shall support MOS (Mean Opinion Score) for voice/video traffic	The requirement is as per the Clause.