

No. IV-21011/28/2009-Prov-I 227
भारत सरकार/Government of India
गृह मंत्रालय/Ministry of Home Affairs
पुलिस, आधुनिकीकरण प्रभाग /Police Modernization Division
संभरण-I डेस्क /Prov.I Desk

26, Man Singh Road, Jaisalmer House,
New Delhi, the 28th January, 2015

To,

The DsG: AR (through LOAR), BSF, CISF, CRPF, ITBP, SSB, NSG &
BPR&D.

**Subject: Trial Directives of Integrated Communication System
(ICS).**

Sir(s)

The undersigned is directed to refer to the subject mentioned above and to say that the Trial Directive of Integrated Communication System (ICS) as per Appendix-I have been approved by the competent authority in MHA.

2. Henceforth, all the CAPFs should procure the above items, required by them strictly as per the laid down Technical Specification/QRs.

Yours faithfully,



30/1/15
(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 Trial Directives on official website of MHA (under the page of Organizational Set up, Police Modernization Division- Communication Equipment). Soft copy is being sent through email also.


(R. K. Soni)
Section officer (Prov-I)

Copy to: DDG (Procurement), MHA

TRIAL DIRECTIVE 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 vendor/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 vendor.

- 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 accredited Laboratory of test shown against provided by the vendor and will be acceptable by B.O.O.

SI No	Specification	Qualitative Requirements (QRs)	Trial Procedure
1.	General	(a) The radio-line interoperability system should interface with any combination of 2-way radio (HF, VHF and UHF), cellular/ land line / SATCOM telephones while allowing multiple simultaneous two way conversations or conference call between the above. The system should include built in voice prompts to guide users in the operation of the interconnect 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.
		(b) Should be capable of connecting 4 radio nets simultaneously and interface 04 analog ports (FXO/FXS ports) for interoperability with radio sets. It should also support GSM/CDMA interface of 2 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 vendor/rep of firm will demonstrate the features to the Board of officer.
2.	Operational Requirements	<p>The interoperability system should be capable of the following :-</p> <p>(a) Interfacing the various 2 way radios sets in HF, VHF and UHF bands in use.</p> <p>(b) The interoperability solution should be capable of interconnecting with almost any type of radio through a multitude of special designed radio interface cable/ connectors.</p> <p>(c) 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 (VSATs or INMARSAT), and to Cellular (GSM/CDMA) circuits.</p> <p>(d) It should cross connect an encrypted radio network together seamlessly.</p> <p>(e) The interoperability solution should be capable of interconnecting multiple communications system in one chassis.</p>	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 discrepancies/problem, the vendor/representative of firm will demonstrate the features to the Board of officer.

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3.	Performance Requirement	<p>(a) The system should not add any type of noise in speech communication over radios. This should be done by necessary noise filtering circuits.</p> <p>(b) Audio level should be field adjustable. User should be able to increase or decrease audio gain to his satisfaction.</p> <p>(c) Speech should switch instantaneously across radios with delay of 200 m sec.</p> <p>(d) The VOX and VMR feature must also include an adjustable audio sampling so that the audio input received during the time required making a valid signal is not clipped off.</p> <p>(e) The system should support necessary interface for instant switching between radio nets and other gateways.</p> <p>(f) 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.</p>	<p>The board will carry out the physical check and functional test of the provided specifications and also check the OEM certification provided by the vendor. Further, in case of any discrepancies/problem, the vendor/representative of firm will demonstrate the features to the Board of officer.</p>
4.	Interfacing with phone lines	<p>It should support local telephone interface capability to act 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. The system should have a magneto connect facility.</p>	<p>Board will carry out the physical check and functional test by interfacing with telephone lines.</p>
5.	System operation and Management	<p>(a) The system should perform either as an unmanned gateway over as a manned gateway while providing interoperability over multiple radios.</p> <p>(b) The interoperability system should have local key pad control, hand set/ head phone/ speaker out put for operator control. It should support on line display. Operator should be able to monitor status of port and system on this display.</p> <p>(c) The system terminal should use a user friendly GUI (Graphical User Interface) depicting systems operation and allowing programming of features.</p> <p>(d) It should include an Ethernet port for local/ remote management. This windows based software control package shall allow connecting and disconnecting of any interoperability channel with any other interoperability channel.</p> <p>(e) The interoperability system should also include an Ethernet remote control interface allowing the required computer controlled software to operator from multiple dispatch location simultaneously.</p> <p>(f) It should permit programming of all radio interface, phone interface features and SATCOM interface features.</p> <p>(g) <u>Maintainability</u>. The system should support built in test equipment (BITE) facility. The system should be modular in nature with module status indication.</p>	<p>Board will carry out the physical check and functional test of the component and parameters shown in 5 (a) to (f) and ensure their workability. The vendor/representative of firm will also demonstrate the features to the Board of officer.</p> <p>g) The vendor will produce OEM certificate for the proposed parameter.</p>


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6.	Power Supply	(a) Equipment should work on any battery available in field . It can be 12 V or 24 V or 48 V DC and it should also work on AC mains 230 V/50 Hz 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 too low level. (b) Unit power supply must include the ability to charge batteries. (c) Must be protected against reverse voltage.	Board will check practically by using the mentioned power sources and ensure the system workability. Vendor will also produce certificate of OEM. Board is free to accept Certificate of OEM.
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.	Board will carry out physical and functional test of the given specification as per standard norms. The vendor will produce certificate of OEM or any accredited laboratory that ICS complies specification.
8.	Environmental condition	The equipment should be fully ruggedized and will meet environmental conditions. As laid down in table L2B of JSS 55555, Revision No 2	Vendor will provide test certificate from any accredited laboratory.
9.	Temperature	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 conditions. (a) Operation - 0° C to 50° C (b) Storage - 0° C to 50° C	The vendor will produce certificate of OEM or any accredited laboratory that ICS complies specifications. Board is free either to accept Certificate of OEM or Test certificate from any 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 voltages from field side.	The vendor will produce certificate of OEM that ICS complies with these specifications. Board is free either to accept Certificate of OEM or Test certificate from any accredited laboratory.

(SI/E Sohrab Ansari, CISF) (M S Yadav, AC, CRPF) (U.C. Joshi, AC, BSF) [Gurbachan Singh, SSO(E), BPR&D]
 (Sunil Kumar, DC, ITBP) [Major Kapil Dahiya, NSG] [Virendra Agrawal, DIG(Eqpt), CRPF] [Mahesh Kumar, DIG (Comn), CRPF]
 [Shailendra Kumar, IG (Comn), CRPF]

Approved/ Not approved


 (Dilip Trivedi, IPS)
 DG, CRPF