REQUEST FOR COMMENTS OF STAKEHOLDERS/OEM/FIRMS ON QRS (QUALITY REQUIREMENT) & TDS (TRIAL DIRECTIVES) OF SMART PLUS EQUIPMENT

1. The proposed QRs/TDs of "Smart Plus Equipment" is attached as **Appendix 'A & B'**. The OEMs/Vendors are requested to forward information of the product which they can offer and also forward correct specifications of their system against each parameter. Complied or not complied remarks will not be accepted.

2. The required information/details may please be forwarded at the following addresses by **23rd May 2019**.

Directorate General CRPF
East Block-7, Sec-1, R.K. Puram, New Delhi-110066
Email: comncell@crpf.gov.in

3. An early response is requested.

APPENDIX "A"

QRs/ Specification of SMART Plus Equipment

S.N	PARAMETER	SPECIFICATION
1	**General:-**	
	Mode of operation	Store and forward
	Type of transmission	Burst synchronous
	Type of error control	Forward error control
	Operating modes	CLEAR/SECURE
	Type of addressing	Selective/Broadcasting
	Key board	Alpha numeric QWERTY lay out and based on touch key pad. The keys are divided into the following groups Message preparation keys (alpha numeric keys) Navigation keys (UP, DOWN,RIGHT,LEFT arrow keys) Function keys (EDIT,TX, PRINT, MENU etc)
	Display	40 x 4 character display for message display
2.	**Radio interface**	
	Type	Frequency shift keying
	Data rate	50,100,200 bps or better
	Output level	>30mV peak to peak across 150 Ohm
	Input level	50 mV to 2000 mV peak to peak across 300 ohm
	Radio connectivity	Support for HF/VHF/UHF radio for data communication
3.	**Line interface**	
	Data rate	50,100,200 bps
	Output	>-3 dbm across 600 ohm
	Input	-30dbm to +3dbm across 600 ohm
4.	**Computer interface**	RS232 interface, 115200 bps
5.	**Base band interface**	
	Type	RS232
	Data rate	100,200,300,600,1200,2400,4800 bps
	Output	±5V to ±14V
	Input	±5V to ±20V
6.	**Storage capacity**	
	Tx Memory	100 messages of 1000 characters each
	Rx Memory	100 messages of 1000 characters each
	Dft Memory	100 messages of 1000 characters each
		Message editing with left, right , up and down Movement
7.	**Power supply source**	
	From AC Mains	180V to 260V AC (through MAU)
	From battery	12/24 V DC

S.N	PARAMETER	SPECIFICATION
		Power ON/OFF switch should be ruggedized type
		Low Battery indication at 10.5 ±0.5 volt in case of 12V Battery21.0 ±0.5 volt in case of 24V Battery
		Current 0.9A(Max) at 12 V
		0.45A(Max) at 24 V
8.	**Communication Security**	Crypto Algorithm approved by SAG with minimum Grade 3, Fill gun based key management
9.	**Removable Crypto Card**	Easy removal and replacement of crypto card in main equipment and provision of guiding pins & robust connectors.
10.	**Separate antistatic casing for safety of crypto card**	Separate antistatic casing for safety of crypto card during storage/transportation.
11.	**Environmental**	
	Operating temperature	-30°C to 55°C
	Storage temperature	-30°C to +70°C
	Humidity	Upto 95% (RH) at +40°C
12.	**EMI/EMC** Specifications	As per MIL STD 461 D Specifications
13.	**Weight and dimensions**	
	Size	333 (mm)x264(mm)x105(mm) (General tolerance: ±5 mm)
	Weight	Weight Approx. 4.4kg without Battery
	Field application	Ruggedized and suitable for field
14.	Printer connectivity	Serial printer connectivity with auxiliary metallic socket
15.	BITE Facility	Equipment should have built in Test Facility for the cards.
16.	Compatibility	Should be compatible with the data communication equipment like SMART and BEST in clear mode.

S.N	PARAMETER	SPECIFICATION
17.	Accessories	i)Printer cable with auxiliary connector at one end and D-type 25 pin connector at other end. ii)Main Adapter unit with mains cable iii)External Battery Adopter Box (EBAB) iv)Cable Main Adapter unit to EBAB v) Battery cable vi)25 PIN Female to 9 female Adapter vii)USB to serial adapter viii) Battery Pack (Ni-Cd) or Better ix) Battery Box x) Battery Charging Adapter xi)Battery Charging Cable xii)Hand Set xiii)Radio Interface Cable for HF radio compatible with BEL xiv)Free and Radio Interface cable for VHF/UHF radio set xv)Serial Printer xvi)PC interface S/W CD xvii)carrying case xviii)secure key Gun Master (SKGM) (Optional)- for secure key management system xix)Secure Key Gun Slave (SKGS) (Optional)- for secure key management system xx)Master Replicator (optional) for secure key management system xxi)Slave Replicator (Optional) for secure key management system xxii)RRNG and its power adapter (Optional)- for secure key management system xxiii)Cable for Fill Gun (Optional) xxiv)USB Interface Cable (Optional) xxv)Carrying Harness (Optional) xxvi)Mounting Tray for SMART Plus (Optional)

APPENDIX "B"

TRIAL DIRECTIVE FOR SMART PLUS EQUIPMENT

All parameters/ specifications mentioned in QRs will be checked by Board Of Officers by ascertaining/ verifying following checks in the presence of reprehensive of firm.

2. i. **Physical checks**: In this category, specification of the equipment will be checked physically as per QRs.

ii. **Functional checks**: Firm will show all the features /configuration of the equipment to the Board Of Officer during trials.

iii. **Submission of certificates**:Specification which cannot be checked due to lack of Testing facility/ Expertise, Certificate of any Government authority accredited has to be provided by the Firm during trial.

S.N	Parameters	Specifications	Trial Directives
1	**General:-**		
	Mode of operation	Store and forward	Board will check practically.
	Type of transmission	Burst synchronous	Firm will submit certificate of any Govt lab or NABL or ILAC accredited laboratory certificate.
	Type of error control	Forward error control	Firm will submit certificate of any Govt lab or NABL or ILAC accredited laboratory certificate.
	Operating modes	CLEAR/SECURE	Board will check practically.
	Type of addressing	Selective/Broadcasting	Board will check practically.
	Key board	Alpha numeric QWERTY lay out and based on touch key pad. The keys are divided into the following groups Message preparation keys (alpha numeric keys) Navigation keys (UP, DOWN,RIGHT,LEFT arrow keys) Function keys (EDIT,TX, PRINT, MENU etc)	Board will check practically and firm will submit OEM certificate.

S.N	Parameters	Specifications	Trial Directives
	Display	40 x 4 character display for message display	Firm will submit certificate of any Govt lab or NABL or ILAC accredited laboratory certificate.
2.	**Radio interface**		Firm will submit certificate of any Govt lab or NABL or ILAC accredited laboratory certificate.
	Type	Frequency shift keying	
	Data rate	50,100,200 bps or better	
	Output level	>30mV peak to peak across 150 Ohm	
	Input level	50 mV to 2000 mV peak to peak across 300 ohm	
	Radio connectivity	Support for HF/VHF/UHF radio for data communication	
3.	**Line interface**		Firm will submit certificate of any Govt lab or NABL or ILAC accredited laboratory certificate.
	Data rate	50,100,200 bps	
	Output	>-3 dBm across 600 Ω	
	Input	-30dBm to +3dBm across 600 ohm	
4.	**Computer interface**	RS232 interface, 115200 bps	Firm will submit certificate of any Govt lab or NABL or ILAC accredited laboratory certificate.
5.	**Base band interface**		Firm will submit certificate of any Govt lab or NABL or ILAC accredited laboratory certificate.
	Type	RS232	
	Data rate	100,200,300,600,1200,2400,4800 bps	
	Output	±5V to ±14V	
	Input	±5V to ±20V	
6.	**Storage capacity**		Board will check practically.
	Tx Memory	100 messages of 1000 characters each	
	Rx Memory	100 messages of 1000 characters each	
	Dft Memory	100 messages of 1000 characters each	
		Message editing with left, right , up and down Movement	
7.	**Power supply source**		Board will check practically.
	From AC Mains	180V to 260V AC (through MAU)	
	From battery	12/24 V DC	
		Power ON/OFF switch should be ruggedized type	

S.N	Parameters	Specifications	Trial Directives
		Low Battery indication at 10.5 ±0.5 volt in case of 12V Battery21.0 ±0.5 volt in case of 24V Battery	
		Current 0.9A(Max) at 12 V	
		0.45A(Max) at 24 V	
8.	**Communication Security**	Crypto Algorithm approved by SAG with minimum Grade 3, Fill gun based key management	Firm will submit certificate of SAG approved encryption.
9.	**Removable Crypto Card**	Easy removal and replacement of crypto card in main equipment and provision of guiding pins & robust connectors.	Board will check practically.
10.	**Separate antistatic casing for safety of crypto card**	Separate antistatic casing for safety of crypto card during storage/transportation.	Board will check practically.
11.	**Environmental**		Firm will submit certificate of any Govt lab or NABL or ILAC accredited laboratory certificate.
	Operating temperature	-30°C to 55°C	
	Storage temperature	-30°C to +70°C	
	Humidity	Upto 95% (RH) at +40°C	
12.	**EMI/EMC** Specifications	As per MIL STD 461 D Specifications	Firm will submit certificate of any Govt lab or NABL or ILAC accredited laboratory certificate.
13.	**Weight and dimensions**		Board will check practically.
	Size	333 (mm)x264(mm)x105(mm) (General tolerance: ±5 mm)	
	Weight	Weight Approx. 4.4kg without Battery	
	Field application	Ruggedized and suitable for field	
14.	Printer connectivity	Serial printer connectivity with auxiliary metallic socket	Board will check practically.
15.	BITE Facility	Equipment should have built in Test Facility for the cards.	Board will check practically.
16.	Compatibility	Should be compatible with the data communication equipment like SMART and BEST in clear mode.	Board will check practically.

S.N	Parameters	Specifications	Trial Directives
17.	Accessories	i) Printer cable with auxiliary connector at one end and D-type 25 pin connector at other end. ii) Main Adapter unit with mains cable iii) External Battery Adopter Box (EBAB) iv) Cable Main Adapter unit to EBAB v) Battery cable vi) 25 PIN Female to 9 female Adapter vii) USB to serial adapter viii) Battery Pack (Ni-Cd) or Better ix) Battery Box x) Battery Charging Adapter xi) Battery Charging Cable xii) Hand Set xiii) Radio Interface Cable for HF radio compatible with BEL xiv) Free and Radio Interface cable for VHF/UHF radio set xv) Serial Printer xvi) PC interface S/W CD xvii) carrying case xviii) secure key Gun Master (SKGM) (Optional)- for secure key management system xix) Secure Key Gun Slave (SKGS) (Optional)- for secure key management system xx) Master Replicator (optional) for secure key management system xxi) Slave Replicator (Optional) for secure key management system xxii) RRNG and its power adapter (Optional)- for secure key management system xxiii) Cable for Fill Gun (Optional) xxiv) USB Interface Cable (Optional) xxv) Carrying Harness (Optional) xxvi) Mounting Tray for SMART Plus (Optional)	Board will check practically.