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BUSINESS CASE

URD 1090

SNATCH 2

PROTECTED PATROL VEHICLE

DEC(SP)/68/20
Dated 14 Apr 04

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BUSINESS CASE – SNATCH 2 (PROTECTED PATROL VEHICLE)

EXECUTIVE SUMMARY

ISSUE

1. This submission seeks Main Gate approval for the Development and Manufacture phases for the procurement of 312 Protected Patrol Vehicles (PPV), a Category D project with a procurement value of £13.01M (VAT inclusive 50% confidence).

RECOMMENDATIONS

2. The Approving Authorities are invited to approve:

a. The highest acceptable cost (EP 04 outturn, VAT inc) for the Demonstration and Manufacture phases of the project of:

(1) £0.590M total resource consumption (including Annually Managed Expenditure, 90% Confidence, VAT inc); and

(2) £14.98M capital expenditure (90% Confidence, VAT inc).

b. The minimum acceptable performance level as defined by the KUR/KSRs.

c. The $ISD_{90\%}$ of Feb 05 as defined by the delivery of 80 fully supportable systems (ie a Battle Group Capability) to the User.

d. The Procurement and Support Strategies detailed in this Business Case.

3. The Approving Authorities are invited to note:

a. The $ISD_{50\%}$ of Dec 04 as defined by the delivery of 80 fully supportable systems to the User.

b. The IOC quantity of 312 vehicles.

c. This project is an operational precursor to the overarching Cat C Project DUCKBOARD. DCRS and IAB Sec have accepted this Category D Business Case as a novel procurement approach to meet an urgent requirement. A fully developed Cat C Business Case will capture the full requirement for Protected Patrol Vehicles, establishing the appropriate mix of vehicle types through the COEIA process. Initial OA[1] and HQNI post Normalisation planning[2] confirm that this approach is appropriate and supports the conclusion that minimum 312 PPV vehicles will continue to be required.

d. The 3 – point cost estimates for the project of:

Project Phase		Resource Cost (inc. AME)			Capital Cost		
		10%	50%	90%	10%	50%	90%
Demonstration and Manufacture	MG Estimate	£0.480M	£0.530M	£0.590M	£11.24M	£12.48M	£14.98M

(VAT incl @ Outturn)

e. The expected Cost of Ownership (COO) and total COO (VAT inclusive 50% confidence) of:

[1] Dstl/LSD/100/3/3/1/CP2 dated 31 Mar 04 (VECTOR OA Paper)
[2] HQNI Post Normalisation Vehicle requirement confirmed at 474.

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Year(s)	Conc.	Assess.	Demo.	Manu.	CADM Total	In Service	Disp.	CADMID Total
DPA	£0.00M	£0.20M	£0.33M	£12.48M	£13.01M			£13.01M
DLO						£2.42M	£0.32M	£2.74M
FLC						£0.50M		
Total					£13.01M	£2.92M	£0.32M	£16.25M
Total Cost of Ownership								£16.25M

f. It is expected that a major capability upgrade of the current SNATCH vehicle would provide the capability within an acceptable time frame and would provide the best value for money solution.

g. A legal review is not required as SNATCH 2 does not cover a system that is a "*method or means of warfare*" within the meaning of Article 36 of the First 1977 Protocol Additional to the Geneva Conventions 1949 (Additional Protocol I). It should be noted that the system does not have an offensive capability; rather it is intended to support CT operations and training[3].

APPROVAL

4. DEC(SP), SUV IPTL, SUV SFO and AD Tech2 (Acq Sp) are invited to approve the SNATCH 2 Business Case:

NAME	APPOINTMENT	SIGNATURE
	DEC(SP)	
	SUV IPTL	
	SUV SFO	
	AD Tech2 (Acq Sp)	

BACKGROUND

5. Protected Mobility Requirement. SNATCH 2 is required to provide tactical mobility in order to allow Combat, Combat Support and Combat Service Support elements to carry out their roles[4]. Such vehicles require sufficient levels of crew protection and mobility to operate in hostile environments, with specific threats identified as small arms fire, blast and fragmentation. Vehicles must be inherently reliable with high availability. Technical advances in vehicle performance must be allied with the requirement to reduce the diversity and demand of the vehicle fleet's logistic footprint. This concept has been well proven with the current SNATCH in Northern Ireland.

6. Context. Project DUCKBOARD began life as a Cat C programme, to replace Projects SNATCH and TAVERN, which aimed to provide light protected mobility for Counter-Terrorist (CT) and Public Order (PO) operations in NI from 07/08 onwards. The demands of operations in Afghanistan and Iraq have led to the globalisation of the requirement and the need for a "modern" SNATCH equivalent, operating to a CONUSE and CONOPS derived from the NI experience, to support expeditionary operations worldwide. As explained in the DUCKBOARD Way Forward Paper[5], the requirement to provide such a light protected patrol vehicle should be provided early,

[3] D/ALS2/17/2/19 dated 9 April 02.
[4] Vehicle mounted troop deployments, urban and rural area patrolling and administrative tasks
[5] D/DEC(SP)/68/20 dated 26 Mar 04.

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over 04/05 and 05/06, to meet immediate operational needs[6] as a subset of the overall DUCKBOARD project.

SINGLE STATEMENT OF NEED

7. To provide a capability that will afford the User sufficient protection and mobility to allow framework operations to be conducted in a semi-permissive environment, in both the NI theatre and in support of expeditionary operations worldwide, over FYs 04/05 and 05/06.

JUSTIFICATION

8. Immediate Requirement. Operational experience in Bosnia[7], Kosovo, Macedonia[8], Afghanistan (AFG) and Iraq[9] has highlighted capability gaps in protected mobility for troops operating in Peace Support and post-conflict/CT situations. Most recently a number of SNATCH have been reallocated from NI for operations in Iraq and AFG, with UOR action to adapt them for the new environment; the requirement for light protected mobility is expected to grow in future. In recognition of this trend, the Defence Management Board in Feb 04 endorsed an EP04 enhancement measure[10] to bring forward funding for light protected vehicles into 04/05 and 05/06. Despite initial moves towards Normalisation, the requirement for protected mobility in NI, particularly in the Public Order (PO) role, remains enduring. The current SNATCH fleet is over years old and is in heavy operational use. Chassis corrosion problems[11] have led to a requirement to rework some 45 vehicles/year, at fourth line workshops, to support the NI liability. The Equipment Support Manager for SNATCH, SUV IPT, has stated that it will become increasingly difficult to sustain after 18 months on Op TELIC without a substantial upgrade or replacement programme[12]. Some form of project to maintain the current operational PPV capability in NI, Iraq and AFG will therefore be essential in FY 04/05.

9. Medium-Term Plan. This initial tranche of PPVs will in the medium term provide the patrol and post-Normalisation Public Order support capabilities for NI; an uplift from this purchase of 312 vehicles to the desired NI scaling of 474 may be necessary. Project DUCKBOARD COEIA will establish the requirement for SNATCH 2 in the worldwide role, as well as defining EOD and wider Defence requirements.

OPTIONS

10. The following options were considered in order to meet the capability requirement:

a. Option A – Do Nothing. Many Peace Keeping (PK) roles undertaken on a regular basis require the adoption of a 'non-aggressive' presence to promote a return to relative normality. This is difficult to achieve with legacy platforms designed for High Intensity Conflict (HIC), where their high profile makes them unsuitable. Lighter platforms may achieve the right appearance but do not provide the necessary force protection against the generic threat. The 'Do Nothing' option is discounted as it would lead to a capability gap.

b. Option B – Minor Refresh. Currently available vehicles do not provide a sustainable capability (see para. 8). The SNATCH fleet has reached its planned Out of

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[6] To replace 208 SNATCH vehicles provided through UORI0383 (fitted with ACU and described as SNATCH 1.5).
[7] The death of Bosnia.
[8] The death of Op BESSEMER.
[9] Deaths of EOD and RMP personnel.
[10] EP04SP205A.
[11] Recent evidence includes the SNATCH on Op TELIC whose chassis snapped in two whilst the vehicle was on suspended tow.
[12] CSS4433 dated 16 Dec 03 (HQNI Chassis Corrosion Report).

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Service Date (OSD)[13] and refreshment work would not be cost effective. This option is therefore discounted.

c. Option C – Major Refresh. Technical evaluation of the existing SNATCH fleet has identified that the main problems with the 10 year-old system are the condition of the chassis and the automotive train. The protected "pod" mounted on the vehicle has suffered little degradation and could be reused[14]. The simplest and cheapest route to achieve a SNATCH life-extension/upgrade would therefore be to mount the existing "pods" on a new base vehicle with automotive commonality with existing TUL/TUM(HS) fleets; upgrades to communications and ECM would be included. The vehicle would also comply with the NATO single fuels policy. The utilisation of a new and heavier duty chassis is expected to facilitate an increase in payload of up to which may in due course provide potential to stretch protection levels up to [15].

d. Option D – Procure Commercial Off the Shelf (COTS). A COTS vehicle will meet the capacity, mobility and protection requirements. The cost of such a vehicle makes meeting the full requirement unaffordable and is not achievable in the required timescale. This option is discounted.

11. Preferred Solution. It is recommended that the requirement be met by a major Refresh (Option C from Para 10), known as SNATCH 2. This recommendation is supported by OA[16].

CUSTOMER FOCUS

KEY USER/SYSTEM REQUIREMENTS

12. The Key User/System Requirements (KUR/KSRs) for SNATCH 2 are tabulated below:

KRs (a)	Requirement (b)	Remarks (c)
K1	The vehicle shall provide the User with protection from	Standard equivalent to current SNATCH
K2	The vehicle shall provide the User with protection from	Standard equivalent to current SNATCH
K3	The vehicle shall provide the User with protection from devices comparable to	Standard equivalent to current SNATCH
K4	The vehicle should provide Medium Mobility	DEF STAN 23-6
K5	The vehicle must be able to accommodate six personnel	Commander and Driver will operate from the front of the vehicle. Weight of each crew member including equipment, personal weapon and ammunition is 100 kgs
K6	The vehicle must be capable of being fitted with all current and future ECM equipment	Based on L
K7	The vehicle must be capable of being fitted with all current and future communications	A radio installation comprising one of the following: BOWMAN (Clip In due to weight limitations), COUGAR, J and PMR minimum.
K8	The User shall be able to operate the System in temperature range classified as A1 to C2.	Still air temperature. Climate control will be required to meet H&S requirements. Based on experience leading to UOR I0383.
K9	The vehicle must be strategically deployable using In-	Minimum C130 and C17

[13] OSD 04/05

[14] Qinetiq/FST/TR023132 dated 10 Oct 02 (Project DUCKBOARD – Land Rover TUM (VPK) refurbishment and uparmour study.

[15] is proof against fire at range.

[16] Dstl/LSD/100/3/3/1/CP2 dated 31 Mar 04 (VECTOR OA Paper) confirms cost for Base Overhaul (Do minimum) as £64M compared to £57M for Major Refresh (SNATCH 2).

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	service and future air platforms	

QUANTITY AND ALLOCATION

13. The total interim requirement is 312, allocated as follows:

Ser (a)	Theatre (b)	Quantity (c)	Remarks (d)
1	Op TELIC	208	
2	Afghanistan	6	
3	NI replacement	45	Avoids STP refurbishment programme for 04/05
4	Spear Head Land Element	24	Includes the NI refurbishment requirement for 45 in 05/06
5	Repair Pool	29	Includes the NI refurbishment requirement for 45 in 05/06
6	Total	312	

PROGRAMME DATES

14. In-Service Dates. $ISD_{50\%}$ will be Dec 04. The ISD is defined by the delivery of 80 fully supportable Systems to the TELIC User.

15. Key Milestones. Key programme milestones are annotated below and have been agreed between the Equipment Capability Customer and DPA. The dates provide the ideal time profile. All dates are flexible with the exception of the ISD.

SER (a)	MILESTONE (a)	DATE (Achieved By) (a)
1.	URD/SRD Endorsed	Mar 04
2.	BC Endorsed	Apr 04
3.	ITT Issued	Apr 04
4.	Tender Returns	Jun 04
5.	Down selection of Chosen Contractor	Jul 04
6.	Contract Let	Aug 04
7.	System Acceptance	Sep 04
8.	Logistic Support Date (LSD)	Nov 04
9.	**In Service Date ($ISD_{50\%}$)**	**Dec 04**

16. Life Expectancy. SNATCH 2 is to have an operational service life of a minimum of 10 years.

SUPPLIER FOCUS

PROCUREMENT STRATEGY – SNATCH 2 OPTIONS

17. Option 1 – Lease/Hire. At present, there is no MOTS/COTS vehicle that would permit the possibility of leasing. PFI is not considered appropriate as the requirement is for a militarised asset which can be used as required by the MOD in a CT role, rather than a service that is capable of definition in output terms. This option is not considered further.

18. Option 2 – Single Source/Non-competitive. There is sufficient capacity in the commercial market to conduct a limited competition to obtain value for money. There is therefore no need to pursue a single source route.

19. Option 3 – Multiple Source/Competitive. A limited competition against a Cardinal Point Specification detailing the main requirements will be produced. A Tender will be issued to ABRO.

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NP Aerospace and Hobson Industries, as all three companies have the capability and facility to conduct the work in the timescale required. There is no requirement to advertise the programme as it is an armoured vehicle and a classified project. All three contractors have or have had involvement with the original SNATCH vehicle; NP Aerospace being the Design Authority, ABRO are the In-service maintainer and repairers and Hobson Industries conducted work on the concept demonstrator and are prime contractor for the PSNI Armoured Land Rover. Land Rover will be supplying the base chassis and automotive parts for the conversion to take place. This will provide standardisation of parts, a warranty for the vehicle and Design Authority clearance for the conversion.

20. Selected Option. The selected option is Option 3. It offers the most likely option to provide the required capability within the stipulated delivery timeframes and the most likely option to deliver value for money.

SUPPORT STRATEGY

21. General. The Support Strategy has been agreed between Tech 2a DLO and SUV IPT. SNATCH 2 will be subject to an in-service military support package backed by a limited 12 month warranty appropriate to the selected vehicle. A Logistic Support Committee (LSC) will be established under the chairmanship of SUV ILSM, to implement the tailored application of Def Stan 00-60 ILS. As the preferred option is to base the automotive parts of the major refresh on TUL/TUM(HS) a significant amount of the support element is already in place and will require expanding to include the SNATCH 2 fleet.

22. Through Life Management Plan (TLMP). SUV IPT will manage the project throughout its life up to and inclusive of Disposal. A full TLMP exists both for the current platform and the preferred TUL/TUM(HS) chassis. TLMPs will be updated throughout the demonstration and manufacture phases.

23. Scheduled Maintenance. The operator will carry out Level 1 to Level 4 maintenance (to include routine servicing).

24. Warranty. A warranty of at least 12 months is required from date of equipment issue for all components of the System effected by this Business Case and its associated System modification. The terms of the warranty should allow repairs to be carried out by Service Personnel or their Agents when operational requirements dictate, with the costs being claimed back at an agreed date.

25. Spares Support. As the preferred option is based on commonality with the TUL/TUM(HS) fleet, the majority of the spares will be provided through existing contracts. New items will be identified and scaled.

KEY RISKS

26. Overall the level of risk inherent in the project is low. The key risk is time, which has been mitigated by a number of measures. The assessments of risk for SNATCH 2 against the procurement parameters of performance, cost and time are as follows:

a. Performance. Industry has produced Concept Demonstrators at risk to demonstrate the capability. An initial tranche of vehicles will be provided to HQNI (to replace loan vehicles). These vehicles will confirm the requirement and detailed build standard prior to full production. Full production is likely to start after the NI Marching Season (Sep 04) when NI will be able to release vehicles into the programme. This will allow a 2 month trials period. Performance risk is considered low.

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b. Cost. There is a degree of risk regarding how future communication systems will be incorporated into the vehicle system. Some of these have not yet reached production (such as J and others (such as BOWMAN) have suffered cost and weight penalties when incorporated into existing vehicle fleets. Integration costs for the various communication systems stipulated in this Business Case cannot therefore be accurately baselined at this stage. Prioritisation of the various requirements will mitigate against the risk of cost growth, which as a result is considered medium.

c. Time. Time risk is a key factor but is considered to be low through the adoption of a number of measures. There is a risk that a single contractor would be unable to produce the required numbers of modified vehicles in the timeframes stipulated in this Business Case. To counter this potential risk it is anticipated that the production work could be shared between a number of contractors to perform the work to a common fleet standard. This increase in contractors would increase the production capacity to the required level to match the stipulated production timeframe. The use of Limited Competition, and concurrent activity with Concept Demonstrator User Trials within the tender period also mitigate the time risk.

27. Risk Management. The risk remaining in the project will be managed using a risk register shared with the chosen contractor.

FUNDING

28. Category C Business Case. This Cat D MGBC, to provide those SNATCH vehicles identified in Para 13, is supported by current OA. Fully developed justification, in the context of a BoI, will be undertaken in support of the overall Project DUCKBOARD Cat C submission in Sep 04. The urgency of the requirement has meant that the BoI will not be complete before funds must be committed to ensure that the capability remains available for operations. Work conducted at risk by manufacturers confirms that SNATCH 2 can meet the capacity, protection and mobility requirements of NI and ROW PPV. Evidence will be presented in the Cat C Business Case to demonstrate that investing in SNATCH 2 early remains the most cost effective option.

29. COEIA. The Cat C IG BC will be based upon a COEIA document which will demonstrate need and numbers for the continuing requirement in NI, the ROW requirement and the EOD requirement. It is expected that this BC will make the case for an improved level of mobility and an increase in protection for subsequent production

30. EP04 Phase 3 Baseline Provision. Funding will be found from the DUCKBOARD line. The following profile was endorsed during EP04, demonstrating that the project is affordable:

	04/05 £(M)	05/06 £(M)	06/07 £(M)	07/08 £(M)	08/09 £(M)	09/10 £(M)	10/11 £(M)	11/12 £(M)	12/13 £(M)	Total £(M)
RDEL Requirement	0.230	0.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.530
CDEL Requirement	6.810	5.670	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.480
R-DEL EP 04 Baseline	0.230	0.310	0.560	0.990	1.170	1.140	0.570	0.000	0.000	4.947
C-DEL EP 04 Baseline	6.810	9.230	26.880	4.15	0.000	7.410	5.440	0.000	0.000	59.920

31. Support Funding. The endorsed STP 04 funding line for SNATCH is shown below. SUV IPT have confirmed that, subject to lessons learnt on deployed operations which may lead to minor amendments, there is sufficient funding to support the three SNATCH variants.

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	04/05 £(M)	05/06 £(M)	06/07 £(M)	07/08 £(M)	08/09 £(M)	09/10 £(M)	10/11 £(M)	11/12 £(M)	12/13 £(M)	Total £(M)
STP 04 Endorsed SNATCH	5.39	5.538	5.525	5.372	0.00	0.00	0.00	0.00	0.00	21.825
STP Requirement	0.00	0.234	0.239	0.244	0.00	0.00	0.00	0.00	0.00	0.717

SECURITY

32. Classification. The Business Case is classified UK SECRET – UK/US EYES ONLY on the basis of information relating to protection level requirements.

33. Publicity. There will be considerable interest in SNATCH 2 as a result of recent deaths and injuries. The existence of the project is releasable, as is general information concerning the platform. Payload and performance details must not be discussed. A proactive approach such as a limited press release would be appropriate.

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