

**Minutes of Pre-Proposal Meeting**  
**13<sup>th</sup> February 2019 (1500 Hrs) – UNDP CO, 6<sup>th</sup> Flood Serena Business Complex,**  
**Islamabad**

**“UNDP-ITB-2019-031 - BULLET PROOFING OF 06 TOYOTA HILUX VIGO 4x4**  
**DOUBLE CABIN VEHICLES – MODEL 2014**

In light of the discussion in pre-bid meeting held on 13<sup>th</sup> Feb at UNDP. Summary of the changes is as below:

1. Vehicle Specification (Engine Capacity and transmission) reflected in the title of the specifications.
2. Serial No. 4. Protection level: Changes made to the protection against 2 HE36 and 2 DM51 Grenades – HG85 is removed
3. Serial No. 5 (a). No. VIII: Ballistic steel plates thickness revised as per standards
4. Serial No. 5 (a). No. X: Floor Design revised
5. Serial No. 5 (a). No. XI: Statement revised for clarity
6. Serial No. 5 (a). No. XII: Statement revised for radiator protection
7. Serial No. 5 (a). No. XIII: Statement revised for clarity
8. Serial No. 5 (a). No. XV: Ballistic termed is swapped to Blast Steel for flooring with revised thickness standard
9. Serial No. 5 (f). Suspension: Additional load capacity revised from 720 to 750 – 840 KG (Acceptable Range)
10. Serial No. 5 (g). Run Flat: Statement revised for clarity.
11. Serial No. 7 (a). No.II: Ballistic Certificates for steel and glass testing reports revised (included reports from Inspectorate of Armament Rawalpindi)
12. Serial No. 7 (a). No.IV: Sample sizes and quantities revised including submission deadline ( extended to 4<sup>th</sup> March 2019)
13. Serial No. 7 (b). No.IX: Material country of origin revised ( added Peru and Brazil for import of BR glasses and Steel).

# Specifications for Armoring of Vehicle

## BULLET PROOFING OF TOYOTA HILUX VIGO 4X4 DOUPLBE CABIN MODEL 2014 (ENGINE 3.0-L) MANUAL-TRANSMISSION.

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1. **Approving Authority.** United Nations Office on Drugs and Crime (UNODC) Country Office in collaboration with Government of Pakistan is implementing the Project “ Pakistan’s Action to Counter Terrorism ” with special reference to Khyber Pakhtunkhwa.
2. **Technical Scrutiny Carried Out By.** UNODC
3. **General.** UNODC requests the qualified and approved Ministry of Interior vendor in line with the guidelines of Government of Pakistan for armoring of vehicles to submit their detailed profile based on the following eligibility criteria.
4. **Protection level.** CEN VR6 / BR6/ B6 Protection including 7.62 ordinary X 51(.30 ball X 51)  
Floor protection: Against a minimum two DM 51 or two ~~HG85 grenades~~ or 2 HE36 grenades  
(~~CEN VR6+ / BR6+~~) (CEN VR6 / BR6)  
Landmine protection: ~~Against 2 land mines (2x DM31 optional)~~ :
5. **Armoring Details**
  - a. **Opaque Armor**
    - i. All four sides of the passenger compartment and the roof of the vehicle should protect using high-quality armor steel and glass defeating 7.62x51mm M80 NATO ball ammunition (U.S. NIJ level III, CEN level BR6/FB6) and 5.56x45 SS109 ammunition (CEN level BR6/FB6) at 0° incidence (90° to the surface) and 10m range according to CEN1063 and CEN1522
    - ii. The ballistic steel test reports should be EN 10002-1, EN ISO 6506-1, EN 1522, STANAG 4569
    - iii. The armoring should integrate inside the vehicle’s cab and will forms a complete self-supporting structure so as to avoid excessive stress on the vehicle’s original structure.
    - iv. Vehicle armoring shall be constructed in such a way as to ensure that a projectile following a linear or angled path shall not enter the vehicle’s interior without contacting the armored material.
    - v. Possibility of a projectile entering the vehicle’s interior due to a ricochet from the armor shall also be minimized.
    - vi. Armoring should also on the firewall area immediate behind engine area, front fenders, rear wheel, door panels and posts.
    - vii. Rear compartment deck shall also be armored see in the attached drawing.

- viii. ~~The Ballistic Steel Plates should have at least thickness 6.5 mm having B6 level of protection. The Ballistic Steel must qualify UK Def stan 95-24.~~ **The ballistic steel plates should have thickness max 6.4mm and min 5.3mm. The ballistic steel must qualify UK Def stan 95 24.**
- ix. The ballistic steel should have hardness in the range of 480-560 HBW and physical, chemical, mechanical properties as per UK Def stan 95-24
- x. Floor and Engine Blast Protection:  
**Floor design should provide protection against a minimum two DM 51 or two HG85 grenades (CEN VR6+/- BR6+), against a minimum two DM 51 or two HE36 grenades (CEN VR6/BR6). Landmine protection: Against 2 land mines (2x DM31-Optional).**
- xi. ~~Front head light should be cover by ballistic material and behind the front lights of the vehicle in order to provide protection to the engine compartment of the vehicle.~~ **Ballistic steel behind the front lights of the vehicle in order to provide protection to the engine compartment of the vehicle.**
- xii. **Radiator Armor.** Radiator shall be protected through ballistic material. Preferably, additional fan and air intake should be installed in order to keep the radiator temperature within vehicle's standard limits.
- xiii. **Battery Protection.** In order to avoid blast, battery should be sealed in a ballistic material container from all side.
- xiv. **Roof.** The roof should protect against 45-degree angle shots.
- xv. For the purpose of floor protection ~~minimum 4.5mm or 6.5mm ballistic steel~~ **Min 4.3mm or 6.4mm Blast steel** or composite materials for IED protection against level B6- whichever is higher subject to threat level particular area of the said vehicle. It is noted that floor protection also be lighter than standard material as compared to additional weight of the vehicle i-e 1/4<sup>th</sup> of the vehicle to sustained in center of gravity of the said vehicle.

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### b. Transparent Armor.

- i. Glass should be of 39-42mm thickness with finest optical quality.
- ii. Glass standard must be European EN 1063 for ballistic security glazing or US NIJ 0108.01 ballistic resistant materials should be able to provide multiple impact protection.
- iii. PVB/polycarbonate laminate 6.2kgs/sq.ft(13.7lbs/sq.ft) Thickness 39-41mm, Curve shape should use for all door glasses and wind shield while for rear compartment flat BRG installation required having the same tech specs.
- iv. Provision of anti-spall shield protection against shattering glass.
- v. Extreme ballistic performance at max and min temperature i.e. -15C to +60C.

- vi. Special Glass retention system to keep the bullet resistant glass strongly fixed to the vehicle's chassis avoiding its detachment during bomb blast attacks.
- vii. Noninterference in performance of night vision devices.
- viii. Clarity for Night Vision to avoid the duplication of the center point, The glass test report in accordance with EN 1522

c. **Doors.**

- i. Provision of armor overlaps at all the doors to prevent penetration through door posts and pillars. Should be Blast & ballistic protection NATO STANAG 2280 "Design threat levels.
- ii. Door pillars shall reinforce for maximum strength retention. All passenger doors should fit with overlap system to provides maximum strength retention to prevent penetration through door posts & pillars
- iii. Preferably all doors shall fit with suitable restraining straps to reduce the stresses to hinges during opening.
- iv. The door hinges are replaced with custom-engineered heavy-duty hinges bolted directly onto the armor through the pillars & the doors this prevents stress on the hinges and the internal panels which usually crack under the strain, Having the tendency UNI EN 1522
- v. Installation of doors NFPA 80 and UL 10C and bolt for Hinges should be CS and H8 standard
- vi. Actuator installation must be required at front left & right-side door on every vehicle.

- d. **Interior / Exterior.** All original internal / external panels should remain in their original shape. Upholstery work should less tolerance of fixing required specially on the pillars.

e. **Brakes**

- 1. **Service.** Hydraulic / air hydraulic / fully pneumatic dual circuit, power assisted to meet the Total GVW 3678 Kg approx load requirement of the vehicle.
- 2. Brake should upgrade – (slotted discs and braided hoses + HD calipers and pads)
- 3. Brake upgrade – Also (big discs, 6-piston calipers front, ~~4-piston calipers rear and pads~~ **rear drum and pads**)
- 4. **Parking.** Mechanical type, hand operated.

- f. **Suspension.** Heavy duty, coil/semi elliptical leaf spring with hydraulic shock absorbers or any other suspension system as per latest technology to ensure at par performance (fording height, ride comfort

etc) to meet the additional load of ~~720Kg~~ **750Kg to 840 Kg** approx. on the passenger compartment while 438Kg of the rear trunk load requirement of the vehicle. (Total GVW 3678 Kg approx.)

g. **Tires (Run Flat).** Run flat / inserts which should be capable of running preferably 30-50 km after damage. Five Run Flats required for each vehicle along with heavy duty new tires of minimum 10-ply and size R-15.

h. **Acceleration.** Engine should be capable to provide enough power and torque to meet the GVW of the vehicle after armoring.

i. **Number of Passengers.**

1. **Cabin.** Driver plus three/four passengers.
2. **Rear Body/Trunk.** Rear compartment/trunk shall be armored as per the drawings attached along with installation of folding seats with comfortable leather seat covers.

j. **Testing Standards.** Testing Standards for opaque / transparent material will be **Pakistan standard level III** which is following:

Protection	Cal	Type of Bullet	Test Condition		Standard Hit spacing
			Velocity	Std	
			m/s	m	
Assault Rifles	7.62x39mm	FMJ/SCP /PB/HCI	740±10	10 +0.5	For glass & steel  Equilateral triangle of 120mm
	5.56x45mm	FJ/BP/SCP	915	10 +0.5	
	7.62x51mm	FJ/PB/SC	830±10	10 +0.5	
Hand Grenade and Mine Blast Threat	<p style="text-align: center;"><b>Floor only</b> Floor protection: Against a minimum two DM 51 or two HG85 grenades (CEN VR6+/ BR6+)</p>				

\*Testing facility in respect of assessment test & trial of raw materials regarding retrofitting of bullet proof vehicles can be use by armament department or police department subject to the entire satisfaction of the project.

k. **Air Conditioning System.** An air conditioner system should be capable to maintain temperature within comfort zone i.e. to 26C.

l. **Fire Extinguisher.** Fire Extinguisher 1-kilogram capacity, ozone friendly.

m. **Payload / GVW.** GVW should not exceed from rate payload capacity of vehicle including passengers after retrofitting.

n. **RETROFITTING WORK LOAD ASSESTMENT DETAILS:**

<b>Sr No.</b>	<b>Description</b>	<b>Kerb weight Soft Skin vehicle Before Armoring</b>	<b>Kerb weight After Armoring Applying Additional Load</b>	<b>Differences</b>
01	<u>Toyota HiLux 4X4 VIGO</u>			

02	<u>Rear Body Trunk (Tray)</u>  <b>Additional Armoring</b>			
03	<u>KERB WEIGHT</u>  <u>GVW</u>			

\*fill the above table and submit with bid documents.

**6 Other features.**

- i. Roof of the vehicle should also provide protection against assault rifles fire / hand grenade as mentioned in paragraph 5 j.
- ii. Upgraded vehicle tire jack to lift the additional weight of the armor.
- iii. Blast protection shall be providing to the fuel tank and engine.
- iv. Stability of the vehicle should not get compromised as centre of gravity is raised after armoring which could affect the stability in covering and braking. Hence, care must be taken to handle the vehicle.
- v. Armoring of vehicles should be carried out using world class quality products from all around the globe must be branded.

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**7 a. The vendor must submit the following with the bid:**

- i. The imported bullet resistant glass shall not be manufacture later than 6-months.
- ii. **Ballistic Certificate for steel and glass issued by manufacture from duly NATO accredited laboratory with indication of batch number** ~~NATO accredited laboratory with indication~~

~~of batch number is required with each supply of store~~ OR test report issued by Inspectorate of Armament Department Rawalpindi not later than January 2019.

- iii. Contractor / vendor shall provide at least three clients certificate of performance.
- ~~iv.~~ Contractor shall provide test sample of bullet resistant glass and steel ~~sizes 18X18 inches with tender documents.~~ Three samples of sizes 500mmX500mm or 600mmX600mm for BR steel and BR glasses shall reach the UNODC Country Office Islamabad on **4<sup>th</sup> March 2019 COB.**
- v. The firm must provide the technical data including the welding techniques from the manufacturer. The sample will be tested with weld on sample plate. The sample with welding must qualify B6 level of protection as per EN 1063, EN1522 & EN1523
- vi. The Offer must show a comparison between our specifications and specifications offered by firm.

**b. Important points to be noted:**

- i. Vendor will be responsible to provide free maintenance services for one year at Peshawar, which will include brakes, suspension, door actuators, and door hinges.
- ii. Warranty: vendor will include warranty details for all imported parts of the vehicle i-e Glasses, suspension, tires, run flats in his technical proposal.
- iii. During retrofitting UNODC technical team will visit the contractor setup time to time If improper work is found, will issue Negligence in Work Performance Letter to the contractor, after issuance of two such letters a penalty @ 10% of the cost of the vehicle will be levied and improper work will be redone as per specification and contract details.
- iv. Completion of retrofitting and before interior fixing, contractor will inform UNODC technical team to visit the welding work.
- v. Prices quoted must be free of taxes & duties.
- vi. UNODC will provide exemption certificate for imported parts/components. The supplier will provide copy of bill of landing, invoice and list to enable UNODC to request exemption from MOFA.
- vii. Technical evaluations will be done on the basis of technical proposal and sample test reports.
- viii. The vendor will be responsible to transport the vehicles from Peshawar to his premises and back to Peshawar after retrofitting.
- ix. Materials country of origin: **North/Western Europe/USA/Finland / Sweden / Austria / Australia/Peru/Brazil**

