GOVERNMENT OF INDIA
(Ministry of Home Affairs)
DIRECTORATE GENERAL
CENTRAL RESERVE POLICE FORCE
BLOCK NO-1, CGO COMPLEX, LODHI ROAD, NEW DELHI – 110003

No. B.V-7/2016-17-C (ICS) Dated, the 21 August'2018

To

1. DIG (Comn), ITBP
   Block No. 2, CGO Complex
   Lodhi Road, New Delhi-03

2. DIG (Comn), NSG
   Meharam Nagar
   Palam, New Delhi-37

3. DIG (Comn), SSB
   East Block-V, R.K Puram
   New- Delhi-66

4. AIG (Comn), CISF
   Block No. 13, CGO, Complex
   Lodhi Road, New Delhi-03

5. DIG (Prov), BSF
   Block No. 10, CGO Complex
   Lodhi Road, New Delhi-03

6. Liaison Office, Assam Rifle
   Room No-171, North Block, MHA
   New Delhi -01

Subject: QRs/TDs of Integrated Communication System(ICS).

The undersigned is directed to refer to the subject mentioned above and to say that QRs and TDs in respect of Integrated Communication System(ICS) as per Annexure-A & Annexure-B, respectively have been approved by the competent authority.

2. Henceforth, all the CAPFs should trial evaluate and procure the above item, required by them strictly as per the laid down QRs.

Encl: (QRs & TDs of ICS Mini UAV)

(Harjinder Singh)
DIGP (Equipment)
Directorate General, CRPF

No. B.V-7/2016-17-C (ICS) Dated, the 21 August'2018

Copy to:-

SO(IT), MHA, North Block with request to host the QRS and TDs of Integrated Communication System(ICS) on MHA website. Soft copy is being sent through email also.

(Harjinder Singh)
DIGP (Equipment)
Directorate General, CRPF

Annexure "A"

QRs of Integrated communication System (ICS)			
S.N		**Parameters/Specification**	**Remarks**
	General		
	i	The system should be IP based server gateway architecture with one central command centre and should be fully supported across IP network by simple addition of gateways. The interfaced radios should be able to make call across the IP network through the gateway devices.	
	ii	The radio line Interoperability system should interface with any combination of 2 way radio (HF, VHF, and UHF), cellular/ land line / SATCOM telephone while allowing multiple simultaneous two-way conversation or conference calls between the above. The system should include built in voice prompts to guide users in the operation of the interconnecting system.	
	iii	Should be capable of connecting 4 radio nets simultaneously and interface 02 or more (as per user requirements) analog ports (FXO/ FXS ports) for interoperability with radio sets. It should also support GSM interface of two ports or more.	
2	**Operational requirement**		
		The Interoperability system should be capable of the following:	
	(i)	Interfacing the various 2 – Way radios sets in HF, VHF and UHF band in use.	
	(ii)	The interoperability solution should be capable of interface with almost any type of radio through a multitude of specifically designed interface cable/ connectors.	
	(iii)	The interoperability solution should also be capable of cross connecting any or all of the interfaced radios interfacing any type of radio to a public telephone network (PSTN) to private access to branch exchanges (PABX) to SATCOM terminals (VSAT or INMARSAT), and to Cellular (GSM) circuits.	
	(iv)	It should cross-connect an encrypted radio network together seamlessly.	
	(v)	Interoperability solution should be capable of interconnecting multiple communications systems in one chassis.	
	(vi)	Should have PRI/E1 or PRI/T1 interface for interconnecting gateway devices.	
	(vii)	The inbuilt CPU should have hot standby and swapping for both central and remote gateways.	Optional feature
3	**Performance requirement**		
	(i)	The system should not add any type of noise in speech communication over Radios. This should be done by necessary noise filtering circuits.	
	(ii)	Audio level should be field adjustable. User should be able to increase or decrease audio gain to his satisfaction.	
	(iii)	Speech should switch instantaneously across Radio.	
	(iv)	VOX and VMR feature must also include an adjustable audio sampling so that the audio input received during time required making a valid signal is not clipped off.	
	(v)	The system should support necessary interface for instant switching between radios nets and other gateways.	
	(vi)	The system should include a configurable noise reduction system. The speech spectrum detector should be capable of filtering out fixed/ variable frequency sirens. Whistles and horns without falsely activating cross- connected radio networks.	
4	**Interfacing with Phone lines**		
	i	It should support local telephone interface capability to add as an extension phone for the interconnect system. The local phone circuit shall produce ring voltage loop current busy signal and dial tone. It should be possible to interconnect between telephones connected to system along with other possible interfaces connected at the system.	
	ii	The system should have a magneto connect facility	Optional feature
5	**System operation and management**		
	(i)	The system should perform either as an unmanned gateway over as a manned gateway while providing interoperability over multiple radios.	

ITBP SSB

S.N		Parameters/Specification	Remarks
	(ii)	The Interoperability system should have local key pad control, hand set/ headphone/ speaker output for operator and should be able to monitor operating status of port and system on the display.	
	(iii)	The system terminal should be user friendly GUI (Graphical User Interface) depicting system operation and allowing programming of features.	
	(iv)	The interoperability system should also include an Ethernet remote control interface allowing the required computer controlled software to operator from multiple dispatch locations simultaneously.	
	(v)	It should permit programming of all interface features.	
	(vi)	Maintainability. The system should support built in test equipment facility. The system should be modular in nature with module status indication diagnostic tests.	
6	**Power supply**		
	(i)	The equipment should work on any battery available in field. It can be 12V or 24V or 48V DC and it should work on AC mains 230/ 50Hz power. They can be simultaneously connected and the unit will automatically switch to drawing power from the DC input if the AC supply is absent or at low level.	
	(ii)	Unit power supply must include the ability to charge batteries.	
	(iii)	Must be protected against reverse voltage.	
7	EMI/ EMC Compliance		
	The equipment should be able to work with various radio requirements in HF, VHF and UHF bands co-located and transmitting at higher power without any problems. The EMI/ EMC compliance should be as per JSS-55555:2000 for EMC & JSG 0261 (Part ½)-1999 for EMC or equivalent national or international standard.		
8	**Environmental Condition**		
	(i)	The equipment should be fully ruggedized and should meet environment condition. As laid down in table L2B of JSS 5555, Revision No 2.	Optional feature
9	**Temperature**		
	(i)	The equipment should be capable of being used in any terrain/ climate in Indian sub continent. It should be capable of satisfactory performance under the following temperature condition. a) Operation:- 0°.C to 50°.C b) Storage:- 0° deg .C to 50°.C or a) Operation: -20° C to 50° C b) Storage: -20° C to 50° C	Temperature condition as per user requ irements.
10	**Safety**		
	(i)	Should have built in safety devices.	
	(ii)	Protection against surge voltage from exchange/ line side on the PSTN interfaces. It should have protection against high voltage from field side.	

WO/RM R.S.Dhaka
Assam Rifles

Pramod Kumar,
DC(Comn),SSB

Rampal
DC(Tele),ITBP

Maj.VimalMathew,
NSG

P.R.Jha,DC(UAV)
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IG(Comn &IT),CRPF

R.P.Singh, IPS
SDG(Comn),
CRPF

Approved / Not Approved

16/05

Rajeev Rai Bhatnagar, IPS
DG, CRPF

Annexure "B"

TRIAL DIRECTIVES OF INTEGRATED COMMUNICATION SYSTEM (ICS)

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 representative of firm will demonstrate the features to the Board of officers. Further, if proper testing instrument for testing these parameters are not available with customer, same will be arranged by the firm.

i) **Physical Check**:-In this category specifications of the equipment will be checked by B.O.O. Physically as per QRs.

ii) **Functional Check:** - In this category supplier will show practically all features/ configuration shown against to the board of officers during trial.

iii) **Submission of Certificate**: Specification which cannot be checked due to lack of testing facilities/ expertise, certificate of any Govt. Lab. or NABL/ILAC accredited laboratory be submitted by the firm.

S.N	Parameters/Specifications		Trial Procedure
	General		
	i	The system should be IP based server gateway architecture with one central command centre and should be fully supported across IP network by simple addition of gateways. The interfaced radios should be able to make call across the IP network through the gateway devices.	BOO will check the function practically.
	ii	The radio line Interoperability system should interface with any combination of 2 way radio (HF, VHF, and UHF), cellular/ land line / SATCOM telephone while allowing multiple simultaneous two-way conversation or conference calls between the above. The system should include built in voice prompts to guide users in the operation of the interconnecting system.	The Board will carry out physical check as well as the functional test of the two way conversation or conference calls between the all different interfaced i.e 2-way radios (HF, VHF and UHF), cellular/ land line/ SATCOM etc.
	iii	Should be capable of connecting 4 radio nets simultaneously and interface 02 or more (as per user requirements) analog ports (FXO/ FXS ports) for interoperability with radio sets. It should also support GSM interface of two ports or more.	Board will carry out physical and functional test of the all parameters one by one. In case of any discrepancies/problem, the rep of firm will demonstrate the features to the Board of officer.

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S.N	Parameters/Specifications		Trial Procedure
2	**Operational requirement**		
	The Interoperability system should be capable of the following:		
	(i)	Interfacing the various 2 – Way radios sets in HF, VHF and UHF band in use.	Board will carry out physical check as well as the functional test of the mentioned parameter. In case of any discrepancies/problem, the representative of firm will demonstrate the features to the Board of officer.
	(ii)	The interoperability solution should be capable of interface with almost any type of radio through a multitude of specifically designed interface cable/ connectors.	
	(iii)	The interoperability solution should also be capable of cross connecting any or all of the interfaced radios interfacing any type of radio to a public telephone network(PSTN) to private access to branch exchanges (PABX) to SATCOM terminals (VSAT or INMARSAT), and to Cellular (GSM) circuits.	
	(iv)	It should cross-connect an encrypted radio network together seamlessly.	
	(v)	Interoperability solution should be capable of interconnecting multiple communications systems in one chassis.	
	(vi)	Should have PRI/E1 or PRI/T1 interface for interconnecting gateway devices.	
	(vii)	The inbuilt CPU should have hot standby and swapping for both central and remote gateways.	
3	**Performance requirement**		
	(i)	The system should not add any type of noise in speech communication over Radios. This should be done by necessary noise filtering circuits.	The board will carry out the physical check and functional test of the provided specifications, in case of any discrepancies/problem, the representative of firm will demonstrate the features to the Board of officer.
	(ii)	Audio level should be field adjustable. User should be able to increase or decrease audio gain to his satisfaction.	
	(iii)	Speech should switch instantaneously across Radio.	
	(iv)	VOX and VMR feature must also include an adjustable audio sampling so that the audio input received during time required making a valid signal is not clipped off.	
	(v)	The system should support necessary interface for instant switching between radios nets and other gateways.	
	(vi)	The system should include a configurable noise reduction system. The speech spectrum detector should be capable of filtering out fixed/ variable frequency sirens. Whistles and horns without falsely activating cross- connected radio networks.	

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S.N	Parameters/Specifications		Trial Procedure
4	**Interfacing with Phone lines**		
	i	It should support local telephone interface capability to add as an extension phone for the interconnect system. The local phone circuit shall produce ring voltage loop current busy signal and dial tone. It should be possible to interconnect between telephones connected to system along with other possible interfaces connected at the system.	Board will carry out the physical check and functional test by interfacing with telephone lines.
	ii	The system should have a magneto connect facility	
5	**System operation and management**		
	(i)	The system should perform either as an unmanned gateway over as a manned gateway while providing interoperability over multiple radios.	Board will carry out the physical check and functional test of the component and parameters shown in 5 (i) to (v) and ensure their workability. The representative of firm will also demonstrate the features to the Board of officer.
	(ii)	The Interoperability system should have local key pad control, hand set/ headphone/ speaker output for operator and should be able to monitor operating status of port and system on the display.	
	(iii)	The system terminal should be user friendly GUI (Graphical User Interface) depicting system operation and allowing programming of features.	
	(iv)	The interoperability system should also include an Ethernet remote control interface allowing the required computer controlled software to operator from multiple dispatch locations simultaneously.	
	(v)	It should permit programming of all interface features.	
	(vi)	Maintainability. The system should support built in test equipment facility. The system should be modular in nature with module status indication diagnostic tests.	BOO will check the function and firm will produce OEM certificate.
6	**Power supply**		
	(i)	The equipment should work on any battery available in field. It can be 12V or 24V or 48V DC and it should work on AC mains 230/ 50Hz power. They can be simultaneously connected and the unit will automatically switch to drawing power from the DC input if the AC supply is absent or at low level.	Board will check practically by using the mentioned power sources and ensure the system workability.
	(ii)	Unit power supply must include the ability to charge batteries.	
	(iii)	Must be protected against reverse voltage.	
7	**EMI/ EMC Compliance**		
		The equipment should be able to work with various radio requirements in HF, VHF and UHF bands co-located and transmitting at higher power without any problems. The EMI/ EMC compliance should be as per JSS-55555:2000 for EMC & JSG 0261 (Part ½)-1999 for EMC or equivalent national or international standard.	The firm must produce certificate issued by any Govt. Lab. or NABL/ ILAC accredited laboratory.

ITBP SSB

S.N	Parameters/Specifications		Trial Procedure
8	**Environmental Condition**		
	(i)	The equipment should be fully ruggedized and should meet environment condition. As laid down in table L2B of JSS 5555, Revision No 2.	The firm must produce certificate issued by any Govt. Lab. or NABL/ILAC accredited laboratory.
9	**Temperature**		
	(i)	The equipment should be capable of being used in any terrain/ climate in Indian sub continent. It should be capable of satisfactory performance under the following temperature condition. a) Operation:- 0°.C to 50°.C b) Storage:- 0° deg .C to 50°.C or a) Operation: -20° C to 50° C b) Storage: -20° C to 50° C	The firm must produce certificate issued by any Govt. Lab. or NABL/ ILAC accredited laboratory.
10	**Safety**		
	(i)	Should have built in safety devices.	
	(ii)	Protection against surge voltage from exchange/ line side on the PSTN interfaces. It should have protection against high voltage from field side.	The firm must produce certificate issued by any Govt. Lab. or NABL/ ILAC accredited laboratory.

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