

DRAFT QRs OF PORTABLE EXPLOSIVE CONTAINMENT SYSTEM (PECS)

S/No	Specification	Response from the firm	
1.	The size of Portable Explosive Containment System (PECS) should be equal to or less than 10 feet (length), 7.25 feet (height), 7 feet (width).	Compliant (Mention Yes or No)	Comments/ suggestion (in case non compliant)
2.	Internal hollow dimensions should be 19 inches (wide) min x 18 inches (height) min x 34 inches (length) min with an adequately sized door.		
3.	Minimum explosive sustaining capacity of 4 Kg TNT or equivalent (Single use).		
4.	Should be able to be towed by light vehicle like Maruti Gypsy, Tavera, TATA Sumo etc. The PECS should be able to move on rough and undulating ground.		
5.	It should have replaceable battery operated self propelled cart with an operational capability of min 3 hrs. It should be operated both by a tethered cable and wireless remote control. The wireless remote control should be functional at a distance of min 100 mtrs. 100 mtr tethered cable to be provided with the eqpt for wired operation. One rotating (automatic or manual) disc or drum to be provided to roll & unroll the cable. Connectors to be provided if single 100m length cable not available. Wire disc or drum can be inbuilt or separately provided.		
6.	Limit sensors to be installed to detect door completely opened or completely closed.		
7.	There should be a kill switch for emergency shutdown of PECS on tethered control device and wireless remote control.		
8.	Door can be manually opened or closed in case of power supply failure within 5 minutes.		
9.	The turning radius should be less than 3 meters to support operations inside and outside the building.		
10.	Should be fitted with programmable logic control for remote opening and closing of the door by using any available Explosive Ordnance Disposal (EOD) robot or by wireless remote control or wired (tethered) control.		
11.	It should be completely battery operated (without any petrol/diesel/CNG/LPG based engine/generator) for operation and propelling inside and outside building, malls etc.		
12.	There should be built - in trickle charge battery chargers with sealed & hairline outlet so that unit can be plugged-into conserve battery.		
13.	Preferably Should have cellular radio mobile frequency shield/Jammer to stop or prevent the operation of RCIED upto 5m radius.		

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		Compliant (Mention Yes or No)	Comments / suggestion (in case non compliant)
14.	Design of PECS should be made to allow Air lifting of the said equipment as underslung.		
15.	Should be provided with a remotely operated winch to lift the PECS alongwith a ramp to send PECS inside a vehicle for loading and unloading.		
16.	Variable speed control and braking system to be provided on wired/wireless remotes for controlled loading/ unloading.		
17.	Bomb tech should be able to take X-ray of the suspected luggage inside the said PEC Sand should get a clear image of the suspected device and mechanism inside the luggage.		
18.	Maintenance and cleaning tools to be provided with the eqpt. Two tyres alongwith Jack (Mechanical and hydraulic) to be provided with eqpt.		
19.	Total weight of the PECS should be less than or equal to 4000kg.		
20.	User manual in English language be provided with the equipment.		

DRAFT TRIAL DIRECTIVE OF PORTABLE EXPLOSIVE CONTAINMENT SYSTEM (PECS)

Ser No	Parameter	Trial Directives	Response from the firm
1.	The size of Portable Explosive Containment System (PECS) should be equal to or less than 10 feet (length), 7.25 feet (height), 7 feet (width).	To be checked physically by BOO. As per the draft TDs it should be able to negotiate or pass through door size of 7.75 feet (height) x 6.50 feet (width). Door of this size to be provided by the firm for testing during the trials.	Compliant (Mention Yes or No) Comments / suggestion (in case non compliant)
2.	Internal hollow dimensions should be 19 inches (wide) min x 18 inches (height) min x 34 inches (length) min with an adequately sized door.	To be checked physically by BOO. As per the draft TDs physically check the door size by placing a box of 19 inches (wide) x 27 inches (high) x 39 inches (long) on the extended tray then retracting the tray inside the equipment along with the box. The above operation will be repeated with several carry-on luggage samples of varying size and shapes by using both EOD robot and manipulator.	
3.	Minimum explosive sustaining capacity of 6 ± 2 Kg TNT or equivalent (Single use).	To be checked physically by BOO. OEM/ Supplier to provide a certificate from National/ International accredited lab certifying the same. Testing Procedure (a) Place explosive charge inside the PECS and close the door. (b) Drive self-propelled PECS with charge inside container over route, demonstrating unit's ability to move over uneven terrain, slopes and tight turns without dislodging charge inside the standoff distance from the nearest wall surface. (c) Detonate 4 Kg TNT in container. (d) Majority of dynamic shock loading should be mitigated and leakage pressures should be directed primarily upward.	

Note:-

Any condition leading to a breach or rupture, any leakage of fumes/gas/vapour from the container during detonation or primary or secondary fragment hazard outside the vessel will be considered "FALL".
There should be no crack on the body due to the blast inside PECS. The objective is to verify operational procedure as well as structural capacity of the container to resist detonation at full charge capacity of 6 ± 2 Kg TNT.

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4.	Should be able to be towed by light vehicle like Maruti Gypsy, Tavera, TATA Sumo etc. The PECS should be able to move on rough and undulating ground.	To be checked physically by BOO by driving around to see the stability with different vehicles available.	Compliant (Mention Yes or No)	Comments/ suggestion (in case non compliant)
5.	It should have replaceable battery operated self propelled cart with an operational capability of min 3 hrs. It should be operated both by a tethered cable and wireless remote control. The wireless remote control should be functional at a distance of min 100 mtrs. 100 mtr tethered cable to be provided with the eqpt for wired operation. One rotating (automatic or manual) disc or drum to be provided to roll & unroll the cable. Connectors to be provided if single 100m length cable not available. Wire disc or drum can be inbuilt or separately provided.	To be checked physically by BOO using cable and wireless remote control minimum from 100m distance. This should be demonstrated with the use of both wireless and wired tethered controls. The operational capability of 3 hrs to be checked physically by moving the vehicle continuously for the duration.		
6.	Limit sensors to be installed to detect door completely opened or completely closed.	To be checked physically by BOO. BOO to physically check the sensor functionality by opening and closing the door 5 times.		

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7.	There should be a Kill switch for emergency shutdown of PECS on tethered control device and wireless remote control.	To be checked physically by BOO. The PECS should instantly stop moving during the door opening or closing routine when the kill switch is engaged at the PECS and at the remote. This should be demonstrated with the use of wireless, wired (tethered) control and with switch on the device.	Compliant (Mention Yes or No)	Comments / suggestion (in case non compliant)
8.	Door can be manually opened or closed in case of power supply failure within 5 minutes.	To be checked physically by BOO. The vendor to provide live verification demo of the capability to open & close the door if the primary power supply fail. (Primary power supply to be switched off while testing).		
9.	The turning radius should be less than 3 meters to support operations inside and outside the building.	To be checked physically by BOO.		
10.	Should be fitted with programmable logic control for remote opening and closing of the door by using any available Explosive Ordnance Disposal (EOD) robot or by wireless remote control or wired (tethered) control.	BOO to physically check using EOD robot (wired (tethered) and wireless connection) to demonstrate door operation (open-if close and closed-if open). Perform the routine five (5) times.		
11.	It should be completely battery operated (without any petrol/ diesel/ CNG/ LPG based engine/ generator) for operation and propelling inside and outside building, malls etc.	BOO to physically check the internal battery of the PECS. It should be rechargeable batteries from the electrical power outlet. Check if the entire PECS operations are powered from the battery (door operation and PECS mobility). No combustion engine or generator should be powering the system.		

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12.	There should be built - in trickle charge battery chargers with sealed & hairline outlet so that unit can be plugged-in to conserve battery.	To be checked physically by BOO.	Compliant (Mention Yes or No)
13.	Preferably Should have cellular radio mobile frequency shield/Jammer to stop or prevent the operation of RCIED upto 5m radius.	BOO to physically check that PECS should be able to jam cellular radio mobile frequency. Three (03) x mobile phones with 3G, 4G and CDMA to be used. The 03 x mobile phones will be kept inside the luggage/bag/ suitcase inside PECS. Then close the door of PECS. Jammer of PECS to be in working condition prior to putting the mobile phone into PECS. No call should be able to connect from other phone outside 5m radius or more. Again perform the operation with the Jammer non working condition. Put the 03 x mobile phones inside PECS. Switch on the Jammer. Test for connectivity it should not connect when Jammer is on.	/ suggestion (in case non compliant)
14.	Design of PECS should be made to allow Air lifting of the said equipment as underslung.	BOO to check physically. Minimum 4 points to be provided on top of PECS for under slung airlift. Certificate from OEM to be provided that the design is suitable and ready for under slung airlift by aircraft.	
15.	Should be provided with a remotely operated winch to lift the PECS alongwith a ramp to send PECS inside a vehicle for loading and unloading.	To be checked physically by BOO. Ramp should not bend permanently or crack while loading & unloading. To be checked by loading and unloading PECS into a vehicle using winch and ramp.	
16.	Fixed/ Variable speed control and braking system to be provided on wired/ wireless remotes for controlled loading / unloading.	To be checked physically by BOO. To be checked by loading and unloading PECS into a vehicle.	

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18.	Maintenance and cleaning tools to be provided with the eqpt. Two spare tyres alongwith Jack (Mechanical and hydraulic) to be provided with eqpt.	BOO to check physically. Maintenance and cleaning tools to be provided along with list.	Compliant (Mention Yes or No)	Comments/ suggestion (in case non compliant)
19.	Total weight of the PECS should be less than or equal to 4000kg.	BOO to check physically and a Certificate from OEM to be provided mentioning total weight of PECS. The certificate should be of national/international accredited lab.		
20	User manual in English language be provided with the equipment	To be checked by board of officers.		
18.	Maintenance and cleaning tools to be provided with the eqpt. Two spare tyres alongwith Jack (Mechanical and hydraulic) to be provided with eqpt.	BOO to check physically. Maintenance and cleaning tools to be provided along with list.		