

	Request for Information (RFI)	Document Identifier	559-333907402	Rev	1
		Effective Date	March 2025		
		Review Date	March 2028		
		EOI/RFI Number	E3143NTCSAMWP		

PART A			
REQUEST FOR AN EXPRESSION OF INTEREST (EOI)/ REQUEST FOR INFORMATION (RFI)			
Description of the works/goods/services	A Request for Information (RFI) is required to evaluate the maturity and suitability of Software-Defined Networking (SDN) and Network Functions Virtualization (NFV) for deployment within NTCSA's Operational Technology (OT) environment		
Deadline for submission	23 July 2026	At (South African Standard Time)	10:00 am
Tender Office address	Tenders are uploaded via NTCSA Tender bulletin site on the Eskom E- tendering page.		
EOI's/RFI are to be submitted electronically via Eskom E- tendering site by the stipulated closing date and time. Please note it is the responsibility of the supplier to ensure that EOI/RFI submission is submitted before the closing date and time	Suppliers are not allowed to submit physical files to NTCSA/Eskom Tender Offices. Please note it is the responsibility of the supplier to ensure that RFI submission is submitted before the closing date and time.		
Electronic Submission of RFI	The tenderer must upload the tender via NTCSA Tender bulletin site on the Eskom E- tendering page. All documents need to be submitted in a PDF and Excel format (The limit is 50MB per file and total submission of 900MB per submissions). No Zip/condense files can be uploaded No hard copy will be accepted If for some reason you resubmit your EOI, then the latest version of the EOI submitted will only be accepted and all previous submission/s will be null and void. Please ensure that the submission status is indicated as complete. Supplier Help Manual guide and video can be found on Eskom E-Tendering page		

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E-tendering Help Manual for supplier	Refer to the attached E-tendering Help Manual for suppliers
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National Transmission Company South Africa SOC Ltd ("NTCSA") invites you to submit an:

- **Request for information (RFI)** is required to evaluate the maturity and suitability of Software Defined Networking (SDN) and Network Functions Virtualization (NFV) for deployment within NTCSA's Operational Technology (OT) environment

NTCSA has delegated the responsibility for this RFI to the signatory of this document, whose details can be found below.

We look forward to receipt of your response.

Yours faithfully

Name	Designation	Signature	Date
Claire Gontse Sennelo	Asst Officer Procurement		01/07/26
Telephone number	011 800 8111	Fax and/or e-mail address	Sennelcg@ntcsa.co.za

PART B RESPONSE SHEET IN TERMS OF A REQUEST FOR INFORMATION To be completed by the supplier			
To	NTCSA SOC Ltd	Date	
Attention			
Tel no		Fax no and /or e-mail address	
From		Address	
Address			
Sender			

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Suppliers are to note the following:

- Responders are encouraged to refer to the stated requirements and expand on them where necessary, clearly indicating assumptions, deviations or value-added capabilities.

Please find below our response to NTCSA's questions:

No.	Question	Please indicate your response in this column
1.	Contact Information and Company Details • Your company name and contact details • Company registration number	
2.	Brief description of previous experience with utility OT network solutions including SDN/NFV solutions. Additionally, comment on the maturity of this technology by providing case studies.	
3.	Which frameworks and standards are recommended for designing and implementing a secure, resilient and scalable SDN/NFV architecture within an OT network environment?	
4.	Describe how SDN/NFV architecture supports deterministic traffic handling (e.g. SCADA services) and meets strict latency and jitter requirements typical of OT environments. Include details on traffic engineering, QoS mechanisms, prioritisation, and any time-sensitive networking (TSN) or equivalent capabilities.	
5.	How does SDN/NFV improve operational efficiency, agility and responsiveness of the network? (Provide measurable outcomes based on your previous successful SDN/NFV network deployments)	
6.	Can your solution interoperate with multi-vendor legacy equipment, and how is this validated? What are the inter-operability requirements between SDN/NFV solutions and existing legacy network equipment? How can vendor	

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	lock-in be avoided between controllers and edge devices? Additionally, in a multi-OEM setup, how is the support model structured? Scenario: If an OEM1 SDN controller is deployed on top of a VM managed by OEM2 hypervisor (if compatible), within an OEM3 physical server, who provides support during failure?	
7.	List all open standard-based protocols supported in the implementation of your SDN/NFV solution (e.g., OpenFlow, NETCONF, YANG).	
8.	How do you guarantee carrier-grade availability (99.999%) in virtualized environments? Describe support for deterministic networking and time-sensitive applications (e.g., IEC 61850 GOOSE, SCADA).	
9.	What redundancy models exist for: a) SDN controllers b) NFV infrastructure (NFVI) c) Virtual network functions (VNFs) Please reflect on various deployment scenarios such as SD-WAN, data centre network, and substation LAN etc and provide details on how control plane failure is handled in each architecture.	
10.	How can SDN/NFV solutions be scaled to support additional and increased network traffic over time?	
11.	What visibility tools are provided for: a) Real-time monitoring b) Root cause analysis c) Service assurance	
12.	What types of cloud computing (e.g., public, private, hybrid, on-prem) are supported or recommended for hosting SDN controllers and NFV platforms in a mission-critical utility network? What are the trade-offs of each option.	
13.	What licensing models are used (subscription, perpetual, usage-based) and how are VNFs licensed?	

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14.	What technical skills and operational tools are required to manage and maintain SDN/NFV networks effectively? Do you offer any training and knowledge transfer programs to support internal teams during and after implementation?	
15.	How are software updates, patches, and lifecycle management handled?	
16.	Are there automated monitoring and incident response mechanisms available for detecting and mitigating cybersecurity breaches in SDN/NFV environments?	
17.	What infrastructure is required to host SDN controllers (e.g., hardware specifications, and data centre requirements)?	
18.	What types of SDN controller architectures are recommended for specific network topologies? Reflect on the following: The different types of SDN controllers. Which SDN controller topology is best suited for each network topology (e.g. SD WAN, data Centre, Substation LAN, etc)	
19.	What types of NFV infrastructure platforms are recommended for utilities (e.g., OpenStack, VMware, proprietary NFV orchestrators)?	
20.	How are virtualized network functions (VNFs) deployed, scaled, and managed across the network?	
21.	What orchestration and lifecycle management tools are available for NFV, and how do they integrate with SDN controllers?	
22.	Provide a step-by-step migration roadmap/strategy from legacy OT to SDN/NFV networks, including associated costs. How is disaster recovery, zero disruption to critical control systems, and business continuity ensured during migration? What coexistence models do you support (e.g., overlay, hybrid, phased migration), and what are the advantages and limitations of each?	
23.	What is your product roadmap for the next 3–5 years? Does it include support for emerging technologies such as AI, Blockchain, etc.	
24.	List all AI-related applications or functions supported by your solution, along with their associated benefits.	
25.	Describe your Total Cost of Ownership (TCO) model for deploying and operating SDN/NFV	

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	within a hybrid legacy network environment, including TDM technologies such as SDH and PDH alongside IP/MPLS. Cover all cost components across the lifecycle, including CAPEX, OPEX, integration, migration, licensing, maintenance, and support.	
26.	Provide a Bill of Materials (BOM) with associated indicative pricing for each component required for an SDN/NFV system.	
27.	Can you support a PoC in a live or simulated OT environment?	

Yours faithfully

Name	Designation	Signature	Date
Telephone number		Fax and/or e-mail address	

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