

Tender No. RailTel/Tender/OT/CO/P/2017-18/VSS/432

Corrigendum No.- 3

Name of Work: "Supply, Installation, Testing, Commissioning, Operation and Maintenance of IP based Video Surveillance System (VSS) at various Railway Stations of A1, A, B, C, D and E category of Indian Railways for four (4) packages under Northern, West-ern, Eastern and Southern Region's of RailTel for and on behalf of RailTel Enter-prises Limited and Indian Railways"

Last Date of submission of the bids: Extended from 12.10.2018 to 25.10.2018 upto 15: 00 Hrs. Tender shall be opened at 15:30 Hrs on 25.10,2018.

Page	Clause	Original Clause	Amended clause
Chapter-2			
8-44	All	Schedule of Requirement (Complete Chapter)	This is replaced by the revised SOR
Chapter-3			
52	3.A.1.17	(a) Additional item	The tentative list of stations where VSS is proposed (subject to change marginally) is being uploaded
		(c) Additional Clause for Box/Bullet Type Camera	Where ever Bullet type IP colour camera is mentioned, the same should be read as Box/Bullet type I.P. colour camera
		(d) Additional Clause for video compression	Wherever H.265 is mentioned in the tender document, it should be read as per the RDSO specification No. RDSO/SPN/TC/65/2016/Rev. 4.0 or latest (with latest amendment).
		(e) Additional Clause for storage reliability	Wherever RAID 5 or 6 is only mentioned in the tender document, it should be read as per the of RDSO specifications No. RDSO/SPN/TC/65/2016/Rev. 4.0 or latest with all amendments,
		IP based cameras could be Dome type, PTZ Type and Fixed Bullet and 4K UHD Cameras. Below are major listed areas, which will cover by various type of cameras:	IP based cameras could be Dome type, PTZ Type and Fixed Box/Bullet and 4K UHD Cameras. Below are major listed areas, which will cover by various type of cameras:
61	3 B.4	a) Platform, Foot over areas should be covered by Fixed Bullet cameras b) Entry/Exit should be covered by 4K UHD Bullet cameras. c) Ticketing Counter.....	a) Platform, Foot over areas should be covered by Fixed Box/Bullet cameras b) Entry/Exit should be covered by 4K UHD Box/Bullet cameras. c) Ticketing Counter.....

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62	3.B.6.2	Each RPF/GRP Thana/Post location will have architecture for connectivity of Server(s) for Video Recording, Video Analytics and FRS, external storage system etc. Network design at RPF/GRP Thana/Post will consist of a 24 ports Type-III switches. These switches will have redundant power supply with bottleneck free stacking bandwidth. These feature will ensure that both these switch will work as a single logical unit and 1:1 redundant at same time. A robust security layer will be there in form of next generation firewall and IPS combination. All RPF users will have restricted access to these systems for monitoring and playback stream through firewall and IPS. All 3rd party users who may access these systems via internet on some specific occasions on incidents will make a secure VPN connectivity to access these systems and will have time bound and restricted access to these systems.	Each RPF/GRP Thana/Post location will have architecture for connectivity of Server(s) etc. for Video Recording, Video Analytics and FRS, external storage system etc. Network design at RPF/GRP Thana/Post will consist of a 24 ports Type-III switches. These switches will have redundant power supply with bottleneck free stacking bandwidth. These feature will ensure that both these switch will work as a single logical unit and 1:1 redundant at same time.
		Tentative network diagram for Station or RPF/GRP Thana/Post is as under:	Tentative network diagram for Station or RPF/GRP Thana/Post stands corrected as under: Since the NGFW at RPF/GRP Thana/Post is deleted from the SOR, the connectivity to the RPF users shall be directly from the Type-III switch and to RB/Min./Police users shall be through the firewall of DC/DR and RailTel MPLS backbone.
		Tentative access and video traffic flow is shown on diagram given below:	Tentative network diagram for Station or RPF/GRP Thana/Post is stands corrected as under: Since the NGFW at RPF/GRP Thana/Post is deleted from the SOR, the video traffic flow to the RPF users shall be directly from the Type-III switch and to RB/Min./Police users shall be through the firewall of DC/DR and RailTel MPLS backbone.
63	3.B.7	3.B.7 Architecture of VSS system for stations The offered solution for video management system (video management software & recording software) server hardware should be duly vetted and supported with certifications issued by OEM.	3.B.7 Architecture of VSS system for stations The offered solution for video management system (video management software & recording software) server hardware etc. should be duly vetted and supported with certifications issued by OEM.
Chapter-4			

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80/162	4.A.4/5/2	4.A.4. Deleivery/Implementation Timeline. 5.2 OEM agrees to support.....	The actual date of commencement of 12 months of maintenance supervision period shall be after the signing of PAC. The project period to be adhered shall be in line with clause 4.A.4.
95	4.A.14.1	3. Financial Ca-pability: The bidder should have re-ceived a minimum cumulative contract amount from the Secu-rity/IT/Telecom business in the last three financial years plus current year upto the date of opening of tender. For Package-I: Northern Re-gion: Rs. 365.31 Crores For Package-II: Western Re-gion: Rs. 235.18 Crores For Package-III: Eastern Re-gion: Rs. 386.97 Crores For Package-IV: Southern Re-gion: Rs. 314.27 Crores Note:- In case of Consortium/JV, each member's relevant turnover combined together shall be considered against the above mentioned financial ca-pability criteria.	3. Financial Ca-pability: The bidder should have re-ceived a minimum cumulative contract amount from the operations in the last three financial years plus current year upto the date of opening of tender. For Package-I: Northern Region: Rs. 365.31 Crores For Package-II: Western Region: Rs. 235.18 Crores For Package-III: Eastern Region: Rs. 386.97 Crores For Package-IV: Southern Region: Rs. 314.27 Crores Note:- In case of Consortium/JV, each member's relevant turnover combined together shall be considered against the above mentioned financial ca-pability criteria.
101	4.A.14.1.3	4. The OEM for proposed IP cameras and VMS Software should have supplied for at least one project in a Mass Rapid Transport system e.g. Metro, Railways, Mono Rail, Airport etc. in India or abroad in last 3 financial years (i.e. current year and three previous financial years) from the date of opening of tender. The same should have been working satisfactorily for at least six (6) months.	4. The OEM for proposed IP cameras, VMS Software & FRS should have supplied and successfully commissioned for at least one project in a Mass Rapid Transport system e.g. Metro, Railways, Mono Rail, Airport or other Govt. agency in India or abroad in last 3 financial years (i.e. current year and three previous financial years) from the date of opening of tender. However in case of FRS, if the successful commissioning certificate is from abroad, the bidder shall arrange for its testing by RailTel involving Indian faces under actual Indian environment for verifying its effeciency and performance in India, during technical evaluation of the bids.
Chapter-6			
165	Form-23	The last line of the page : "(This letter should be on the letterhead of the OEM duly signed by an authorized signatory)"	The last line of the page : "(This letter should be on the letterhead of the bidder duly signed by an authorized signatory)"
Chapter-7			
169	Table	(Row-2, Column-1)=Fixed Bullet Type Camera	(Row-2, Column-1)=Fixed Box/Bullet Type Camera

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Page	Clause	Original Clause	Amended clause
207	8.1	Chapter-8 0	1.1. IP Cameras of Fixed Box/Bullet type, Fixed Dome type, P/T/Z type and 4K UHD Fixed Box/Bullet type IP colour camera at stations: The box type cameras shall have the built in infra red (working on same POE port) illuminator with range of 20 m or more. However regulatory compliances as mentioned for the respective cameras in RDSO specs, shall be applicable on this IR system also.
207	8.1.1	Additional	The minimum focal length of the lenses of FHD bullet type IP camera shall be 2.8-12mm. However in case the bidder finds the need of higher focal lengths as a part of the solution, he may offer the lenses with higher focal lengths.
207	8.1.2	Additional	The minimum focal length of the lenses of 4k UHD bullet type IP camera shall be 4.5-10mm. However in case the bidder finds the need of higher focal lengths as a part of the solution, he may offer the lenses with higher focal lengths.
209-210	8.3.1.2	Approximate number of cameras considered across 6124 Railway Stations are 89844 units. Refer Chapter-7 Annexure-I for station category, Region wise camera breakup. Video feed from cameras of group of stations (cluster) shall be stored in external storage for 30 days on H.265 at RPF/GRP Thana/Post. At each such cluster i.e. RPF/GRP Thana/Post location, bidder to size storage, server requirement and propose a solution considering re-cording of 200 FHD cameras, analytics on 40 cameras, FRS with local matching capability with the watchlist database on up to 12 cameras stream at each RPF/GRP Thana/Post locations without any impact on the performance of the system and overall solution requirement. In case, it is unable to do so on a single server, extra server(s) required for the same shall be provided by the bidder without any cost to the purchaser. Bidder to also propose a redundant server for video recording at RPF/GRP Thana/Post (N:1 redundancy for video recording at RPF/GRP Thana/Post, and no redundancy of server for VA and FRS) per RPF/GRP Thana/Post location to ensure uninterrupted video recording services as mentioned in above para in case of failure of main server. Bidder to submit the calculations done to reach the quoted servers numbers, duly vetted and supported with certifications issued by OEM(s).....	Approximate number of cameras considered across 6124 Railway Stations are 89844 units. Refer Chapter-7 Annexure-I for station category, Region wise camera breakup. Video feed from cameras of group of stations (cluster) shall be stored in external storage for 30 days on H.264/ H.265 at RPF/GRP Thana/Post. At each such cluster i.e. RPF/GRP Thana/Post location, bidder to size storage, server requirement and propose a solution considering re-cording of 200 FHD cameras, analytics on 40 cameras, FRS with local matching capability with the watchlist database on up to 12 cameras stream at each RPF/GRP Thana/Post locations without any impact on the performance of the system and overall solution requirement. In case, it is unable to do so on a single server, extra server(s) required for the same shall be provided by the bidder without any cost to the purchaser. Bidder to also propose a redundant server for video recording at RPF/GRP Thana/Post (N:1 redundancy for video recording at RPF/GRP Thana/Post, and no redundancy of server for VA and FRS) per RPF/GRP Thana/Post location to ensure uninterrupted video recording services as mentioned in above para in case of failure of main server. Bidder to submit the calculations done to reach the quoted servers numbers, duly vetted and supported with certifications issued by OEM(s).....

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209	8.3.1.1.5	Bidder to proposewithout any extra cost. Bidder to also propose an external storage solution at RailTel Datacenter for keeping flagged/marked video data by RPF/GRP personnel for longer retention, FRS & VA alerts across all stations within the jurisdiction of RailTel Region for 30 days, Audit trail logs, application data etc. as per solution requirement and sizing as per SOR.	Bidder to proposewithout any extra cost. Bidder to also propose an external storage solution at RailTel Datacenter for keeping flagged/marked video data by RPF/GRP personnel for longer retention, FRS, VA & EMS alerts across all stations within the jurisdiction of RailTel Region for 30 days, Audit trail logs, application data etc. as per solution requirement and sizing as per SOR.
211	8.3.2.3.1.1/A & B	(A) On Station collocated with RPF/GRP Thana/Post: i) One Full HD stream (@1080P and @25FPS) from Full HD Camera on H.265 and ii) One UHD stream at resolution 3840x2160 and @ 15FPS from 4K UHD Camera on H.265 should be recorded for 30 days in external storage at RPF/GRP Thana/Post. (B) On other stations: i) One Full HD stream (@1080P and @25FPS) from Full HD Camera on H.265 and ii) One UHD stream at resolution 3840x2160 and @15FPS from 4K UHD Camera on H.265 should be recorded for 7 days in Video Recording & Processing Unit. iii) One HD stream (@720P and @25FPS) from Full HD Camera on H.265 and iv) One FHD stream (@1080P and @15FPS from 4K UHD Camera on H.265 should be recorded for 30 days in external storage at RPF/GRP Thana/Post.	(A) On Station collocated with RPF/GRP Thana/Post (in external storage): i) One Full HD stream (@1080P and @25FPS) from all Full HD & all 4K UHD Camera on H.264/H.265 should be recorded for 30 days in storage. ii) One UHD stream at resolution 3840x2160 and @ 15FPS from all 4K UHD Camera on H.264/H.265 for FRS processing. Reco (B) On other stations: i) One Full HD stream (@1080P and @25FPS) from all Full HD Camera & all 4K UHD on H.264/H.265 should be recorded for 7 days. ii) One UHD stream at resolution 3840x2160 and @15FPS) from all 4 K UHD Camera on H.264/H.265 for FRS processing at RPF/GRP Thana/Post. iii) One Full HD stream (@1080P and @25FPS) from all Full HD Cameras and all 4K UHD cameras on H.264/H.265 should be recorded for 30 days in RPF/GRP Thana/Post Note: 1 Recording should be available continuously for 24 hours daily. 2. Multiple streams of cameras/ multicasting/ other techniques/ technology may be made use of for using the same stream for more than one purposes.
211	8.3.2.3.1.3	The FRS will get the UHD feed from Recording Server at RPF/GRP Thana/Post for running Face Recognition algorithm and send alarms to designated clients at RPF/Div. HQ (Control Room)/others.	The FRS will get the UHD feed from FHD or 4K UHD camera/Recording Server/VRPU at RPF/GRP Thana/Post for running Face Recognition algorithm and send alarms to designated clients at RPF/Data Centre/others.
212	8.4	8.4 The storage capacity shall be as per storage requirement of Full HD and 4K UHD camera as defined in tender clause 8.3 and other scalability requirements as mentioned in the tender document. The storage capacity should be calculated considering RAID6 configuration.	8.4 The storage capacity shall be as per storage requirement of Full HD and 4K UHD camera as defined in tender clause 8.3 and other scalability requirements as mentioned in the tender document. The storage capacity should be calculated considering RAID 5/6 configuration.

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212	8.6.1	8.6.1 PC Workstation..... Additional item	The work stations shall be provided with updated anti-virus & anti malware software during the currency of the contract.
212	8.6.2.3	Bidder to propose switch having Operating Temperature and Storage Temperature as per environmental requirement.	Bidder to propose switch having Operating Temperature and Storage Temperature as per environmental requirement. However the switches should be capable of working at temperature 0 to 45 degree (minimum)
212-214	8.9	2. Should have minimum 2 nos. SFP+ based 10 GE ports. 15. Should support following for min. 64 Groups : i.) IGMP Snooping, MLD Snooping v1/v2	2. Should have minimum 4 nos. SFP+ based 10 GE ports. Should support following for min. 64 Groups : i.) IGMP Snooping, MLD.
215	8.10	24 i. Bidder to propose switch having Operating Temperature and Storage Temperature as per environmental requirement.	24 i. Bidder to propose switch having Operating Temperature and Storage Temperature as per environmental requirement. However the switches should be capable of working at temperature 0 to 45 degree (minimum)
216	8.11	24. Bidder to propose switch having Operating Temperature and Storage Temperature as per environmental requirement.	24. Bidder to propose switch having Operating Temperature and Storage Temperature as per environmental requirement. However the switches should be capable of working at temperature 0 to 45 degree (minimum)
220	8.13.3	8.13.3. SFP+ (80Knm) 2. Should support 80Knm optical distance.	14/iii. Shall also support MPLS with RSVP and LDP signalling. It shall support MPLS FRR, L-3 VRF, L-2 VPN and VPLS with upto 64 VRF/L2VPN/VPLS. 14/v. Shall support at least 1K MPLS labels. 14/vi. Shall support 10K for IPv4 routes and 1K for IPv6 routes. 14/ix. Shall support MPLS based L3 and L2 VPN services.
221	8.13.4	2 Should support 10 km optical distance (1550/1310 nm). 4. Should have 10 Gigabit Ethernet capacities on multi-mode fiber.	14/ix. Shall support MPLS based L3,L2 VPN & VPLS services.
224	8.14.2	4.2 Firewall should support 802.3ad ether channel functionality for the failover control & data interfaces for provide additional level of redundancy.	14. Bidder to propose switch having Operating Temperature and Storage Temperature as per environmental requirement. However the switches should be capable of working at temperature 0 to 45 degree (minimum)
224	8.14.2	4.4 Firewall should support 802.3ad ether channel functionality to increase the bandwidth for a segment.	4.4 Firewall should support 802.3ad functionality to increase the bandwidth for a segment.
228	8.16.1.5	8.16.1.5 Input Power Factor correction: 0.99	8.16.1.5 Input Power Factor correction: 0.9
	8.16.1.9	8.16.1.9 Frequency output: 50Hz/60Hz frequency	8.16.1.9 Frequency output: 50Hz +/-0.5Hz
	8.16.1.10	8.16.1.10 Voltage Range (Bypass): 120VAC-288V AC	8.16.1.10 Voltage Range (Bypass): 160VAC-270V AC
	8.16.1.11	8.16.1.11 V threshold: 2%max full linear load,5% max on Nonline-ar load	8.16.1.11 V threshold: 3%max full linear load,6% max on Nonline-ar load
	8.16.1.12	8.16.1.12 Input Power Factor correction: >=0.99	8.16.1.12 Input Power Factor correction:>= 0.9


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227	228-229	8.16.2	24/C. Tel line surge protection-- inbuilt 24/F. Size: not more than 2U rack mountable. New/Additional item	24/C. Input AC mains and output power supply surge protection-- inbuilt 24/F. Should be in Rack/ Tower format to be placed inside rack. 25. The batteries of the UPS are to be placed in the cabinet/Rack which may be platform/wall mounted or ground based rack etc. (to be supplied with UPS) as per the site conditions. 5. Input Power Factor correction: 0.9 9. Frequency output: 50Hz +/-0.5Hz 10. V threshold: 2% max full linear load, 5% max on Nonlinear load 11. PF= >=0.99
		8.16.2	24/D. Tel line surge protection-- inbuilt 25. B Safety: EN or equivalent BIS/IS standard. 26. New/Additional item	24/D. Input AC mains and output power supply surge protection-- inbuilt 25. B Safety: EN or equivalent BIS/IS/IEC standard. 26. The batteries of the UPS are to be placed in the cabinet/Rack which may be platform/wall mounted or ground based rack etc. (to be supplied with UPS) as per the site conditions in secure place of station.
229-230		8.16.3	5. Voltage Range (Bypass): 305-470 VAC (3 phase) @ 100% load 16. Output Frequency @ line mode: 46-54Hz @50Hz system 17. Output Frequency @ Battery mode: 46-54Hz @50Hz system 18. Frequency Converter Mode (CVCF): 50/60Hz 44. Additional item 45. Additional item 46. Additional item	5. Voltage Range (Bypass): 330-460 VAC (3 phase) @ 100% load 16. Output Frequency @ line mode: 50Hz +/-0.5Hz @50Hz system 17. Output Frequency @ Battery mode: 50Hz +/-0.5Hz @50Hz system 18. Frequency Converter Mode (CVCF): 50Hz 44. Communication : SNMP V1/V2 45. Surge Protection: Input AC mains and output power supply surge protection-- inbuilt 46. Provision of cabinet/ rack etc. as per site requirement for the placing of batteries is in the scope of bidder.

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231	8.18	1. Bidder to propose an Open (Non-proprietary) hardware-based unit to be installed at Stations. 2. Video Recording & Processing Unit shall be installed at each platform/station and shall have Software for Video Management, Video Recording and Analytics as defined in Tender Clause 8.3. In case of MPLS/IP network connectivity failure, video stream and alarms would be stored locally at the Video Recording & Pro-cessing Unit for that duration and would transfer these data automatically to RPF/GRP Thana/Post when the network recovers without any impact on the sys-tem operations. 3. Video Recording & Processing Unit shall send alerts to respective RPF Thana/Post, Divisional HQ (Control Room) and Centralized locations on real time basis through the available MPLS/IP network. 4. Video Management System and Video Analytic system etc. applications shall be hosted on this platform as per solution requirement. 5. Bidder to propose single unit hardware on each platform/station of Railway Station to achieve the functionalities as defined above. 6. Technical Requirements: As per RDSO Specification Clause 4.2 of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2016 Revision 4.0 or latest with all amendments.	1. Bidder to propose an Open (Non-proprietary) hardware-based unit to be installed at Stations. 2. Video Recording & Processing Unit shall be installed at each platform/station and shall have Software for Video Management and Video Recording as defined in Tender Clause 8.3. In case of MPLS/IP network connectivity failure, video data and alarms would be stored locally at the Video Recording & Pro-cessing Unit for that duration and would transfer these data automatically to RPF/GRP Thana/Post when the network recovers without any impact on the sys-tem operations. 3. Video Recording & Processing Unit (VRPU) shall receive VA and FRS alerts from the respective RPF/GRP Thana/Post. 4. Technical Specifications and Requirements: As per RDSO Specification Clause 4.2 or 3.0 of IP Based Video Surveillance System Specification no. RDSO/SPN/TC/65/2016 Revision 4.0 or latest with all amendments. 5. VRPU unit should have RAID 5/6 capability to provide data redundancy.
232	8.20 A	x) Pigtails shall be color coded similar to the fiber color coding. xiv. Insertion loss=<0.2 dB	x.. Pigtails shall be labelled through colour coding/ferruling. xiv. Insertion loss=<0.3 dB xx. Preferred type of connector is SC/APC for all connectors.
232	8.20 B	i) Operating Temperature= -60 to $+85$ degree C.	i) Operating Temperature= -40 to $+85$ degree C x. Preferred type of connector is SC/APC for all connectors.
233	8.21	4. Front Door: Rack should have front door tough and transparent glass fitted on MS/CRCA sheet on sides with Lock and key. MS/CRCA door plain having ventilation holes bottom side with dust filters.	4A. Front Door: Rack should have front door tough and transparent glass fitted on MS/CRCA sheet on sides with Lock and key. 4B. Rear Door: MS/CRCA door plain having ventilation holes bottom side with dust filters.
234	8.22	17. Rack should be minimum IP54 certified. Rack should also comply with EIA310/DIN 41494	17. Rack should also comply with EIA310/DIN 41494

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235	8-23	• The EMS Solution (Hardware & Software) shall provide future scalability with the capacity to handle 80,000 devices from Day 1 without major architectural changes. Whenever required, the additional device licenses can be procured & added respectively. - Consolidate IT event management activities into a single operations bridge that allows NOC operator quickly identify the cause of the IT incident, reduces duplication of effort and decreases the time it takes to rectify IT issues. • Offer relevant tools, graphs in context of a selected event.	• The EMS Solution (Hardware & Software) shall provide future scalability with the capacity to handle 20,000 devices from Day 1 without major architectural changes. Whenever required, the additional device licenses can be procured & added respectively. - Consolidate IT event management activities into a single operations bridge/dashboard that allows NOC operator quickly identify the cause of the IT incident, reduces duplication of effort and decreases the time it takes to rectify IT issues. • Offer relevant tools, graphs in context of a selected event.
235	8-23	Consolidated dashboard of the proposed EMS solution shall be the manager of managers and capable of receiving events/alerts from multiple monitoring systems including system, network, storage, hardware, and application.	Consolidated dashboard of the proposed EMS solution shall be the manager of manager's window and capable of receiving events/alerts from multiple monitoring systems including system, network, storage, hardware.
235	8-23	Instruction Text (knowledge base) integrated into events.	Instruction Text (knowledge base) integrated into events/alerts for which incident tickets were created with ability to define trouble shooting steps.
236	8-23	Tool should allow to browse performance metrics by selecting CIs or events. New Performance Perspectives allow you to compare graphs of different CIs in the Model Explorer.	Tool should allow to browse performance metrics by selecting device of the CIs or events. Tool should allow to compare different performance matrix of a device/ CI in GUI/ Model explorer.
236	8-23	Should provide reports that can prove IT service quality levels, such as application response times and server resource consumption in the same report	Should provide reports that can prove IT service quality levels, such as application response times and server resource consumption.
236	8-23	Server reporting tool should be able to collect and collate specific information regarding the relationships between the IT elements and the business services.	Server reporting tool should be able to collect and collate information regarding the resource utilisation, relationship of a business service with infrastructure elements and its SLA performance.
237	8-23	• Should be able to generate a graphical representation of your network. Identify which de-vices are inactive or out of compliance. Detecting noncompliance, issuing alerts and pro-posing remedial action. In a misconfiguration, rollback should be automated. The ability to compare configurations is invaluable; system changes must be logged. • Automate routine configuration tasks for updates, such as password or community string changes. Reduce the time needed to build automation scripts and increase accuracy with auto-generated scripts derived from device sessions.	• Should be able to generate a graphical representation of your network. Identify which de-vices are inactive or out of compliance. Detecting noncompliance, issuing alerts. The ability to compare configurations is invaluable; system configuration changes must be logged. • Automate routine configuration tasks for updates, such as password or community string changes, configuration upload and download, compare configs, bulk configurations, config backup.

238	8.23	The proposed Helpdesk tool should be Axelos Gold level certified on at least 11 ITIL 2011 processes on all the 15 ITIL processes that are the most mature way to demonstrate that at least three IT organizations : Incident management, Problem Management, Change Management, Knowledge Management, Service Level Management, Service Asset and Configuration management, Service Catalogue and Request Fulfilment, etc. The certification copy to be submitted.	The proposed Helpdesk tool should be Axelos Gold level/Pink Elephant certified on at least 11 ITIL 2011 processes of all the ITIL processes that are the most mature way to demonstrate that at least three IT organizations : Incident management, Problem Management, Change Management, Knowledge Management, Service Level Management, Service Asset and Configuration management, Service Catalogue and Request Fulfilment, etc. The certification copy to be submitted.
239	8.23	Support for port aggregation protocols like LACP (Link Aggregation Control Protocol), MLT (Multi-Link Trunking), and SMLT (Split MLT), including visual map-based views & automatic impact assessment based on the relationships between physical and virtual links.	Support for port aggregation protocols like LACP (Link Aggregation Control Protocol), including visual map-based views & automatic impact assessment based on the relationships between physical and virtual links.
240	8.23	- A variety of reports summarizing the data including: Home page summary, Calendar, Heat chart, Headline, Dashboard, Managed inventory report, Top ten, Most changed, Data explorer. - Store as-pollled data for up to 24 months	- A variety of reports summarizing the data including: Home page summary/trend summary, Calendar, Heat chart, Headline, Dashboard, Managed inventory report, Top ten, Most changed/occurring events, Data explorer. - Store as-pollled data for up to 12 months
244-247	8.26.1	Specifications of Display wall, management software and wall Controllers	As per revised specs of the corrigendum
247	8.26.2	Bidder is also responsible for developing a mobile for Android as well as Apple iOS based smartphones to allow secure access of VMS Servers' live and recorded video streams using smartphone or a tablet from almost anywhere. This should be easy to use application allowing simultaneous multiple camera monitoring.	Bidder is also responsible for developing a mobile App for Android, windows as well as Apple iOS based smartphones to allow secure access of VMS Servers' live and recorded video streams using smartphone or a tablet from almost anywhere. This should be easy to use application allowing simultaneous multiple camera monitoring.

See

Chapter-8, Clause 8.26.1 (Page-244-247)

Specifications of display Wall

Item (description as per uploaded tender and now proposed)	Specifications (as per uploaded tender document)	Proposed Specification (in corrigendum)
Display Wall Screen Size	70"	55" or more LED Screen (commercial type suitable for 24x7 Hrs operation).
Projection Technology	DLP Rear Projection Display Cubes	Deleted
Native Resolution per cube	1920x1080	1920x1080 (FHD)
Aspect Ratio	16:09	16:09
No. of Modules	4 [2 (Columns) x 2 (Rows)]	4 [2 (Columns) x 2 (Rows)]
Light Source	LED (R/G/B)	LED
Brightness	Minimum 300 cd/m2	Minimum 300 cd/m2
Brightness Uniformity	95%	Deleted
Contrast ratio	Typical 1600:1	Typical 1400:1
Color Calibration	Automatic inbuilt sensors for Contionous colour and brightness management mechanism to be provided.	Automatic inbuilt sensors for Contionous colour and brightness management mechanism to be preferred.
Connectivity	Each display Module shall support 4HD @ 30Hz inputs	Each display Module shall support 4HD @ 30Hz inputs or higher.
Full viewing angle	180°	HxV: 178x178
Lifetime	Normal mode: 60,000h Eco mode: 80,000h	Normal mode: 60,000h Eco mode: 80,000h
Inputs	Dual link DVI-D in/out	Single link DIV In/Out
Power	100 - 240 VAC, 60 - 50Hz, (below values are for 230V; 110V +5%)	To work on power supply 100 - 240 VAC, 50Hz
Eco mode	Less than 120 Watt	Deleted
Heat Dissipation		Deleted
Eco mode	Less Than 400 BTU/h	Deleted
Operating conditions		
Humidity	Up to 80% non-condensing	20 ~ 80 %
Temperature	10°C-40°C 50°F-105°F	10°C-40°C (operating ambient temperature)
Storing conditions		
Temperature	0°C-40°C 32°F-105°F	-10°C-50°C
Remote management through IP	Remote management through IP for parameter adjustment. Each cube should have built-in web server.	Remote management through IP for parameter adjustment. Each cube should have built-in web server.. Optional but preferred.
Access	Rear of the Video Wall only	Rear of the Video Wall
Pixel clock	320 Mhz	As per solution to meet the end objective (typical 162 MHz or better)
Signal Processing	Each cube should have cropping/scaling capability	As per solution to meet the end objective
Screen Half-gain Viewing Angle	Hor: 28 degrees +/- 3 Ver: 13 degrees +/- 3	Deleted
		Deleted

Specifications of display Wall Management Software

Layouts	The software should be able to pre configure various display layouts and access them at any time with a simple mouse click or schedule/timer based.	The software should be able to pre configure various display layouts and access them at any time with a simple mouse click or schedule/timer based.
Sources	The software should be able to display multiple sources anywhere on the video wall & in any size.	The software should be able to display multiple sources anywhere on the video wall & in any size.

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Remote Viewing	The video wall content will be able to show live on any remote display Mobile with IE...	Optional
User management	Key features of Video Wall Management Software - Central configuration database - Browser based user interface - Auto-detection of network sources - Online configuration of sources, displays and system variables	
Software features	Video Wall Control Software shall allow commands on wall level or cube level or a selection of cubes : - Switching the entire display wall on or off. - Setting all projection modules to a common brightness target, which can be either static (fixed) or dynamic to always achieve maximum (or minimum) common brightness between projection modules. - Fine-tune colour of each cube Should support Multiple clients / Consoles to control the Wall layouts	
Client & Server based Architecture	The Software should be able to share layouts comprising of multiple sources with workstations / Displays over LAN for remote monitoring	
Collaboration	Software should enable the user to display multiple sources (both local & remote) up to any size and anywhere on the display walls (both local & remote).	
Scaling	The software should be able to create layouts and launch them as and when desired	
Display	The Display Wall and sources (both local & remote) should be controlled from Remote PC through LAN without the use of KVM Hardware.	
Remote Control	Software should support display of Alarms	
Support of Meta Data	The software should provide at least 2 layer of authentication, software & hardware through username and password on the operator smart console with touchscreen	
Authentication	Software should be able to Save and Load desktop layouts from Local or remote machines	
Scenarios	All the Layouts can be scheduled as per user convince.	
Layout Scheduler	Software should support auto launch of Layouts according to specified time event by user	
Layout Management	It should be possible to create layouts comprising of screen scrapped content of Workstations, DVI inputs, Web sources, URLs configured as sources. Layouts can be pre configured or changed in real time	
Layouts Configuration	Can be pre configured or changed in real time	

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Scheduling	It should be possible to schedule specific Layout based on time range	It should be possible to schedule specific Layout based on time range
Sharing & Collaboration	It should be possible to share the layouts over LAN/WAN Network with Display in Meeting room or on Remote Workstations connected on LAN/WAN Network	It should be possible to share the layouts over LAN/WAN Network.
Soft KVM	The system shall include complete Soft KVM to permit operators to take mouse & keyboard control of Displays, Screen applications and DVI source. All wall management software functionalities to be triggered by operator smart console with touch screen	The system shall include complete Soft KVM to permit operators to take mouse & keyboard control of Displays, Screen Scrapped applications and DVI source.
Ticker	It should be possible to create two separate Tickers which run concurrently. These can be positioned at top or bottom and can run independently. The Ticker can be picked from data source through screen scrapping or through typing specific incidence, manually.	It should be possible to create two separate Tickers which run concurrently. These can be positioned at top or bottom and can run independently.
OEM Certification	All features and functionality should be certified by the OEM.	All features and functionality should be certified by the OEM.
Specifications of display Wall Controller		
Display controller	The Display Modules, Display Controller & Software should be from a single OEM.	The Display Modules, Display Controller & Software should be from a single OEM.
Redundant Controller	Controller to be able to control cubes	Controller to be able to control cubes
Platform	The controller should be based on the latest architecture.	The controller should be based on the latest architecture.
Processor	Windows Xeon Quad core 3 Ghz or Core i7 3 Ghz above	Windows Xeon Quad core 3 Ghz or Core i7 3 Ghz above
RAM	Intel Xeon	Intel Xeon
Chassis Type	32 GB	32 GB
Network	19" Rack mount industrial chassis	19" Rack mount industrial chassis
Resolution Support For Outputs	2 Network Ports	2 Network Ports
Ticker	Minimum 1920 x 1080 or higher	Minimum 1920 x 1080 or higher
Scalability	There should be a possibility in the controller to create user defined multiple tickers. It should also be possible to place tickers anywhere on the wall	There should be a possibility in the controller to create user defined multiple tickers. It should also be possible to place these tickers anywhere on the wall
Control	The system should be able to add additional inputs as required in the future	The system should be able to add additional inputs as required in the future
Redundancy	The system should have the capabilities of interacting (Monitoring & Control) with various applications on different network through the single Operator Workstation. It shall be possible to launch layouts, change layouts in real time using physical hot keys on smart operator keyboard or Touch screen, tablet etc. or the solution as per the system requirement/industry practice.	The system should have the capabilities of interacting (Monitoring & Control) with various applications on different network through the single Operator Workstation. It shall be possible to launch layouts, change layouts in real time using physical hot keys on smart operator keyboard or Touch screen, tablet etc. or the solution as per the system requirement/industry practice.
Redundancy	Redundant Hot Swappable HDD in RAID 1 Configuration	Redundant Hot Swappable HDD in RAID 1 Configuration
Keyboard & Mouse Extension	Redundant Hot Swappable Power Supply	Redundant Hot Swappable Power Supply
24 x 7 operation	Keyboard and Mouse along with mechanism to extend them to 20 Mtrs. operator desk from display controller to be provided	Keyboard and Mouse along with mechanism to extend them to 20 Mtrs. operator desk from display controller to be provided
	The controller shall be designed for 24 x 7 operation	The controller shall be designed for 24 x 7 operation

Others	The Video Wall and the Controller should be of the same make to ensure better performance and compatibility	The Video Wall and the Controller should be of the same make to ensure better performance and compatibility
OEM Certification	All features and functionality should be certified by the OEM.	All features and functionality should be certified by the OEM.
	The Display Modules, Display Controller & Software should be from a single OEM.	The Display Modules, Display Controller & Software should be from a single OEM.

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