

No.C.VII.1/2015-ITW(QRs)-(5) 1333
भारत सरकार/Government of India
गृह मंत्रालय/Ministry of Home Affairs
पुलिस आधुनिकीकरण प्रभाग /Police Modernization Division
संभरण-I डेस्क /Prov.I Desk

Jaisalmer House, 26 Man Singh Road,
New Delhi, dated the July, 2015

To,

The DsG: AR, BSF, CISF, CRPF, ITBP, SSB, NSG & BPR&D.

Subject: QRs and Trial Directives of IP Encryptor.

Sir,

The undersigned is directed to refer to the subject mentioned above and to say that the QRs and Trial Directives in respect of IP Encryptor as per Annex-I and Annex-II, respectively have been approved by the competent authority in MHA.

2. Henceforth, all the CAPFs should trial, evaluate and procure the above item, required by them, strictly as per the laid down QRs.
3. Concerned CAPF will be accountable for correctness of the QRs and Trial Directives of IP Encryptor.

Yours faithfully,

M. N. SUKOLE
(M. K. Chahar)

Under Secretary to the Govt. of India

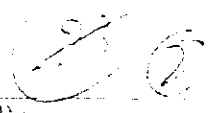
Encl: As above.

Copy forwarded for necessary action to:

- ✓ SO (IT), MHA - with the request to host the QRs and Trial Directives of IP Encryptor on official website of MHA (under the page of Organizational Set up, Police Modernization Division-Communication Equipments).

Copy to: DDG (Procurement), MHA

QR/Technical Specification : IP ENCRYPTOR



SNo	Specification	Qualitative Requirements (QR)
1	General Environmental	<p>Internet Protocol (IP) Encryptor may be used in the following mode</p> <ul style="list-style-type: none"> a) Transport Mode b) Tunnel Mode
2	Network Access	Should be compatible with channels of 8 Mbps using Multi-Protocol Level Switching (MPLS), Very Small Aperture Terminal (VSAT), Leased line and Worldwide interoperability for Microwave Access (WIMAX).
3	Connectivity	<ul style="list-style-type: none"> (a) Support Internet Protocol version-4 (IPV4) with migrating capability for Internet Protocol version-6 (IPV6). (b) No. of Local Area Network (LAN) ports - one (c) No of Wide Area Network (WAN) ports one or more. (d) Full Duplex (e) <u>Electrical</u> <ul style="list-style-type: none"> (i) Min input levels-10/100 standard Ethernet level i.e. 10 & 100 Mbps (ii) Output levels-10/100 standard Ethernet level i.e. 10 & 100 Mbps. (iii) Pulse shape (input & output) 10/100 standard Ethernet interface i.e. 10 & 100 Mbps (International standards to support 10 & 100 Mbps interfaces) (iv) Bit Error Rate (BER) rating- 1/1000000 or 10⁻⁶ (1 bit in 10 bits) or better
4	Encryption	<p>The Internet Protocol (IP) Encryptor hardware and software will be indigenously developed and the product to meet statutory security requirements. It is required to be approved by the Scientific Analysis Group (SAG), Govt of India. In order to do so, the following must be meet:-</p> <ul style="list-style-type: none"> (a) Key length – To meet the G4 grade requirement as specified by SAG. (b) Key loading – Through Fill Gun and Key Pad. (c) Key storing – As per SAG specification. (d) Algorithm – To meet the G4 grade as specified by SAG. (e) Algorithm loading – Field Programmable Gate Arrays (FPGA) based as per SAG requirement. (f) Algorithm storing – Pre coded in system as per SAG specification. (g) Encryptor Hardware – Tamper Proof. (h) Key Requirement – As per requirement specified by SAG.

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5. Management

Must have following management features -

- (a) LAN interface for Encrytor management
- (b) Visual indications of status
- (c) Change of key and algorithm from central location after system is deployed i.e. the LAN/WAN.
- (d) Local loading of key using key pad and fill-gun.
- (e) Built in test Facility (BITE)
- (f) Non-volatile storage for key and algorithms to ensure that algorithm and key loading is not required even in case of failure of power (primary and secondary)

6. Power

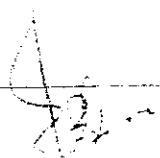
- (a) Must work on a/c mains with the following:
 - (i) Frequency – 50 Hz \pm 5Hz
 - (ii) Voltage – 220 VAC \pm 40V.
- (b) In line batteries arrangement to provide surge protection is desirable


7. Physical & Environmental

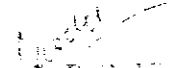
- (a) Mountable in 19" racks.
- (b) Work in non-ac environment at Temp from 0 – 50° C.
- (c) Environment specs humidity 90% at 50° C

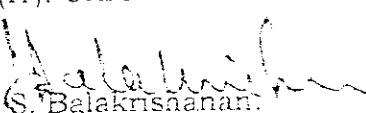
8. Safety and destruction


- (a) Unit must be securable to the rack with key loading arrangement.
- (b) Unit should not be operable unless removed from rack
- (c) Arrangements for emergency erasure of keys.
- (d) Arrangement for destruction of classified hardware.



Ravindra K. Misra,
DC (IT), CRPF

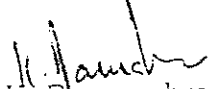

Mayank Kumar Dandia,
AC (IT), CRPF



A. P. S. Virk,
DC (IT), BSF

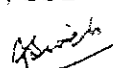

Col. S. Balakrishnan,
GC, ESG, NSG

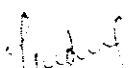

Lt. Col. P. S. Manhas,
SC, ESG, NSG



Sanjeev Kumar,
AC, SSB

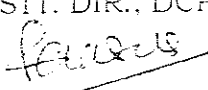

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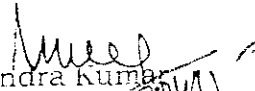

Alok Roy Choudhary,
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DG, CRPF

TRIAL DIRECTIVE OF IP ENCRYPTOR

all parameters/specifications mentioned in QRs will be checked by the Board of Officers by ascertaining/verifying following checks in the presence of Vendor/Supplier/Manufacturer. In case of any discrepancies/problem, the vendor/rep of firm will demonstrate the features to the Board of officer of the firm. Further, if proper testing instrument for testing these parameters, is not available with user, same will be arranged by the vendor.

Physical Checks. In this category, specifications of the equipment will be checked physically as per QR.

Functional Checks. The vendors will show all the features/configuration of the equipment functioning on ground to the board of officers during trial.

Submission of Certificates. Specification which cannot be checked due to lack of testing facilities/expertise, self-certificate of OEM will be provided by the vendor/bidder during trial.

Q.No	Specification	Qualitative Requirements (QR)	Trial Directive
1	Internet Protocol (IP) Encryption may be used in the following mode	Internet Protocol (IP) Encryption may be used in the following mode	The Board will carry out physical check as well as the functional test of the two modes in case of any discrepancy/problem, the vendor/ rep of firm will demonstrate the features to the Board of Officer.
2	Transport Mode	a) Transport Mode b) Tunnel Mode	The Board will carry out physical check as well as the functional test of the mentioned parameter. Also the Board will check the OEM compliance certificate submitted by vendor. In case of any discrepancy problem, the vendor/ rep of firm will demonstrate the features to the Board of Officer.
3	Should be compatible with channels of 8 Mbps using Multi Protocol Level Switching (ML-LS), Very Small Aperture Terminal (VSAT), Leased line and Worldwide Interoperability for Microwave Access (WIMAX)	Should be compatible with channels of 8 Mbps using Multi Protocol Level Switching (ML-LS), Very Small Aperture Terminal (VSAT), Leased line and Worldwide Interoperability for Microwave Access (WIMAX)	The Board will carry out physical check as well as the functional test of the provided specifications and also check the OEM certification provided by vendor. Further, in case of any discrepancy problem, the vendor/ rep of firm will demonstrate the features to the Board of Officer.
4	Support Internal Protocol Version 4 (IPv4) with migrating capability for Internet Protocol version-6 (IPv6).	(a) Support Internal Protocol Version 4 (IPv4) with migrating capability for Internet Protocol version-6 (IPv6).	The Board will carry out physical check as well as the functional test of the provided specifications and also check the OEM certification provided by vendor. Further, in case of any discrepancy problem, the vendor/ rep of firm will demonstrate the features to the Board of Officer.
5	No of Local Area Network (LAN) ports	(b) No of Local Area Network (LAN) ports: one.	The Board will carry out physical check as well as the functional test of the provided specifications and also check the OEM certification provided by vendor. Further, in case of any discrepancy problem, the vendor/ rep of firm will demonstrate the features to the Board of Officer.
6	No of Wide Area Network (WAN) ports	(c) No of Wide Area Network (WAN) ports: one or more.	The Board will carry out physical check as well as the functional test of the provided specifications and also check the OEM certification provided by vendor. Further, in case of any discrepancy problem, the vendor/ rep of firm will demonstrate the features to the Board of Officer.
7	Full Duplex	(d) Full Duplex	The Board will carry out physical check as well as the functional test of the provided specifications and also check the OEM certification provided by vendor. Further, in case of any discrepancy problem, the vendor/ rep of firm will demonstrate the features to the Board of Officer.
8	Electrical	(e) Electrical	The Board will carry out physical check as well as the functional test of the provided specifications and also check the OEM certification provided by vendor. Further, in case of any discrepancy problem, the vendor/ rep of firm will demonstrate the features to the Board of Officer.
9	Min input levels	(i) Min input levels: 10/100 standard Ethernet level i.e. 10 & 100 Mbps.	The Board will carry out physical check as well as the functional test of the provided specifications and also check the OEM certification provided by vendor. Further, in case of any discrepancy problem, the vendor/ rep of firm will demonstrate the features to the Board of Officer.
10	Output levels	(ii) Output levels--10/100 standard Ethernet level i.e. 10 & 100 Mbps	The Board will carry out physical check as well as the functional test of the provided specifications and also check the OEM certification provided by vendor. Further, in case of any discrepancy problem, the vendor/ rep of firm will demonstrate the features to the Board of Officer.

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<p>(iii) Pulse shape (input & output) 10/100 standard Ethernet interface i.e. 10 & 100 Mbps (International standard to support 10 & 100 Mbps interfaces).</p> <p>(iv) Bit Error Rate (BER) rating: 1/1000000 or 10⁻⁶ (1 bit in 10 bits) or better</p>	<p>The Board will carry out physical check as well as the functional test of the provided specifications and also check the OEM certification provided by vendor. Further, in case of any discrepancy/ problem, the vendor/ rep. of firm will demonstrate the features to the Board of Officer.</p>
<p>The Internet Protocol (IP) Encryptor hardware and software will be indigenously developed and the product to meet statutory security requirements. It is required to be approved by the Scientific Analysis Group (SAG), Govt of India. In order to do so, the following must be met:-</p>	<p>The Board will carry out physical check as well as the functional test of the mentioned parameters. Also, the board will check the OEM compliance certificate submitted by vendor. In case of any discrepancy/ problem, the vendor/ rep. of firm will demonstrate the features to the Board of Officer.</p>
<p>(a) Key length – To meet the C1 grade requirement as specified by SAG.</p>	<p>The vendor/firm will submit SAG approved certificate</p>
<p>(b) Key loading – Through Fill (Pin and Key Pad.</p>	
<p>(c) Key storing – As per SAG specification.</p>	
<p>(d) Algorithm – To meet the C1 grade as specified by SAG</p>	
<p>(e) Algorithm loading – Field Programmable Gate Arrays (FPGA) based as per SAG requirement.</p>	
<p>(f) Algorithm storing – Preloaded in system as per SAG specification.</p>	
<p>(g) Encryptor Hardware – Tamper Proof.</p>	
<p>(h) Key Requirement – As per requirement specified by SAG</p>	

for 13/1/2012

Shree

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Must have following management features:-	The Board will carry out physical check as well as the functional test of the component i.e visual indications. Built in Test facility (BITE) and loading of key. The vendor/rep of firm will also demonstrate the features to the Board of officer.
(a) LAN interface for Encryptor management.	
(b) Visual indications of status.	
(c) Change of key and algorithm from central location after system is deployed i.e the LAN/WAN.	
(d) Local loading of key using key pad and fill-gun.	
(e) Built in test Facility (BITE)	
(f) Non-volatile storage for key and algorithms to ensure that algorithm and key loading is not required even in case of failure of power (primary and secondary)	The Board will carry out physical check as well as the functional test of the component i.e. visual indications. Built in Test facility (BITE) and loading of key. The vendor/rep of firm will also demonstrate the features to the Board of officer.
(a) Must work on a/c mains with the following:	The Board will carry out physical check by using the mentioned power sources and the vendor will also produce certificate of OEM. Board is free to accept certificate of OEM or Test certificate from non-Government approved laboratory.
(i) Frequency -- 50 Hz \pm 5Hz	
(ii) Voltage -- 220VAC \pm 10V.	
(b) In line batteries arrangement to provide surge protection is desirable.	
(a) Mountable in 19" racks.	The Board will carry out physical check of racks. After the board will check the OEM compliance certificate submitted by vendor. Board is free to accept certificate of OEM or test certificate from any Government approved laboratory.
(b) Work in non-ac environment at Temp from 0 -- 50° C	
(c) Environment specs humidity 90% at 50° C	

Physical & Environmental

Power

Johns

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Review and destruction

(a) Unit must be securable to the rack with key loading arrangement
(b) Unit should not be operable unless removed from rack
(c) Arrangements for emergency closure of keys.
(d) Arrangement for destruction of classified hardware

The Board will carry out physical check and functional test of the mentioned parameters. In case of any discrepancies/problem, the vendor/rep. or firm will demonstrate the features to the Board of officer

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DC (IT), BSIF

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SC, BSQ, NSSG

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AC, SSIB

Alok Roy Choudhary,
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Prakash Mishra, IPS
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