CAPABILITY PRODUCTION DOCUMENT (CPD)

FOR

RAPID ENGAGEMENT PRECISION RIFLE (REPR)

Potential ACAT: III

Validation Authority:

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EXECUTIVE SUMMARY

The Scout Sniper Initial Capabilities Document (ICD) identified the scout sniper's ability to rapidly engage multiple targets at long range with precision as a critical material capability gap associated with effective scout sniper performance. The results of the ICD led to the Rapid Engagement Precision Rifle (REPR) Capability Production Document (CPD), under the direction of the Marine Corps Fires and Maneuver Integration Division, Capability Development Directorate (FMID, CDD).

The combined effect of this gap is an overall shortfall in mission capability as the survivability, lethality, and precision of scout snipers is materially limited. As described in the Scout Sniper ICD, the lack of a program of record for a REPR system has led to a diminished ability to perform to threshold standards established during the Functional Area Analysis (FAA) of the Scout Sniper Capabilities Based Assessment (CBA) highlighted in the following scenarios:

- Urban environments where multiple fleeting targets present themselves;
- Defensive close quarters scenarios where scout snipers must escape and evade numerically superior enemy forces by rapidly engaging multiple targets;
- Offensive ambush type scenarios where a premium is placed on massed volumes of accurate fires against enemy targets (prevents escape and ability to return fire);
- Quick adjustments from short range to long range engagements;
- Precision rapid engagement of multiple targets where reduced rates of fire may place friendly forces in danger (massed attacks, suicide bombers, multiple sentries on a raid site, etc.); and
- Operations where rapid follow-up shots are necessary to ensure the effective engagement of enemy (suicide attacks, counter-sniper, enemy under the influence of drugs, etc.).

The REPR addresses these shortfalls by incorporating reliable, semi-automatic operation in a precision fire weapon system in order to increase the overall firepower and lethality of a scout sniper team. The REPR will allow the scout sniper to rapidly engage multiple targets out to an objective of 1000 meters, with the added ability to effectively engage enemy combatants in close quarters combat (CQC) if necessary. The system can act as either a stand alone scout sniper weapon system or augment other systems by providing the ability to engage the volume of targets required to maintaining urban battlespace tempo of operations.

The REPR CPD addresses the materiel gap in precision rapid engagement of multiple targets out to the objective range of 1000 meters identified in the Scout Sniper ICD. The analysis takes a holistic approach to implementing the solution across the doctrine, organization, training, materiel, leadership, personnel, and facilities (DOTMLPF) spectrum. Holistic evaluation also includes evaluating the full weapon system with its dedicated optics, ammunition, magazines, sensors, and ancillary devices. Accordingly, analysis of lifecycle costs, operational effectiveness, and fielding schedule requirements were undertaken through direct consultation with subject matter experts (SME) and stakeholders. This stakeholder and SME input were used to validate the need for each requirement.

The requirements set forth in this CPD ensure that operators will receive the optimal system to provide a lasting solution. Follow-on action will require a full and open testing and evaluation

cycle of mature commercial of the shelf (COTS) items that meet the performance parameters set-forth in this study. COTS items for procurement will allow for an aggressive selection and fielding timeline and are the preferred solution. However, it may be necessary to use a spiral development plan to support meeting all objective requirements with one system or to improve the system in response to likely threats and advances in technology. To support the REPR's procurement timeline and to provide a baseline for testing and evaluation of potential weapon systems, all initial weapon systems submitted for contract competition must use 7.62 x 51 mm M118 LR ammunition, the current M8541 Scout Sniper Day Scope (SSDS), and be capable of mounting currently fielded night optics and aiming devices. REPR submissions shall also come with a manufacturer supplied suppressor although procurement of the weapon will not require that the supplied suppressor also be procured as a part of the system.[1] Finally, this does not exclude the possibility for the selected system to incorporate new calibers, optics, and technology to obtain objective standards as a part of planned spiral development.

[1] Although the REPR will be tested and evaluated with the manufacturer supplied suppressor, the REPR maybe procured independent of the supplied suppressor to allow for the best system item(s) to be procured.

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1. CAPABILITY DISCUSSION

The United States Marine Corps (USMC) requires a Rapid Engagement Precision Rifle (REPR), to support scout sniper operations over the next decade (FY08 – FY17). The capability for scout snipers to rapidly engage multiple targets with precision is a validated joint critical need that has yet to yield a long term solution. To provide the full spectrum of scout sniper capabilities (reference: the six capability areas identified in the Marine Corps Scout Sniper Initial Capability Document (ICD)), USMC Scout Snipers require a weapon system to be procured and fielded as a program of record (POR) to replace the current Mk 11 semi-automatic sniper system. The Mk 11 does not provide a long term solution to fill the capability gaps identified by the Scout Sniper ICD and was procured as a short term fix for the gap regarding precision rapid engagement of multiple targets. The procurement of the Mk 11 was based on an urgent operational need until a POR could be established and currently, no more Mk 11's are being procured by the USMC. Once the REPR is selected for procurement, it will be fielded in accordance with the fielding plan identified in Section 13 of this document.

The REPR shall support the scout sniper by providing precision long range fire against multiple limited exposure targets. The REPR represents a significant improvement in both lethality and precision to a scout sniper team (throughout this document, the "scout sniper team" refers generically to the traditional shooter/spotter pairing of scout snipers). Additionally, the REPR mitigates a critical capability gap (ability to rapidly engage multiple long range targets with precision) identified in Section 7.2 (Materiel Gaps) of the Scout Sniper ICD.

The REPR enhances the following attributes of the future joint force as defined by the Capstone Concept for Joint Operations (CCJO):

- (*Lethality*) The REPR will provide a scout sniper with the ability to precisely engage multiple targets faster and at longer range while using suppressor technology to accomplish this with more stealth;
- (*Precision*) The REPR will be capable of a precision of fire of 1 minute of angle (MOA) or less out to an objective range of 1000 meters, which is beyond the capabilities of current weapon systems;
- (*Faster*) Semi-automatic capability with improved recoil reduction allows for higher rates of accurate controlled fires over current weapon systems;
- (*Resilience and Endurance*) The enhanced lethality, precision, and speed of the REPR increases the survivability of scout sniper teams in combat, thus indirectly allowing for scout snipers to operate longer and more effectively;
- (*Adaptable*) The addition of the REPR to the scout sniper suite of weapons allows scout snipers to adjust to a wider range of mission sets; and
- (*Expeditionary*) The REPR will be carried, maintained, and operated by a single scout sniper in any operating environment with more reliability than current weapon systems.

1.1. Overview of the Capability Gap

Marine Corps and Special Operations Forces (SOF) scout snipers are expected to operate across the full range of military operations (ROMO) in any climate or terrain. In particular, the demands of operating in urban or restrictive environments place special emphasis on the need to not only conduct precision engagement, but to also rapidly engage multiple targets. The Marine Corps currently does not have a long term programmed material solution for this gap as the primary weapons issued to scout snipers are inadequate.

Regarding issued scout sniper weapons, the currently fielded M40A3 has proven to be a reliable weapon system for the Marine Corps and will still fill a role for scout snipers until it is replaced by a new long range sniper rifle. Unfortunately, the M40A3 is not well suited for combat in urban or restrictive terrain (this is discussed in more detail in Item 3 below). Particular shortfalls of the M40A3 include weight, length, rate of fire, capacity, and signature. To mitigate these gaps in the M40A3's capabilities, operational forces have been issued the Mk 11 as a part of limited, rapid fielding. The Mk 11 does provide an improved precision rapid engagement capability over the M40A3, but the Mk 11 was procured before Marine Corps' Scout Sniper capability requirements were fully identified. Further, as the Mk 11 was not procured as a program of record, thorough testing and evaluation of the system in a full and open competition was not completed before the system was fielded. Therefore, the Mk 11 was not evaluated against optimal capability requirements for rapidly engaging multiple targets with precision. Since that time, numerous and more capable, commercial off-the-shelf (COTS) systems have been produced by industry and all potential systems should be evaluated and tested for the best long term solution. In summary, the USMC currently does not have a viable weapon system to mitigate gaps associated with the ability to rapidly engage multiple targets with precision per the ICD as noted below.

(1) Currently, there is no programmed system to provide scout snipers a precision semi-automatic capability

Rationale: The Mk 11 performed this role on a limited basis with operational units as a means to urgently mitigate an operational gap. It was fielded to temporarily fill the OIF/OEF need to rapidly engage targets with precision. As a result of being procured as an urgent need and not as a program of record, the Mk 11 bypassed full testing and evaluation and was not considered a long term solution to the Scout Sniper capability requirement. Although this method succeeded in providing a limited capability to scout snipers currently engaged in combat operations, limited procurement and qualitative subject matter expert (SME) / Stakeholder input has demonstrated that the Mk 11 is not a satisfactory long term solution to this capability gap. Further, the original procurement objective of 180 systems, 18.2% of what would be required of a full operational capability of 989 systems, was insufficient to meet long-term needs even if the Mk 11 was deemed suitable for continued service. Currently, Mk 11s are no longer being procured and the originally fielded systems are reaching the end of their service life and need to be replaced. As this critical capability is at risk of shortfall, the Marine Corps needs to procure a system as a program of record or risk a significant degradation in scout sniper capabilities.

(2) Inability to rapidly engage multiple targets with precision

Rationale: Scout Snipers require the capability to rapidly engage multiple limited exposure targets at varying ranges. As a single-shot bolt action weapon, the currently issued M40A3 has neither the rate of fire nor the capacity to effectively engage the enemy in this situation without a substantial risk of allowing enemy to either escape or counter-attack. This risk is exacerbated in the urban environment where the target can often be identified and engaged only at close range, substantially increasing the risk that scout sniper teams could be overwhelmed by a larger enemy force with automatic weapons. Further, rapid engagement must be precise. Although the Mk 11 provides a comparable rate of fire to the REPR, the current capability does not meet broader system requirements. It is essential in missions such as counter-sniper to deliver precise, lethal effects on the enemy target upon the initial engagement. Also, in irregular warfare (IW) operations, collateral damage or the inadvertent wounding or killing of non-combatants could undermine an entire operation and is not an acceptable risk. Missions requiring this validated requirement include: engaging combatants dispersed throughout crowds of non-combatants; multiple enemy targets engaging advancing friendly forces (overwatch); ambushes and defending against ambushes; breaking contact by fire; engaging sentries on a raid site; hostage rescues; stopping suicide attackers; and disabling vehicles or other materiel that typically require multiple hits to effectively destroy or neutralize. This gap poses a critical risk across all (6) scout sniper capabilities identified in the Scout Sniper ICD and is the primary reason for this Capability Production Document (CPD).

(3) Limited ability to effectively conduct movement in an urban environment

Rationale: Scout snipers operating in an urban environment require maximum agility to negotiate the urban landscape, where quick sprints across danger zones, movement through constricted areas such as windows and doors, and vaulting over walls, fences, and other obstacles is commonplace. The length and weight of the M40A3 are prohibitive in this respect and could prove to be a fatal liability. The requirement to have a "defensive" weapon also dictates that scout snipers often carry a second "primary" weapon, which further decreases mobility. Also, for SOF, it may be necessary to operate semi-independently while still providing for security during sensitive low-visibility operations. The failure to have a smaller and lighter sniper rifle ultimately degrades all (6) scout sniper capabilities identified in the Scout Sniper ICD.

(4) Limited ability to operate without being identified as a "sniper"

As scout snipers move throughout areas of operation, it is necessary that they do not present a "sniper" signature as they will be particularly targeted by the enemy. Moreover, being identified as a "sniper" can have a negative effect on public perception in sensitive counter-insurgency type operations. This was a recurrent issue addressed during the gap analysis portion of the Scout Sniper ICD. Although, not specifically spelled out as a "critical" stand-alone gap, it was identified as a major contributing factor to the overall capability reduction of the ability for scout snipers to freely operate, especially in a daytime urban environment. As such, this shortfall can be partially mitigated by procurement of less identifiable, more concealable weapon systems. Specifically, the M40A3 with its scope and classic bolt action is universally recognized as a "sniper" rifle and is therefore likely to draw dangerous attention to the bearer of the weapon. Equally important is the need to engage and re-engage targets without compromising the location of the scout sniper team. Without modification, the M40A3 falls short

of this capability requirement as it does not use a flash or sound suppressor. This is of particular importance in close, urban combat where the flash and sound of a gunshot is more likely to draw an immediate and potentially lethal response against a compromised scout sniper team. The Mk 11 does present a more survivable "M-16" like signature, thus minimizing scout sniper identification, but still falls short of requirements as it does not allow for compact storage in a pack. The failure to have a concealable or less noticeable sniper rifle with the ability to stealthily engage targets ultimately degrades the ability to conduct all (6) scout sniper capabilities identified in the Scout Sniper ICD and puts scout snipers in particular danger in the urban fight.

1.2. CAPABILITY LINKAGE TO JOINT CAPABILITY AREAS

Enhancements to this materiel capability allow the Marine Corps' scout sniper capability to better support two Tier 1 Joint Capability Areas (JCA), Force Application and Battlespace Awareness.

Under *Force Application*, material enhancements in precision, lethality, and speed will directly improve the Scout Sniper contribution to the Tier 2 *Engagement* JCA. This improved ability spans all Tier 4 JCAs (types of targets) within the Tier 3 JCA of *Kinetic* engagement.

As a result of increased precision, lethality, and speed, scout snipers are more survivable and enduring on the battlefield which allows teams to better conduct their assigned missions including surveillance and reconnaissance. This indirectly supports the Tier 1 *Battlespace* JCA by enabling better Tier 2 *Intelligence, Surveillance, and Reconnaissance* through better battlefield collection.

Table 1.0 Key JCAs

Tier 1 JCA	Tier 2 JCA	Tier 3 JCA	Scout sniper capability(s)	REPR Impact
Force Application	Engagement	Kinetic	• The ability to effectively engage personnel with precision • The ability to conduct patrols • The ability to conduct counter-sniper operations • The ability to effectively engage hardened or materiel targets with precision	• More precise engagement with reduced risk of collateral damage • Improved lethality • Longer engagement range (critical for open environments like deserts and mountains) • Quicker engagement (critical in ambush and defensive scenarios) • Engagement of multiple short exposure targets (critical in urban environment)
Battlespace Awareness	Intel, Surveillance, and Recon	Collection	• The ability to effectively engage personnel with precision • The ability to conduct surveillance. • The ability to conduct patrols	• Greater persistence allows more time for surveillance • Lighter system allows for greater field endurance

1.3. OPERATIONAL EMPLOYMENT

Although REPR employment tactics, techniques, and procedures will ultimately be determined by each specific mission, the system is envisioned to be employed by both Marines and possibly SOF across the full ROMO in all mission environments. The REPR is a man-portable system that will not degrade a scout sniper's ability to move throughout the operational environment. The REPR is not a part of a family of systems (FoS) or system of systems (SoS), but will compliment other current organic scout sniper weapon systems such as the M40A3. The REPR will also compliment future planned scout sniper weapon systems such as the M40A3's planned replacement, the Long Range Sniper Rifle. The REPR can be used as either a stand alone sniper weapon or as an augment to the M40A3's slower bolt action system when multiple targets are identified and require rapid engagement. This REPR will also act as a defensive weapon for close quarters combat (CQC), removing the need to carry a secondary defensive weapon. Finally, as demonstrated in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF), the REPR will provide a critical capability to scout snipers especially in combat operations involving urban and restrictive terrain.

2. ANALYSIS SUMMARY

In 2006, as a response to requests for improved sniper capabilities from Marines conducting combat operations in Iraq, a Congressional plus up was provided for the USMC to develop and test a new long-range sniper rifle. Based on scout sniper studies conducted by the Marine Corps in 2002 and 2005, the Fires and Maneuver Integration Division, Capability Development Directorate (FMID, CDD) at Headquarters Marine Corps identified significant scout sniper capability gaps and a need to expand the scope of its data collection efforts. FMID then directed that a complete Capabilities Based Assessment (CBA) be conducted to produce a holistic Scout Sniper ICD. This ICD served as the analytic foundation for modernizing the Marine Corps' scout sniper capability by addressing current and future capability gaps.

The Scout Sniper CBA and resulting ICD determined that a materiel gap existed in the ability to rapidly engage multiple targets with precision. Follow-on analysis via literature review and stakeholder and SME interviews concluded that this gap could be mitigated via COTS non-developmental items (NDI) with an extremely low programmatic risk. Further, SOF, the USMC, and the U.S. Army all currently field some form of a precision semi-automatic weapon proving the operational need and concept in combat. Based on these activities, FMID decided to move directly forward to a Milestone C acquisition decision to solve this gap.

Once FMID made the decision to move to Milestone C, a data collection effort was undertaken to identify the critical elements required for the REPR to mitigate the identified gap and enhance the overall Marine Corps' Scout sniper capability. Interviews with testing and evaluation experts, procurement specialists, scout sniper SMEs, and review of data generated by AARs and currently fielded weapon systems were all reviewed to distill the requirements for the REPR. Independent confirmation of the requirements list was also generated by the validation of a Tri-Marine Expeditionary Force's (Tri-MEF) Scout Sniper Universal Urgent Need Statement (UUNS). This UUNS called for nearly the same requirements in a REPR type system to support scout sniper capability performance.

Currently, Marine Corps' scout snipers employ an M40A3 bolt action rifle. Scout sniper units deployed to OIF or OEF may also be issued the Mk 11 when available to augment the M40A3. The below table illustrates some of the major specifications on those systems compared to the REPR.

Table 2.0 System Specifications

Weapon System	M40A3	Mk 11	REPR
Weight Fully Loaded	18.5 lb	18.29 lb	11 pound threshold for a 16 inch barrel
Overall Length	44.25 in	44 in	40 in threshold for 16 in barrel
Barrel Length	24 in	24 in	16 in threshold with shorter/longer variants
Barrel Life	Estimated 10,000 rounds	Estimated 5,000 rounds	15,000 round threshold
Cost per system	$6,335	$10, 891	≤ $8,934
Caliber	7.62 x 51 mm NATO	7.62 x 51 mm NATO	Not specified
Action	Bolt-action	Semi-automatic gas operated	Semi-automatic system
Effective Range	1000 yd	800 meters	(Objective)1000 meters
Rate of Fire	5 rounds per minute	12-15 rounds per minute sustained; 45 rounds per minute semi-auto; 800 rounds per minute cyclic	12-15 rounds per minute sustained; 45 rounds per minute semi-auto; 800 rounds per minute cyclic
Capacity	5 round internal box magazine (10 with mod)	20 round detachable magazine	Detachable magazine (threshold of 20 rounds)
*Reliability	Extremely	Reliable	Extremely
Maintenance Echelon	Quantico / MOS 2112	None (must return to manufacturer)	Unit / MOS 2111

*Reliability is empirically based on a generalized qualitative assessment of the overall operational reliability of the given weapon system on the following scale: {Extremely Reliable, Reliable, Not Reliable}

The following general requirements and attributes will be incorporated into the REPR to provide the Marine Corps with a long-term, optimized platform to replace the Mk 11 (note that the M40A3 is planned to be replaced by the Long Range Sniper Rifle, which will mitigate identified scout sniper capability gaps in extreme long range precision and lethality that the REPR is neither intended to mitigate, nor technologically feasible of performing). Foremost, the REPR will provide the ability to rapidly engage multiple targets with precision out to an objective range of 1000 meters in accordance with the task standards and conditions identified during the Scout Sniper CBA. The weapon system shall do this in an operationally reliable package that reduces overall cost and weight per item, increases engagement range, reduces barrel length, and extends barrel life as compared to the Mk 11. The system must allow for rapid reloading and target acquisition, incorporate acoustic and flash suppression, incorporate M-16/M-4 ergonomics, fully support ambidextrous operation, use current compatible scout sniper optics and weapon accessories, allow for unit level maintenance, and be 100% interchangeable. The entire system will also include all necessary ancillary devices.

The need for a REPR is also supported by the Marine Expeditionary Rifle Squad (MERS) ICD in addition to various UNS relating to scout sniper activities, OEF and OIF After Action Reports, studies conducted by the Marine Corps Center for Lessons Learned (MCCLL), and Joint and U.S. Army studies. The following list of documents is not exhaustive, but represents some of the

primary references supporting the need for a REPR, especially as it relates to improved scout sniper capability:

- Scout Sniper ICD, Approved February 2008. Findings: Critical gaps exist in the ability of scout snipers to rapidly engage multiple targets with precision especially at long range. The gap becomes more critical in an urban environment. The ICD also establishes threshold and objective standards for task execution that can be directly translated to Key Performance Parameters (KPPs) and additional attributes. [Note: Will be included for reference]
- MERS ICD, Draft 2, 15 June 2007. Findings: Need for scout sniper capabilities are critical to successful infantry operations.
- MCCLL: Non-Kinetic / Counterinsurgency Operations, A Study in Command, March 2006. Findings: Scout sniper capabilities play a critical role in counterinsurgency (COIN) operations and require adequate / improved equipment to successfully support COIN.
- Joint Urban Ops Joint Integrating Concept (JIC), Version 1.0, 23 July 2007. Concept: Identifies the need for a scout sniper capability to be employed in an urban environment to support operations. Implies that rapid engagement of multiple targets and at various ranges will be commonplace.
- MCCLL: Scout Sniper Employment Lessons Learned Conference, 22 December 2006. Findings: Need for precision semi-automatic capability critical to successful scout sniper operations.
- MCCLL: Sniper / Counter Sniper Operations, Lessons and Observations, January-April 2007, OIF 05-07. Findings: Support need for precision semi-automatic rifle.
- MCCLL: Semi-Automatic Sniper Rifle, 1 March 2005. Findings: Specifically addresses need for employment of a semi-automatic sniper rifle with scout snipers.
- Mk 11 UNS for Semi-Automatic Sniper Rifle, Combat Tracking System # 05076UB, signed 15 August 2005. Findings: Initial attempt to fill the gap for a semi-automatic sniper rifle in on-going combat operations.
- Soldier Weapons Assessment Team After Action Report, July 2003. Findings: This assessment of small arms capabilities in OIF highlighted the need for a semi-automatic-capable sniper weapon for use in the urban environment.
- Small Arms Technology Assessment, Individual Infantryman's Weapon Vol. I., 1990. Findings: Establishes the maximum effects of kinetic effect (KE) rifles and evaluates additional effects of target acquisition and engagement techniques; recognizes that the majority of small arms targets are moving and only visible for a limited time, which supports the need for immediate shot follow-up capability.
- CPD for Semi-Automatic Sniper System, United States Army Integration Center, version 4, 26 April 2006. Findings: Validates need for semi-automatic sniper rifle and identifies key Army requirements and attributes.

- Men Make the City: Joint Urban Operations Observations and Insights from Afghanistan and Iraq, Rand report for Joint Forces Command, April 2004. Identifies that urban sniper capability was critical to provide high precision lethality with low possibility of collateral damage.

3. CONCEPT OF OPERATIONS SUMMARY

The REPR will be one of a suite of weapons (that include at least a precision long range sniper rifle and an anti-material weapon) in the scout sniper table of equipment used to support the 6 scout sniper capability areas identified in the Scout Sniper ICD. Specifically, the REPR will provide a single weapon system that bridges the gap between short range and long range precision engagement while still providing a reliable semi-automatic capability. For example, using the current issue adjustable power M8541 Scout Sniper Day Scope (SSDS) a scout sniper can set his scope for a wide field of view and rapidly engage targets at close ranges (less than 300 meters) as seen in the urban areas of Iraq or set the scope at a higher power and engage long range targets (up to 1000 meters) as seen in the mountains of Afghanistan. This system also allows for engagement of one or more targets in rapid succession allowing for engagement of enemy groups that previously may have been bypassed by a scout sniper team for fear of being overwhelmed. The REPR will be employed by both Marines and SOF across the full ROMO in all mission environments as a primary scout sniper weapon. The REPR is a man portable system that is not a part of a FoS or SoS, but will compliment other organic systems such as the M40A3 in a suite of scout sniper weapons that allow for the scout sniper to choose the right tool (weapon) for the mission. To this effect, the REPR will also compliment the M40A3's planned replacement, the Long Range Sniper Rifle[2]. The REPR can be used as either a stand alone sniper weapon or to augment the M40A3's slower bolt action system when multiple targets are identified and require rapid engagement. This weapon also will act as a defensive weapon for CQC, removing the need to carry a secondary defensive weapon. As demonstrated in OEF and OIF, the REPR will provide a required operational need especially in combat operations involving urban or restrictive terrain.

3.1. LINKAGE TO FUTURE MARINE CORPS' CONCEPTS

Although we live in an age of increasingly sophisticated and complex weapons systems there is still a high demand for the capabilities of highly trained and skilled scout snipers—personnel who deliver results that are disproportionate to the initial investment of their training. The Marine Corps' scout sniper is a highly specialized type of supporting arm that is a force multiplier to any unit being supported. Highly skilled in fieldcraft and marksmanship, the scout sniper delivers precision rifle fire day or night, collects detailed information for intelligence purposes, and directs/adjusts supporting arms. As a result, scout snipers provide a robust and flexible range of capabilities that can be employed by the supported commander in any assigned mission.

Specific to the Marine Corps, the scout sniper capability will support Marine Corps' concepts as outlined in the *Marine Corps Operating Concepts for a Changing Security Environment* (also known as the *Gray Book*). The *Gray Book* translates broad guidance and direction received from

[2] The Long Range Sniper Rifle, which will have a range capability of at least 1500 meters, is planned to mitigate separate gaps in extreme long range and lethality that the REPR is not intended to address.

the Commandant of the Marine Corps, relating how the Marine Corps will operate in the future into a draft family of Marine Corps-specific operating concepts. This document provides the conceptual and foundational underpinnings for the development and refinement of required capabilities, and describes how Marine Corps forces will be organized, based, trained and equipped to perform their critical missions.

The concepts contained inside the *Gray Book* encompass the vision that evolved out of the concepts of *Operational Maneuver from the Sea (OMFTS)* and *Expeditionary Maneuver Warfare (EMW)*. The concepts are enabled by the functional concepts of *Seabasing* and *Distributed Operations* and are further framed by the likely operational and threat environments predicted in the *Marine Corps Midrange Threat Estimate 2005-2015*. The Gray Book also illustrates how the Marine Corps contributes to the nation's defense and the Navy's Sea Shaping Concept by providing expeditionary forces trained and equipped for forward presence, security cooperation, counterterrorism, crisis response, forcible entry, prolonged operations and counterinsurgency. The scout sniper capability directly supports these missions by providing the force tasked with executing these missions an agile, flexible, and lethal package.

3.2. LINKAGE TO JOINT OPERATING CONCEPTS

The scout sniper capability can be linked across the ROMO primarily to the *Major Combat Operations (MCO), IW*, and *Military Support to Stabilization, Security, Transition, and Reconstruction Operation (SSTR) Joint Operation Concepts (JOCs)*. In these concepts, the scout sniper capability provides an expeditionary force capable of shaping the operational environment and then supporting decisive operations. Through the addition of the REPR, scout sniper lethality is increased and thus better able to support the concepts outlined in the above JOCs.

During MCOs, the scout sniper capability contributes directly to achieving both tactical and operational level objectives. By providing a rapidly projectable expeditionary force capable of employing integrated fires, long range communications, and stealth, the scout sniper capability is a key component in conducting distributed operations (DO). When leveraged properly, the capability provides a commander with a powerful force multiplier that can isolate, psychologically demoralize, and ultimately defeat enemy nodes of resistance wherever they are encountered on the battlefield.

By fielding the REPR, the Marine Corps' scout sniper capability is enhanced and directly makes a positive impact on MCOs. Specifically, the MCO JOC expresses a need for the capability to increase force survivability through the use of speed, lethality, and the ability to apply force from standoff distances (3.C.11). Although this statement is directed at the greater operational level concerning maneuver and is the rationale for force generation of expeditionary cornerstones such as the MV-22 Osprey and the EFV, this same concept still applies to scout snipers at the tactical level. Thus, the REPR with the ability to rapidly engage multiple targets with precision from a concealed location 1000 meters from an unaware enemy is a critical capability improvement in the speed, lethality, and standoff range of scout sniper capability. The MCO JOC also articulates the need for a capability to "empower commanders to conduct flexible and responsive operations at every useful level, to include… maneuver and precision engagement operations…" (4.C.6) The scout sniper capability embodies this by providing a force that is rapidly available, easily projected, tailored to support a wide range of missions, able to maneuver undetected, and able to

precisely engage targets with speed and lethality. The REPR directly impacts the ability to precisely engage targets via its enhanced firepower and indirectly enables the greater capability through enhanced survivability. Finally, the MCO JOC requires that the DOD "field capabilities to maintain adaptive force dominance" and maintain "service collective, unit competencies." (3.B.5) The REPR allows scout snipers to adapt to more operational environments while still maintaining force dominance.

During MCOs the scout sniper may tactically conduct more missions, but it is in IW and SSTR operations where the full value of the scout sniper's precision is witnessed. In both IW and SSTR, precision takes on a greater role because of the need to engage enemy forces while minimizing collateral damage (IW Task 0.7-026C, conduct lethal strike). This is necessary to prevent alienation of the local populace while attempting to provide security for them. IW task 0.7-023C (control significant land areas) addresses this. Further, the order of magnitude in damage potentially caused to the overall operational and even strategic success of the campaign by collateral damage is substantially higher than during MCOs as IW and SSTR add an inherently political nature to the battle. Thus, increasing the precision of the scout sniper capability while improving lethality mutually improves scout sniper capabilities and the ability to conduct IW or SSTR operations. In summary, although the scout sniper capability has wide applicability across multiple JOCs, its greatest resonance is with MCOs, IW, and SSTR.

4. THREAT SUMMARY

4.1. THREATS TO BE COUNTERED

Sniper rifles continue to evolve with increases in both range and lethality at a given distance due to: caliber increases, improvements in optics, other supporting equipment (such as range finders and mini-weather stations enabling better estimation of conditions and allowing for better shot placement), and ammunition improvements for sniping or precision use in all calibers. Within the next ten years, anti-materiel rifles will become increasingly common. Within urban areas, maneuver space and potential areas for staging an assault on enemy-held fortifications and facilities will be limited. The number of armies using body armor worldwide is steadily increasing and will continue to increase over the next ten years. Body armor that is viable against current ball 7.62mm North Atlantic Treaty Organization (NATO) rifle ammunition is commercially available from various sources. Unconventional forces may also use body armor to reduce the effectiveness of US weapons as the number of countries producing and proliferating body armor increases. Sniper and shot detection systems are available from multiple commercial sources and are being heavily marketed to the US and other countries. These are advertised for both force protection and anti-crime use but are readily adapted to military combat operations as is the case in Iraq.

4.2. PROJECTED THREAT ENVIRONMENT

It is anticipated that urbanization will continue on a worldwide scale with an increased probability of Marines being deployed to fight in urban terrain. There will also be a continued need to engage enemy forces in more open environments, such as mountains and deserts. Engagements will also occur in various natural areas such as jungles, forests, plains and savannah. Dense urban areas often have large open areas such as industrial areas, parks, cemeteries, transportation hubs (rail, air or port facilities) that may present opportunities to

engage at great distances. Engagement distance can be expected to vary greatly in these environments. The capability to engage targets behind cover in these varying environs will require enhanced accuracy and penetration capability or the ability to select rounds able to penetrate cover and reach targets. Recent operational experience bears this out, as hostile forces used hardened vehicles and improved positions to engage US and allied forces during combat operations. The second battle of Fallujah and Operation Anaconda, illustrate the use of hardened positions to engage US and allied forces. The enemy uses the lessons learned from these events and other events such as Chechnya to develop updated tactics, techniques, and procedures (TTP) to use as part of their defensive and offensive tactics.

Snipers employed in increasing complex terrain and the increasing use of civilian "human shields" places snipers in situations where compromise is likely due to the cultural setting, and the enemies "home field advantage".

4.3. Range of Threats

This availability of a wide variety of weapons to state and non-state actors presents a threat to snipers beyond sniper-on-sniper capability. Weapons such as rocket-propelled grenades (RPGs), antitank guided missiles (ATGMs), heavy machine guns, antiaircraft guns, medium cannon and antitank guns all present a threat to snipers as they can be used to target compromised or suspected team locations with volume of fire techniques or precision fires from near to far ranges. An example of this was the use of ATGMs as portable artillery by Hizballah against Israeli forces sheltering in buildings during the summer of 2006 in Lebanon. The threats to be countered by USMC Scout/Snipers are hostile snipers and armed forces operating in a wide variety of environments. The ability to engage fleeting and often multiple targets in these environs require the capability of rapid engagement of multiple targets. Increasingly the potential threat operates as small teams even for sniping operations and means multiple targets are usually present during any engagement. The threat remains highly adaptive and is armed with increasingly more capable weapons systems. US snipers are a high payoff target for opposition forces, and the adversary's ability to overwhelm or overrun a compromised scout sniper team operating in a remote environment, is often due to the ability to overwhelm the team with sheer volume of fire. Thus, the ability to provide better rapid engagement across the entire range spectrum is critical. Increasingly terrorist groups are cross training as seen by migration of TTPs from one area to another by related and unrelated groups

4.4. Validated Threat References

This analysis was made using the:

- Volume VI Land Warfare Capstone Threat Assessment: The Future Operational Threat Environment (NGIC -1121-0011-07, October 2007);
- Marine Corps Midrange Threat Estimate: 2005-2015, published by the Marine Corps Intelligence Agency (MCIA) in August 2005 (MCIA-1586-001-05); and
- and "The Urban Century", MCIA-1586-003-97, November 1997. A classified annex is also being prepared for this product.

5. PROGRAM SUMMARY

The acquisition and fielding of a precision semi-automatic rifle is the result of the Scout Sniper ICD. The study identified an operational gap and recommended a materiel solution in the form of a semi-automatic weapon capable of precision engagement at long range. Currently, mature technology allows for the Marine Corps to test and field a COTS NDI semi-automatic weapon system by the most expedient and cost effective means possible to meet required needs while minimizing developmental activity. The ICD was validated by the Marine Requirements Oversight Council (MROC) in March 2008.

The requirements set forth in this CPD ensure that operators will receive the optimal system to provide a lasting solution. Follow-on action will require a full and open testing and evaluation cycle of mature COTS items that meet the performance parameters set-forth in this study. COTS items for procurement will allow for an aggressive selection and fielding timeline and are the preferred solution. However, it maybe necessary to use a spiral development plan to support meeting all objective requirements with one system or to improve the system in response to likely threats and advances in technology. Finally, to support the REPR's procurement timeline and to provide a baseline for testing and evaluation of potential weapon systems, all initial weapon systems submitted for contract competition shall come with a manufacturer supplied suppressor[3] and must use 7.62 x 51 mm M118 LR ammunition, the current M8541 SSDS, and be capable of mounting currently fielded night optics and aiming devices. This does not exclude the possibility for the selected system to incorporate new calibers, optics, and technology to obtain objective standards as a part of planned spiral development.

A spiral development approach would lend itself well to procuring COTS items while simultaneously pursuing more advanced ammunition or calibers in future modular variants and incorporating improved parts such as lighter receivers and barrels with longer service lives.

Acquisition is based on a full and open competition for viable candidate systems with an emphasis on leveraging existing and readily available COTS/NDIs to the maximum extent possible. Some items that are currently components of the M40A3 and Mk11, such as the M8541 SSDS and the Scout Sniper Medium Range Night Sight (SSMRNS), will be utilized to maintain a minimum logistical and supply footprint while maximizing interoperability.

Solicitation for a full and open competition will be issued on FedBizOpps and closed at a yet to be determined time. At least 3 complete sets of candidate bid samples will then be due at Marine Corps Systems Command in Quantico, VA for technical evaluation and testing. Further, corresponding technical/cost proposals shall be submitted with the candidate sample sets. User assessments will then be conducted by personnel from Marine Corps Systems Command in conjunction with the Marine Corps Operational Test and Evaluation Activity (MCOTEA). Input regarding testing, evaluation, and procurement should also come from Marine Special Operations Command (MARSOC). If this system is deemed of interest to all of Special Operations Command (SOCOM), additional sets of weapons will be necessary to support SOF specific testing requirements.

[3] Although the REPR will be tested and evaluated with the manufacturer supplied suppressor, the REPR may be procured independent of the supplied suppressor to allow for the best system item(s) to be procured.

A source selection decision and contract award will be made for the overall "best-value" weapon based on its successful completion of technical, pre-production qualification testing (PPQT) and operational testing in accordance with MCOTEA guidelines and the performance parameters established in this document. The contract will be awarded for the delivery of at least (989) systems. The systems will be fielded in accordance with the fielding plan listed in Sections 11 and 12 of this document. Government manuals and New Equipment Training will be developed based on vendor commercial manuals and input.

Limited Rate Initial Production (LRIP) of systems will commence shortly after operational testing is complete and will be based on the operational test and evaluation needs of the Marine Corps and the manufacturer. This will be to establish and verify production and packaging procedures as well as fulfill the requirements of the initial operating capability (IOC). A Type Classification-STD and Milestone "C" decision of the system will be pursued to proceed directly into full rate production.

Initial spare parts for logistic support will be obtained under a separate contract through FedBizOpps. As part of the life cycle support of the system, a certain degree of organizational maintenance support is anticipated with parts being acquired through a Direct Vendor Delivery (DVD) concept. Major maintenance and repairs to be performed on the REPR by the weapon producer will be contracted through a separate Contractor Logistics Support (CLS) action. The use of a "just-in-time" supportability concept will eliminate the Government costs associated with the up-front acquisition, stockpiling and management of spare parts for a relatively low-density system such as the REPR. This concept also supports REPR modernization through spares initiative by having the latest replacement parts available direct from the manufacturer and avoids wasting Government funding with the stockpiling and disposal of obsolete parts.

6. SYSTEM CAPABILITIES REQUIRED FOR CURRENT INCREMENT

The capabilities described below will apply to the REPR. Each requirement is a threshold (T), the minimum acceptable value necessary to satisfy the need. If no objective (O) is provided, the threshold equals the objective.

(1) KPP. The *Survivability* KPP does not apply to this system.

(2) KPP. The *Force Protection* KPP does not apply to this system.

(3) KPP. *Materiel Availability*: As an overall "up" average of all systems is irrelevant at the organizational level, a requirement of 87.5%[4] of the systems fielded to a specific unit (regardless of the total number) are operational at any given time will be the unit of measure (Threshold). 99% (Objective).

Rationale: *For a fully operational capability, the REPR must be fully fielded in the hands of trained operators and be reliable in the field at all times. At the scout sniper platoon level, only 8 systems per platoon are planned for issue so that if even one system is unavailable, it represents a significant reduction in platoon capability. Thus, operational availability is addressed in this KPP.*

[4] 87.5% is derived from 7 of 8 weapons in "up" status. This is based on the current T/E fielding plan of (8) weapons to a scout sniper platoon.

(a) KSA. *Material Reliability*: The REPR with magazine, M8541 Scout Sniper Day Scope, and a manufacturer supplied suppressor[5] shall have a Mean Rounds Between Essential Function Failure (MRBEFF) of 15,000 rounds for Class III malfunctions, 5,000 rounds for Class II malfunctions, and 1,000 rounds for Class I malfunctions (Threshold). The REPR will have a MRBEFF of 30,000 rounds for Class III malfunctions, 10,000 rounds for Class II malfunctions, and 2,000 rounds for Class I malfunctions (Objective). All tests will be conducted with 7.62 x 51 mm M118 long range ammunition.

The REPR, while following the appropriate maintenance schedule shall have a minimum Class I, II, and III Mean Round Between Failures (MRBEFF) as listed in the below table.

Failure Class	MRBEFF
I (MRBF)	1,000 (T) / 2,000 (O)
II (MRBF)	5000 (T) / 10000 (O)
III (MRBF)*	15,000 (T) / 30,000 (O)

* No broken parts causing weapon to cease function.

Failure Classification:

Class I: A failure that may be immediately clearable/correctable by the operator within 10 seconds or less while following prescribed immediate action procedures.

Class II: A failure that may be operator clearable/correctable requiring more than 10 seconds but not more than 10 minutes. Only the equipment and tools issued with the weapon may be used to clear the weapon.

Class III: A failure of a severe nature. The failure; (1) is operator correctable but requires more than 10 minutes, (2) operator cannot correct and requires assistance (no time limit), (3) requires higher level of maintenance, or authorized operator correction cannot be accomplished because of unavailability of necessary tools, equipment or parts.

Rationale: *System reliability is a critical component of any system to be fielded in a combat environment where it will be exposed to harsh conditions and heavy use. As a primary combat weapon, lives are literally at stake if the REPR fails to reliably perform. The threshold values for Class I and II malfunctions are estimated based on industry improvements in reliability over the currently held standard for the primary infantry fire team weapon, the M16A4, which has a combined threshold of 900 MRBEFF for Class I and II malfunctions. The threshold value for Class III failures reflect industry's current capability to provide a reliable weapon system and are tied to weapon barrel and service life. The objective threshold values are based on industry's advertised capability to provide a reliable system, which has not yet been proven through government testing and evaluation.*

[5] REPR reliability will be tested using manufacturer supplied suppressor for 80% of rounds fired during testing.

(b) KSA. *Unit and O&M Cost*[6]: The unit cost[7] of the REPR shall not exceed $8,934 per system. (Threshold). $5,934 per system. (Objective). Unit cost includes the weapon, optic, suppressor, sling, cleaning kit, (6) magazine pouches, (6) magazines, storage case, and operator maintenance manual(s). The REPR will employ cost reducing technology and engineering in the design, production, operation, and maintenance to enable an effective and reliable system at minimal cost to the USMC. To minimize total lifecycle cost, the system procured should introduce minimal changes to existing training and certification programs, use existing ammunition[8], and introduce minimal new logistics requirements (parts, peripherals, spares) to meet initial cost and time constraints. However, this should not rule out enhancements through spiral development.

Operations and maintenance cost is projected to be $4,968,661 over the lifecycle of the weapon system[9] (Objective). $6,853,566 (Threshold). The main cost drivers are sustainment overhauls to replace the upper assemblies.

Rationale: *It is in the best interests of the Marine Corps to procure a weapon demonstrating the overall "best value." Although the Marine Corps should identify cost as a significant driver in the procurement evaluation, this should not be the single most important issue. Rather, overall quality, reliability, and ability to meet the identified KPPs should drive final decisions. Scout snipers require specialized equipment to conduct their missions effectively so maximum flexibility should be given to obtaining the best system.*

(4) KPP. *Compatibility:* REPR shall not degrade or interfere with the ability to employ or operate with equipment currently fielded and shall use existing rifle combat optics and weapon accessories. The REPR shall use of 7.62 x 51 mm M118 long range ammunition in the initially fielded system. This does not exclude the possibility for the selected system to incorporate new calibers, optics, and technology to obtain objective standards as a part of planned spiral development that addresses needed capability enhancements due to advances in technology and threats. (Threshold = Objective)

Rationale: *This system must allow for use while wearing protective equipment such as a helmet, body armor, gloves (including cold weather), field protective mask (including full MOPP IV over garments), and eye protection. Further, it should be compatible for storage and transport in all standard ground, air, and sea platforms. All items must fully integrate with what the operator is using when operating in combat. Use of current ancillary equipment, ammunition, and other fielded items should be used whenever appropriate to reduce costs while not creating additional logistical stress.*

[6] All dollars are base year 2008.
[7] The three major drivers used to determine threshold and objective unit costs were the cost of the currently fielded Scout Sniper Day Scope, the cost of the suppressor currently issued for use with the Mk 11, and the average cost of COTS weapon systems that were advertised by the manufacturers to provide a comparable capability to the REPR.
[8] 7.62 x 51 mm M118 LR
[9] Weapon lifecycle is projected to be 10 years

(5) KPP. The *Net Ready* KPP does not apply to this system since it has no network capable equipment and does not interface with any joint critical operational activities.

(6) KPP. *Rifle/Action*: The REPR shall have a detachable magazine-fed, semi-automatic operating system that incorporates technology that maximizes reliability, precision, and service life. The weapon system shall allow for fully ambidextrous operation. (Threshold = Objective)

Rationale: *The REPR provides the operational capability of a sniping and fighting system and addresses the shortcomings in rate of fire of the existing M40A3 sniper rifle. A semi-automatic capability provides for a sustained rate of fire that exceeds that of the M40A3 and allows the sniper to "stay on the scope/stay on the gun" to rapidly engage multiple targets. The semi-automatic capability also allows for rapid, multiple follow-on shots against moving/fleeting personnel and light skinned vehicles. Inherent to this will be the use of technology that maximizes the reliability, precision, and service life of the system throughout the design and manufacture of the entire weapon system. Finally, the ability for left and right handed shooters to operate the weapon system is critical for the safe and effective universal application of the weapon system.*

(7) KPP. *Precision*: The REPR[10] shall provide a precision of fire ≤ 1.0 Minute of Angle (MOA) out to 800 meters (Threshold) 1000 meters (Objective) when fired from an accuracy fixture in nominal conditions unsuppressed. Precision is defined as the expression of how well projectile impacts grouped (using five shots as minimum standard for a "group") based on the measure of the distance each impact is from the other (no matter how close or far from a target center) at a given distance. The weapon shall still maintain a precision of fire of ≤ 1.0 MOA when fired at the sustained rate.

Rationale: *The purpose of acquiring a new sniper system is to provide the capability to rapidly engage and eliminate personnel targets at 800-1000 meters with precision. This is necessary to meet both operational demands and to compliment the 1000 "yard" range of the M40A3. In Irregular Warfare type scenarios this is especially important because precision engagement and quick kills against multiple targets are critical as collateral damage from an errant shot (friendly or enemy) can pose an unacceptable operational risk. Mitigating operational risk due to degraded precision is the primary factor why this weapon must continue to perform to standard even when firing at the sustained rate.[11] After action reviews (AARs) regarding OIF and OEF reinforce the 300 – 1000 meter distances (although frequently closer in urban terrain) as well as the array of targets on a multi-shot, multi-kill battlefield. Although REPR cold barrel, first shot kills will be possible (weapon, ammo selection, range, wind, environment, target disposition and*

[10] To support the REPR's procurement timeline and to provide a baseline for testing and evaluation of potential weapon systems, all initial weapon systems submitted for contract competition must use 7.62 x 51 mm M118 LR ammunition, the current M8541 Scout Sniper Day Scope (SSDS), and be capable of mounting currently fielded night optics and aiming devices. This does not exclude the possibility for the selected system to incorporate new calibers, optics, and other technological innovations to meet or exceed objective standards as a part of planned spiral development.

[11] See Rate of Fire KSA

shooter skill influenced), personnel targets are engaged/re-engaged until eliminated. Thus, the more accurately shots can be placed on target, the more likely it is to achieve first round kills. Still, sniper teams can plan/expect to expend 1 to 2 rounds of ammunition per target engagement especially when attacking multiple fleeting targets. Input from the Marine Corps Scout Sniper ICD, supported by the Tri-MEF UUNS, supports this requirement as an operational need. Additionally, the requirement is supported by input the Marine Corps Center for Lessons Learned and the Marine Corps Scout Sniper School.

(8) KPP. Rate of Fire: The REPR shall be capable of a semi-automatic sustained rate of fire[12] of (20) rounds per minute while maintaining a precision of fire of ≤ 1.0 MOA. (Threshold = Objective).

Rationale: *The need to rapidly engage targets with precision has been identified in numerous OEF and OIF AARs especially in the urban or restrictive environment where multiple targets offer only a very limited time to engage and may suddenly appear at close range. Further, rapid target destruction in both offensive and defensive scenarios allows for rapid sniper team displacement and disengagement thus enhancing sniper team survivability. The sustained rate of fire is set at 20 rounds per minute based on capability need, industry's current standards, and the current capability of the primary infantry fire team weapon, the M16A4, which has a 15-20 rounds per minute sustained rate of fire. Finally, the Marine Corps Scout Sniper ICD validated this requirement as a critical component of capability generation for scout snipers.*

Table 6.1 Key Performance Parameter

Note: The Scout Sniper Capability supports the following Joint Operating Concepts: Major Combat Operations; Military Support to Stability, Security, Transition, and Reconstruction; IW; and Homeland Defense

CCJO Characteristics	Key Performance Parameter	Production Threshold	Production Objective
N/A	KPP 1 Survivability	N/A	N/A
N/A	KPP 2 Force Protection	N/A	N/A
Enduring	KPP 3 Materiel Availability	87.5% of weapon systems shall be in the "up" status at the unit level discounting routine operator maintenance and MOS 2111 safety and maintenance inspections. (T)	99% of weapon systems shall be in the "up" status at the unit level discounting routine operator maintenance and MOS 2111 safety and maintenance inspections. (O)

[12] Sustained rate of fire is defined as the rate of fire that can be maintained indefinitely without a decrease in performance or weapon malfunction / failure.

CCJO Characteristics	Key Performance Parameter	Production Threshold	Production Objective
Interoperable, Adaptable, Tailorable	KPP 4 Compatibility	REPR shall not degrade or interfere with the ability to employ or operate with equipment currently fielded and shall use existing rifle combat optics and weapon accessories. The REPR shall use of 7.62 x 51 mm M118 long range ammunition in the initially fielded system. This does not exclude the possibility for the selected system to incorporate new calibers, optics, and technology to obtain objective standards as a part of planned spiral development that addresses needed capability enhancements due to advances in technology and threats. (T = O)	(T = O)
N/A	KPP 5 Net Ready	N/A	N/A
Resilient, Lethal, Interoperable	KPP 6 Rifle Action	The REPR shall have a detachable magazine-fed, semi-automatic operating system that incorporates technology that maximizes reliability, precision, and service life. The weapon system shall allow for fully ambidextrous operation with 100% interchangeable parts. (T = O)	(T = O)
Precise, Lethal	KPP 7 Precision	The REPR shall provide a precision of fire ≤ 1 MOA at 800 meters using a 16 inch barrel when fired from an accuracy fixture in nominal conditions unsuppressed (see footnote #2). The weapon shall still maintain a precision of fire of ≤ 1.0 MOA when fired at the sustained rate. (T)	The REPR shall provide a precision of fire ≤ 1 MOA at 1000 meters using a 16 inch barrel when fired from an accuracy fixture in nominal conditions unsuppressed (see footnote #2). The weapon shall still maintain a precision of fire of ≤ 1.0 MOA when fired at the sustained rate. (O)
Precise, Lethal	KPP 8 Rate of Fire	The REPR shall be capable of a semi-automatic sustained rate of fire of (20) rounds per minute while maintaining a precision of fire of ≤ 1.0 MOA Greater than the M40A3 (see footnote #4). (T = O)	(T = O)

804

805 **Table 6.2 Key System Attributes**

CCJO characteristics	Key System Attributes	Production Threshold	Production Objective
Resilient, Lethal, Enduring	KSA 1 Reliability	The REPR with magazine, M8541 Scout Sniper Day Scope, and a manufacturer supplied suppressor shall have a Mean Rounds Between Essential Function Failure (MRBEFF) of 15,000 rounds for Class III malfunctions (i.e. for non-operator clearable/correctable malfunctions which cause the loss of essential functionality), 5,000 rounds for Class II malfunctions (i.e. for operator clearable/correctable malfunctions that take more than 10 seconds, but less than 10 minutes to correct), and 1,000 rounds for Class I malfunctions (i.e. for operator correctable/clearable malfunctions that are immediately correctable within 10 seconds or less). All tests will be conducted with 7.62 x 51 mm M118 long range ammunition. (T)	The REPR with magazine, M8541 Scout Sniper Day Scope, and a manufacturer supplied suppressor shall have a MRBEFF of 30,000 rounds for Class III malfunctions, 10,000 rounds for Class II malfunctions, and 2,000 rounds for Class I malfunctions. All tests will be conducted with 7.62 x 51 mm M118 long range ammunition. (O)
Adaptable/Tailorable, Enduring	KSA 2 Unit and O&M Cost	The unit cost of the REPR shall be ≤ $8,934 per system. Unit cost includes the weapon, optic, suppressor, sling, cleaning kit, (6) magazine pouches, (6) magazines, storage case, and operator maintenance manual(s). Operations and maintenance cost is projected to be $6,853,566 over the lifecycle of the weapon system. (T)	The unit cost of the REPR shall be ≤ $5,934 per system. Unit cost includes the weapon, optic, suppressor, sling, cleaning kit, (6) magazine pouches, (6) magazines, storage case, and operator maintenance manual(s). Operations and maintenance cost is projected to be $4,968, 661 over the lifecycle of the weapon system. (O)

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807 **6.1. ADDITIONAL PERFORMANCE ATTRIBUTES**

808 In order to provide the capabilities outlined in paragraph one of this document, the REPR will
809 have the following additional performance attributes:

810 **Table III: Additional Performance Attributes**

Attribute	Production Threshold	Production Objective
Durable Protective Materials (coatings)	The REPR with suppressor and magazines shall be protected with durable, protective, and corrosion resistant coatings. The coatings should be abrasion, impact, wear, and chemical resistant. The coatings should minimize the attraction of dust and contamination and provide protection equal to or greater than phosphate coated and chrome coated steels. (T)	The REPR shall be constructed of and coated with highly corrosion resistant materials. Critical working areas of wear essential to the function and longevity of the system will be coated with high temperature resistant, lubricating, durable coatings to improve reliability, durability, and maintainability through the life cycle of the system. The REPR shall incorporate self-lubricating coatings and materials that do not require grease or

Attribute	Production Threshold	Production Objective
		lubricants for the operating components. These coatings shall minimize the attraction of dust and contamination. The REPR shall be capable of firing 100 rounds of ammunition without stoppages after standard Salt Fog Test exposure of 96 hours. During Salt Fog Test exposure, one magazine shall be locked in the weapon and the other magazines shall be subjected to the Salt Fog Test environment during the entire exposure test period. The coatings shall withstand NBC decontamination procedures without the need for removal of any components. (O)
Cleaning / Lubricating Materials	The REPR shall be capable of being cleaned and lubricated with all US government standard weapon cleaners and lubricants without adverse effects to the weapon (RBC, LAW, LSA, and CLP). (T)	The REPR shall be capable of being cleaned and lubricated with all US government standard weapon cleaners and lubricants without adverse effects to the weapon (RBC, LAW, LSA, and CLP) although the protective coatings for the operating components should not require the application of grease or lubricants. (O)
Color	All external and visible REPR surfaces including magazines and suppressor shall meet Fed Color Standard 30118 and have a non-reflective coating that is paintable, consistent with current camouflage colors and patterns, and minimizes infrared signatures. (T)	All external and visible REPR surfaces including magazines and suppressor shall meet Fed Color Standard 30118 and have a non-reflective coating in coyote brown that is paintable and minimizes infrared signatures. (O)
System Ruggedness	The REPR shall operate effectively and reliably in all Marine Corps and SOF operational climates and geographical areas that include sand, swamp, tundra, grasslands, forest, tropical, urban areas, maritime, riverine, and mountains. The REPR with optic, magazine inserted, and suppressor attached shall possess sufficient ruggedness to withstand military use to include shipboard operations, helicopter borne operations, and amphibious landings without degrading the operational and safety performance of the system. The system shall withstand the shock of being dropped by the user or of being dropped from a stationary vehicle at 1.7 meters onto a concrete surface, the shock from a user performing individual movement techniques in combat, and the vibrations of being transported in standard military aircraft and ground vehicles. The REPR shall perform reliably in High Temperature - 160° F, Low Temperature - minus 25° F, Salt Fog, Sand and Dust, Icing/Freezing Rain, and after immersion in mud. The REPR shall also operate at altitudes up to 15,000 feet. (T = O).	(T = O).
Weight	Weight with scope, sling, bipod, and magazine loaded with 20 rounds shall be 11 pounds or less. (T)	Weight with scope, sling, bipod, and magazine loaded with 20 rounds shall be 8 pounds or less. (O)
Length	The REPR without suppressor shall measure less than 40 inches in length with the buttstock extended to a Length of Pull of 13.5 inches (or	The REPR without suppressor shall measure less than 36 inches in length with the buttstock extended to a Length of Pull of 13.5 inches (or

Attribute	Production Threshold	Production Objective
	the closest adjustable position greater than 13.5 inches). Length of pull is defined as the distance between the front of the trigger and the rear of the buttstock. (T)	the closest adjustable position greater than 13.5 inches). Length of pull is defined as the distance between the front of the trigger and the rear of the buttstock. (O)
Service Life	≥30,000 rounds with barrel changes. Weapon system shall maintain precision of 1 MOA or less. (T = O)	(T = O)
Barrel Life	≥15,000 rounds. Barrel must maintain precision of 1 MOA or less. (T)	≥ 30,000 rounds. Barrel must maintain precision of 1 MOA or less. (O)
Barrel Replacement	The REPR barrel shall be capable of removal and replacement at the intermediate level by an MOS 2112 armorer (certified to work on precision weapons). (T)	The REPR barrel shall be capable of removal and replacement at the organizational level by an MOS 2111 armorer. (O)
Assembly / Disassembly	The REPR shall be capable of breakdown to its primary operating components by the operator in 1 minute or less without tools for normal cleaning and care. The weapon parts shall be designed so that incorrect assembly is highly improbable. The REPR shall be capable of re-assembly from breakdown in 1 minute or less with no change in the weapon's zero and without tools. (T)	The REPR shall be capable of breakdown to its primary operating components by the operator in 30 seconds or less without tools for normal cleaning and care. The weapon parts shall be designed so that incorrect assembly is highly improbable. The REPR shall be capable of re-assembly from breakdown in 30 seconds or less with no change in the weapon's zero and without tools. (O)
Trigger Pull	Pull weight of no less than 4 lbs. (T)	The REPR's trigger pull shall be operator adjustable within the threshold requirement. (O)
Recoil	The REPR recoil energy should not exceed 18 foot pounds. (T)	The REPR recoil energy shall not exceed 12 foot pounds. (O)
Rapid Fire Target Acquisition / Recoil Management	A trained sniper firing the REPR system shall engage an E-Type silhouette target (modified for MCMP Table II showing head, chest, and pelvic girdle scoring areas) with 10 rounds in 1 minute at 300 yards. All shots must be placed inside the head/chest scoring areas. (T)	A trained sniper firing the REPR system shall engage an E-Type silhouette target (modified for MCMP Table II showing head, chest, and pelvic girdle scoring areas) with 20 rounds in 1 minute at 300 yards. All shots must be placed inside the head/chest scoring areas. (O)
Hit Probability	A fully trained and current sniper firing the REPR shall achieve 8 out of 10 hits (80% probability) within 1.0 MOA at 800 yards firing 10 rounds in 10 minutes or less on a "NRA Bulls-eye" target under nominal conditions. Nominal conditions are defined as 70 degrees F +/- 10 degrees and unlimited visibility during daylight. (T)	A fully trained and current sniper firing the REPR shall achieve 8 out of 10 hits (80% probability) within 1.0 MOA at 1000 yards firing 10 rounds in 10 minutes or less on a "NRA Bulls-eye" target under nominal conditions. Nominal conditions are defined as 70 degrees F +/- 10 degrees and unlimited visibility during daylight. (O)
Multiple Target Engagement	The REPR will be capable of engaging 3 E-Type Silhouette targets (modified for MCMP Table II showing head, chest, and pelvic girdle scoring areas) placed 10 feet apart with one shot a piece in the head or chest scoring area at 500 meters in 15 seconds or less. (T)	The REPR will be capable of engaging 3 E-Type Silhouette targets (modified for MCMP Table II showing head, chest, and pelvic girdle scoring areas) placed 10 feet apart with one shot a piece in the head or chest scoring area at 800 meters in 15 seconds or less. (O)
Safety	The REPR shall have a safety mechanism that prevents the weapon from being fired when the trigger is depressed with the safety in the "SAFE" position. The 5th to 95th percentile of shooters shall be able to manipulate the safety using the shooting hand and without changing the firing grip. The safety shall be easy to operate under all environmental conditions and operator dress, and shall be capable of ready status verification (safe/fire) by both sight and touch. The REPR safety will have a tactile signature	The REPR shall have a safety mechanism that prevents the weapon from being fired when the trigger is depressed with the safety in the "SAFE" position. The 5th to 95th percentile of shooters shall be able to manipulate the safety using the shooting hand and without changing the firing grip. The safety shall be easy to operate under all environmental conditions and operator dress, and shall be capable of ready status verification (safe/fire) by both sight and touch. The REPR shall allow for a round to be carried in the chamber without applied stored

Attribute	Production Threshold	Production Objective
	to the operator with minimal audible signature. (T)	energy. The REPR safety shall have zero audible signature. (O)
Suppressor	The REPR shall have a precision fire, high decibel reduction, quick disconnect sound suppressor that will reduce audible signal no less than 28db. Accuracy should not be affected by a deviation greater than or equal to a 2 MOA shift from weapon's original zero with a repeatability threshold of 1 MOA. The sound/flash suppressor shall add no more than 10 inches to the length of the REPR and have a service life equal to or greater than the life of the barrel. The suppressor shall weigh no more than 38 ounces and be capable of being installed and removed by the operator in the field with no tools. The attached sound suppressor (when hot) shall have minimal degradation of the operator field of view with primary optic and other visual augmentation systems due to heat mirage and come with a mirage wrap if necessary. The suppressor shall not cause more than a 20% reduction in barrel life. The suppressor shall be able to be attached and detached without tools. (T)	The REPR shall have a precision fire, high decibel reduction, quick disconnect sound suppressor that will reduce audible signal no less than 35db. Accuracy should not be affected by a deviation greater than or equal to a 1 MOA shift from weapon's original zero with a repeatability threshold of 0 MOA. The sound/flash suppressor shall add no more than 8.5 inches to the length of the REPR and have a service life equal to or greater than the life of the barrel. The suppressor shall weigh no more than 24 ounces and be capable of being installed and removed by the operator in the field with no tools. The attached sound suppressor (when hot) shall have minimal degradation of the operator field of view with primary optic and other visual augmentation systems due to heat mirage and come with a mirage wrap if necessary. The suppressor shall not cause more than a 10% reduction in barrel life. The suppressor shall be able to be attached and detached without tools. (O)
Optics	The REPR shall be compatible with all current scout sniper optics and utilize the M8541 Scout Sniper Day Scope (SSDS). (T = O)	(T = O)
Magazine	The REPR shall use a 20 round magazine that does not require special tools to load. The magazine should be capable of speed loading ammunition into the magazine; the use of a separate device is acceptable if necessary. The magazine shall not adversely affect system performance to include reliability and precision. The magazine shall be able to be disassembled, cleaned, and reassembled by the operator in field conditions. (T)	The REPR shall use a magazine with more than 20 rounds that does not require special tools to load or adversely affect system capabilities. The magazine should be capable of speed loading ammunition into the magazine; the use of a separate device is acceptable if necessary. The magazine shall not adversely affect system performance to include reliability and precision. The magazine shall be able to be disassembled, cleaned, and reassembled by the operator in field conditions. (O)
Reload Time	The REPR shall be reloadable by a trained operator in the prone position with a ready magazine in less than 5 seconds from the moment the magazine release is activated to the resumption of firing. (T)	The REPR shall be reloadable by a trained operator in the prone position with a ready magazine in less than 3 seconds from the moment the magazine release is activated to the resumption of firing. (O)
Rail System	The REPR shall have a free floating military standard (MIL-STD) 1913 (PICATINNEY RAIL) flat top upper receiver with numbered rail slots. The rails shall accommodate all current day/night optics and aiming devices. The 12:00 rail shall be capable of maintaining the bore sight alignment and weapon zero while conducting routine firing combined with combat movement and operational training drills. The REPR shall have a modular MIL-STD 1913 PICATINNEY quad forward rail system capable of mounting accessory equipment. The MILSTD 1913 rails at the 3:00 and 9:00 positions shall allow for the attachment of weapon accessories. The 3:00	(T = O))

Attribute	Production Threshold	Production Objective
	and 9:00 rails must be capable of maintaining the bore sight alignment and weapon zero while conducting routine firing combined with combat movement and operational training drills. (T = O)	
Ergonomic Enhancements	The REPR shall have an adjustable stock and cheek-piece that will accommodate shooter length of pull adjustments/optics alignment. The adjustable stock shall accommodate cheek weld, stock weld, and eye relief of the 5^{th}-95^{th} percentile of Marines. The stock must not interfere with the charging handle or cycle of operations of the weapon in any configuration. (T)	The REPR shall have a folding/locking stock. The buttstock when folded shall not interfere with the operation of the weapon. The stock shall be adjustable and have an adjustable cheek-piece that will accommodate shooter length of pull adjustments/optics alignment The adjustable stock shall accommodate cheek weld, stock weld, and eye relief of the 5^{th}-95^{th} percentile of Marines. The stock must not interfere with the charging handle or cycle of operations of the weapon in any configuration. (O)
Forward Assist	The REPR shall include a forward assist. (T = O)	(T = O)
Brass Deflector	The REPR shall incorporate a brass deflector. (T = O)	(T = O)
Ejection Port Cover	The REPR shall include an ejection port cover. (T = O)	(T = O)

(1) *Durable Protective Materials (coatings):* The REPR with suppressor and magazines shall be protected with durable, protective, and corrosion resistant coatings. The coatings shall be abrasion, impact, wear, and chemical resistant. The coatings shall minimize the attraction of dust and contamination and provide protection equal to or greater than phosphate coated and chrome coated steels. (T) The REPR shall be constructed of and coated with highly corrosion resistant materials. Critical working areas of wear essential to the function and longevity of the system will be coated with high temperature resistant, lubricating, durable coatings to improve reliability, durability, and maintainability through the life cycle of the system. The REPR shall incorporate self-lubricating coatings and materials that do not require grease or lubricants for the operating components. These coatings shall minimize the attraction of dust and contamination. The REPR shall be capable of firing 100 rounds of ammunition without stoppages after standard Salt Fog Test exposure of 96 hours. During Salt Fog Test exposure, one magazine shall be locked in the weapon and the other magazines shall be subjected to the Salt Fog Test environment during the entire exposure test period. The coatings shall withstand NBC decontamination procedures without the need for removal of any components. (O)

Rationale: *The REPR must remain functional in the full range of environments and conditions in which the scout sniper can be expected to perform his mission. This ultimately increases survivability and provides the operator with the confidence needed in a weapon system that can operate reliably under extreme and hazardous environmental conditions. These requirements reflect the durable protective coating standards established for the Marine Corps Infantry Automatic Rifle, the Army Semi-Automatic Sniper System, and SOF's Precision Sniper Rifle.*

(2) Cleaning and Lubricating Materials: The REPR shall be capable of being cleaned and lubricated with all US government standard weapon cleaners and lubricants without adverse effects to the weapon (RBC, LAW, LSA, and CLP). (T) The protective coatings for the operating components should not require the application of grease or lubricants while still confirming to threshold standards. (O)

Rationale: *The REPR should contain standard lubrication requirements to maintain system reliability, and to prevent cost inflation of the weapon system. The REPR must be maintainable within the existing Marine Corps maintenance structure. These requirements reflect cleaning and lubricating standards established for the Marine Corps Infantry Automatic Rifle, the Army Semi-Automatic Sniper System, and SOF's Precision Sniper Rifle.*

(3) *Color*: All external and visible REPR surfaces including magazines and suppressor shall meet Fed Color Standard 30118 and have a non-reflective coating that is paintable, consistent with current camouflage colors and patterns, and minimizes infrared signatures. (T) All external and visible REPR surfaces including magazines and suppressor shall meet Fed Color Standard 30118 and have a non-reflective coating in coyote brown that is paintable and minimizes infrared signatures. (O)

Rationale: *The equipment of scout snipers must contribute to the overall effectiveness of his camouflage and concealment. The failure of any one item in his equipment, to include his weapon, to incorporate signature reduction degrades or negates the overall effect of the individual's camouflage and greatly reduces his survivability. The objective value supports integration with all near future Marine Corps camouflage schemes without over focusing on a single pattern. These requirements reflect the color standards established for the Marine Corps Infantry Automatic Rifle, the Army Semi-Automatic Sniper System, and SOF's Precision Sniper Rifle.*

(4) *System Ruggedness*: The REPR shall operate effectively and reliably in all Marine Corps and SOF operational climates and geographical areas that include sand, swamp, tundra, grasslands, forest, tropical, urban areas, maritime, riverine, and mountains. The REPR with optic, magazine inserted, and suppressor attached shall possess sufficient ruggedness to withstand military use to include shipboard operations, helicopter borne operations, and amphibious landings without degrading the operational and safety performance of the system. The system shall withstand the shock of being dropped by the user or of being dropped from a stationary vehicle at 1.7 meters onto a concrete surface, the shock from a user performing individual movement techniques in combat, and the vibrations of being transported in standard military aircraft and ground vehicles. The REPR shall perform reliably in High Temperature - 160° F, Low Temperature - minus 25° F, Salt Fog, Sand and Dust, Icing/Freezing Rain, and after immersion in mud. The REPR shall also operate at altitudes up to 15,000 feet. (T = O).

Rationale: *The REPR must remain functional in the full range of environments and conditions in which the scout sniper can be expected to perform his mission. The threshold drop is based on the bed height of a Medium Tactical Vehicle Replacement (MTVR). Further, Marines and SOF will operate in littoral environments where the likelihood of being submerged in saltwater*

is substantially high. It is imperative for operational success that the weapon and associated parts be able to function in ship to shore operations where sustained submersion of the weapon system is likely. These requirements for system ruggedness reflect the standards established for the Marine Corps Infantry Automatic Rifle, the Army Semi-Automatic Sniper System, and SOF's Precision Sniper Rifle.

(5) *Weight*: Weight with scope, sling, bipod, and magazine loaded with 20 rounds shall be 11 pounds or less. (T) 8 pounds or less. (O)

Rationale: *The REPR weight shall not be a detriment to the scout sniper's individual mobility. The threshold weight is a balance between industry standards of weapons advertised to have capabilities similar to the REPR and the US Army Research Laboratory studies demonstrating that individual weapon weights in excess of 12.5 pounds impact the individuals ability to employ the weapon effectively.*

(6) *Length*: The REPR without suppressor shall measure less than 40 inches in length with the buttstock extended to a Length of Pull of 13.5 inches (or the closest adjustable position greater than 13.5 inches). (T) The REPR without suppressor shall measure 36 inches in length or less with the buttstock extended to a Length of Pull of 13.5 inches (or the closest adjustable position greater than 13.5 inches). (O) Length of pull is defined as the distance between the front of the trigger and the rear of the buttstock.

Rationale: *The REPR's threshold length (40 inches) is based on the primary individual weapon in the infantry unit, the M16A4. The objective length of 36 inches is based on the length of the shortest available individual weapon in use in the infantry battalion, the M4 with stock extended.*

(7) *Service Life*: ≥30,000 rounds with barrel changes. Weapon system shall maintain precision of 1 MOA or less. (T = O)

Rationale: *The REPR shall maintain a service life of 30,000 rounds or more with barrel changes. System service life is tied directly to the ability of the system to maintain a precision of fire 1 MOA or less as well as critical functionality and safety standards. This ensures that weapons that reach the 30,000 round mark may still be serviceable if the system is still performing to standards. At estimated usage rates, this system is projected to last a decade with proper maintenance and care. The objective service life standard is based on industry's advertised capability, which has not been proven through government testing and evaluation.*

(8) *Barrel Life*: ≥15,000 rounds. A precision of fire of 1 MOA or less shall be maintained. (T) ≥ 30,000 rounds. A precision of fire of 1 MOA or less shall be maintained. (O)

Rationale: *The barrel life of the REPR shall be linked to maintaining a precision of fire of 1 MOA or less for 15,000 rounds (T). 30,000 rounds (O). Barrel life is especially critical in a semi-automatic weapon that is expected to fire a higher number of rounds than precision bolt action systems. This ensures that sustainment costs are kept low while minimizing the logistical*

burdens that include armorer support. The objective barrel life standard is based on industry's advertised capability, which has not been proven through government testing and evaluation.

(9) *Barrel Replacement*: The REPR barrel shall be capable of removal and replacement at the intermediate level by an MOS 2112 armorer (certified to work on precision weapons. (T) The REPR barrel shall be capable of removal and replacement at the organizational level by an MOS 2111 armorer. (O)

Rationale: *During the lifecycle of the REPR, it is expected that if objective barrel life standards are not met, it will be necessary to replace the upper assemblies including the barrel to maintain proper functionality and a precision of fire of 1 MOA or less. Upper assembly replacement is estimated at 60% of the total system cost and is projected to double initial service life of the system. This is critical to maintain a low operations and maintenance (O&M) cost. Further, it is essential for a low density weapon system such as the REPR to maintain an "up" status of 87.5% of the time to meet mission requirements. This mandates that overhauls to the system be rapidly completed at the organizational or intermediate maintenance echelon. If MOS 2111's can complete this work, the system can almost be entirely maintained at the unit level. If not, maintenance by MOS 2112 precision armorers provide the next most responsive option.*

(10) *Assembly/Disassembly*: The REPR shall be capable of breakdown to its primary operating components by the operator in 1 minute or less without tools for normal cleaning and care. The weapon parts shall be designed so that incorrect assembly is highly improbable. The REPR shall be capable of re-assembly from breakdown in 1 minute or less with no change in the weapon's zero and without tools. (T) The REPR shall be capable of breakdown to its primary operating components by the operator in 30 seconds or less without tools for normal cleaning and care. The weapon parts shall be designed so that incorrect assembly is highly improbable. The REPR shall be capable of re-assembly from breakdown in 30 seconds or less with no change in the weapon's zero and without tools. (O)

Rationale: *For the REPR to maintain operational capability in the field, it is necessary for the operator to be able to break down and reassemble the weapon system in a timely manner. The operator is the first line of maintenance and the most essential element in monitoring the weapon's status. As a precision weapon, the REPR must support the conduct of detailed inspection and maintenance by the operator in a simple, intuitive manner. Further, as a precision weapon, it is essential that no change in the weapon's zero should occur as a result of proper assembly/disassembly. All of this shall be accomplished without tools as tools are likely to be lost, are a burden to the supply system, and would unnecessarily burden the operator with more weight and equipment. These requirements for assembly and disassembly reflect standards that are applicable to the REPR and were drawn from the Marine Corps Infantry Automatic Rifle, the Army Semi-Automatic Sniper System, and SOF's Precision Sniper Rifle standards.*

(11) *Trigger Pull*: Pull weight of no less than 4 lbs. (T) The REPR's trigger pull shall be operator-adjustable within the threshold requirement. (O)

Rationale: *The REPR's trigger pull should be light enough to allow for precise engagement, yet provide enough resistance to safely be employed in a combat environment. Further, the ability to adjust the trigger pull to individual shooter's preference will improve the operator's performance.*

(12) *Recoil*: The REPR recoil energy should not exceed 18 foot pounds. (T) The REPR recoil energy shall not exceed 12 foot pounds. (O)

Rationale: *The REPR shall reduce recoil of the weapon caused by discharging rounds, to maintain the operator's ability to maintain target acquisition through the optic and allow for more rounds on target in a multiple target and rapid precision engagement against hostile forces. These requirements for system recoil reflect the standards established for the Army Semi-Automatic Sniper System and SOF's Precision Sniper Rifle.*

(13) Rapid *Target Acquisition/Recoil Management*: A trained sniper firing the REPR system shall engage an E-Type silhouette target (modified for the Marine Corps Marksmanship Program (MCMP) Table II showing head, chest, and pelvic girdle scoring areas) with 10 rounds in 1 minute at 300 yards. All shots must be placed inside the head/chest scoring areas. (T) A trained sniper firing the REPR system shall engage an E-Type silhouette target (modified for MCMP Table II showing head, chest, and pelvic girdle scoring areas) with 20 rounds in 1 minute at 300 yards. All shots must be placed inside the head/chest scoring areas. (O)

Rationale: *For the REPR to be a successful weapon system in rapid precision engagement it is imperative that the operator be able to successfully engage targets with minimal interference from the operation of the rifle. Allowing the operator to "stay on the scope/stay on the gun," while engaging multiple targets is a key quality the REPR system should incorporate in to its rapid target acquisition/recoil management. Further, this aligns the REPR's capability with the standards set forth in the Marine Corps Marksmanship Program (MCO 3574.2K, Task 0300.M16.1009) under Table I's requirement to "engage targets at the sustained rate."*

(14) *Hit Probability*: A fully trained and current sniper firing the REPR shall achieve 8 out of 10 hits (80% probability) within 1.0 MOA at 800 yards firing 10 rounds in 10 minutes or less on a "NRA Bulls-eye" target under nominal conditions. Nominal conditions are defined as 70 degrees F +/- 10 degrees and unlimited visibility during daylight. (T) A fully trained and current sniper firing the REPR shall achieve 8 out of 10 hits (80% probability) within 1.0 MOA at 1000 yards firing 10 rounds in 10 minutes or less on a "NRA Bulls-eye" target under nominal conditions. Nominal conditions are defined as 70 degrees F +/- 10 degrees and unlimited visibility during daylight. (O)

Rationale: *The REPR shall have the ability to precisely engage targets at long range with a high probability of a first round lethal hit. This will enhance the operator's ability to carry out operations and inflict damage on enemy forces at longer ranges than current semi-automatic sniper rifles can achieve within the current inventory while augmenting the capabilities of the M40A3. These requirements for hit probability reflect the standards necessary for capability*

generation and were modified from established standards for the Army Semi-Automatic Sniper System and SOF's Precision Sniper Rifle.

(15) *Multiple Target Engagement*: The REPR shall be capable of engaging 3 E-Type Silhouette targets (modified for MCMP Table II showing head, chest, and pelvic girdle scoring areas) placed 10 feet apart with one shot a piece in the head or chest scoring area at 500 meters in 15 seconds or less. (T) The REPR shall be capable of engaging 3 E-Type Silhouette targets (modified for MCMP Table II showing head, chest, and pelvic girdle scoring areas) placed 10 feet apart with one shot a piece in the head or chest scoring area at 800 meters in 15 seconds or less. (O)

Rationale: *The REPR must not only be able to rapidly engage with precision, but also rapidly engage multiple targets. This is a necessary element as simply measuring precision fire and rapid fires do not take into account the ability to quickly move, re-orient, acquire, track, and engage more than one target. This capability is critical in urban or restrictive terrain where multiple fleeting targets may appear and disappear quickly. Ten feet of dispersion between targets was selected as an average distance that one may encounter enemy targets in a variety of settings. These requirements for multiple target engagement reflect the standards necessary for capability generation and were modified from established MCMP standards.*

(16) Safety: The REPR shall have a safety mechanism that prevents the weapon from being fired when the trigger is depressed with the safety in the "SAFE" position. The 5th to 95th percentile of shooters shall be able to manipulate the safety using the shooting hand and without changing the firing grip. The safety shall be easy to operate under all environmental conditions and operator dress, and shall be capable of ready status verification (safe/fire) by both sight and touch. The REPR safety will have a tactile signature to the operator with minimal audible signature. (T) The REPR shall have a safety mechanism that prevents the weapon from being fired when the trigger is depressed with the safety in the "SAFE" position. The safety shall be manipulated using the shooting hand and without changing the firing grip, easy to operate under all environmental conditions and operator dress, and shall be capable of ready status verification (safe/fire) by both sight and touch. The REPR shall allow for a round to be carried in the chamber without applied stored energy. The REPR safety shall have zero audible signature. (O)

Rationale: *The REPR shall have a minimum safety feature to ensure that the weapon does not fire when the trigger is depressed with the safety in the "SAFE" position. The safety is essential for the weapon system to ensure operator security and safety in combat operations. The safety system should not encumber the operator from maintaining target acquisition, nor should it compromise his position due to audible signatures of switching the weapon system from "SAFE" to "FIRE."*

(17) *Suppressor*: The REPR shall have a precision fire, high decibel reduction, quick disconnect sound suppressor that will reduce audible signal no less than 28db. Accuracy should not be affected by a deviation greater than or equal to a 2 MOA shift

from weapon's original zero with a repeatability threshold of 1 MOA. The sound/flash suppressor shall add no more than 10 inches to the length of the REPR and have a service life equal to or greater than the life of the barrel. The suppressor shall weigh no more than 38 ounces and be capable of being installed and removed by the operator in the field with no tools. The attached sound suppressor (when hot) shall have minimal degradation of the operator field of view with primary optic and other visual augmentation systems due to heat mirage and come with a mirage wrap if necessary. The suppressor shall not cause more than a 20% reduction in barrel life. The suppressor shall be able to be attached and detached without tools. (T) The REPR shall have a precision fire, high decibel reduction, quick disconnect sound suppressor that will reduce audible signal no less than 35db. Accuracy should not be affected by a deviation greater than or equal to a 1 MOA shift from weapon's original zero with a repeatability threshold of 0 MOA. The sound/flash suppressor shall add no more than 8.5 inches to the length of the REPR and have a service life equal to or greater than the life of the barrel. The suppressor shall weigh no more than 24 ounces and be capable of being installed and removed by the operator in the field with no tools. The attached sound suppressor (when hot) shall have minimal degradation of the operator field of view with primary optic and other visual augmentation systems due to heat mirage and come with a mirage wrap if necessary. The suppressor shall not cause more than a 10% reduction in barrel life. The suppressor shall be able to be attached and detached without tools. (O)

Rationale: *The REPR shall incorporate a sound suppressor in order to allow the scout sniper to stealthily engage multiple targets before the enemy becomes aware that he is under attack. Further, by reducing the scout sniper's acoustic signature, the chance of the scout sniper's shooting location being compromised is significantly reduced, which increases scout sniper survivability. It is essential that the REPR be tested and evaluated with a suppressor as it is projected to be used at least 80% of the time in this configuration. Due to this, barrel life, precision, and reliability could be adversely affected. These requirements for a suppressor reflect the standards necessary for capability generation and were modified from established standards for the Army Semi-Automatic Sniper System and SOF's Precision Sniper Rifle.*

(18) *Optics*: The REPR shall be compatible with all current scout sniper optics and utilize the M8541 SSDS. (T = O)

Rationale: *The REPR system shall incorporate the optics utilized within current inventory and should support any upgrades to optic devices throughout the life-cycle of the REPR weapon system*

(19) *Magazine*: The REPR shall use a 20 round magazine that does not require special tools to load. The magazine should be capable of speed loading ammunition into the magazine; the use of a separate device is acceptable if necessary. The magazine shall not adversely affect system performance to include reliability and precision. The magazine shall be able to be disassembled, cleaned, and reassembled by the operator in field conditions. (T) The REPR shall use a magazine with more than 20 rounds that does not require special tools to load or adversely affect system capabilities. The

magazine should be capable of speed loading ammunition into the magazine; the use of a separate device is acceptable if necessary. The magazine shall not adversely affect system performance to include reliability and precision. The magazine shall be able to be disassembled, cleaned, and reassembled by the operator in field conditions. (O)

Rationale: *The magazine is an important component to the achievement of the REPR's primary mission of rapid engagement. The capacity of the primary magazine must be sufficient to support rapid engagement of multiple targets or of rapid defensive/offensive fires in break-contact/ambush type scenarios where a premium is placed on a high volume of accurate fire. Testing of the REPR with the magazines it will be procured with is essential as past research has demonstrated that magazines are a leading cause of weapon malfunctions that reduce reliability. The threshold of 20 rounds is based on the amount of area (20) 7.62x51mm rounds double stacked in a magazine require. This is currently an industry standard as any larger magazines have tended to obstruct firing especially in the prone position by elevating the muzzle of the weapon in an M-16 like configuration.*

(20) *Reload Time*: The REPR shall be reloadable by a trained operator in the prone position with a ready magazine in less than 5 seconds from the moment the magazine release is activated to the resumption of firing. (T) The REPR shall be reloadable by a trained operator in the prone position with a ready magazine in less than 3 seconds from the moment the magazine release is activated to the resumption of firing. (O)

Rationale: *Rapid engagement is an essential capability the REPR provides scout snipers. Although (20) rounds immediately available in a loaded magazine is significant, sustained heavy combat, especially while in contact with enemy forces in close restrictive terrain, will require rapid reloads. This is essential for maximum lethality as well as the survivability of the scout sniper. The standard is measured from the prone position as this is the most likely and most stable of doctrinal shooting positions for scout snipers as well as the most difficult firing position in which to load an individual weapon.*

(21) Rail System: The REPR shall have a free floating military standard (MIL-STD) 1913 (PICATINNEY RAIL) flat top upper receiver with numbered rail slots. The rails shall accommodate all current day/night optics and aiming devices. The 12:00 rail shall be capable of maintaining the bore sight alignment and weapon zero while conducting routine firing combined with combat movement and operational training drills. The REPR shall have a modular MIL-STD 1913 PICATINNEY quad forward rail system capable of mounting accessory equipment. The MIL-STD 1913 rails at the 3:00 and 9:00 positions shall allow for the attachment of weapon accessories. The 3:00 and 9:00 rails must be capable of maintaining the bore sight alignment and weapon zero while conducting routine firing combined with combat movement and operational training drills. (T = O)

Rationale: *The REPR shall maintain a MIL-STD 1913 (Picatinney Rail) flat top upper receiver with numbered rail slots to support the number of available accessories that enhance the effectiveness of individual weapons. The rail system shall be utilized to incorporate ancillary equipment such as thermal devices, night optics, and other optical devices to enhance the*

accuracy and lethality of the sniper. The threshold value for available accessory points is matched to the M16A4 service rifle.

(22) *Ergonomic Enhancements*: The REPR should have an adjustable stock and cheek-piece that will accommodate shooter length of pull adjustments/optics alignment. The adjustable stock shall accommodate cheek weld, stock weld, and eye relief of the 5th-95th percentile of Marines. The stock must not interfere with the charging handle or cycle of operations of the weapon in any configuration. (T) The REPR shall have a folding/locking stock. The buttstock when folded shall not interfere with the operation of the weapon. The stock shall be adjustable and have an adjustable cheek-piece that will accommodate shooter length of pull adjustments/optics alignment. The adjustable stock shall accommodate cheek weld, stock weld, and eye relief of the 5th-95th percentile of Marines. The stock must not interfere with the charging handle or cycle of operations of the weapon in any configuration. (O)

Rationale: *The REPR system shall incorporate ergonomic enhancements to increase the lethality and precision capability of the operator. For the operator to perform at optimal performance it is mission critical that the stock of the weapon system be adjustable to various operational environments.*

(23) *Forward Assist*: The REPR shall include a forward assist. (T = O)

Rationale: *The REPR shall incorporate a forward assist to ensure that proper functioning of the weapon system is maintained in operations. Previous semi-automatic sniper rifles have disregarded this function and have led to serious maintenance issues that could have led to or caused mission critical maintenance problems.*

(24) *Brass Deflector*: The REPR shall incorporate a brass deflector. (T = O)

Rationale: *The REPR* shall *incorporate a brass deflector to ensure proper functioning of the semi-automatic fire used by the weapon system. The brass deflector will ensure operator safety during operations and discharging of the weapon system.*

(25) *Ejection Port Cover*: The REPR shall include an ejection port cover. (T = O)

Rationale: *The REPR* should *incorporate an ejection port cover to ensure proper functioning of the semi-automatic fire used by the weapon system. The ejection port cover will ensure operator safety during operations and discharging of the weapon system.*

6.2. ADDITIONAL ATTRIBUTES

Table IV: Additional Attributes

Additional Attributes	Threshold	Objective
Cleaning	The deployment and cleaning kits should include all tools required for operator and organizational-level maintenance. The REPR shall be equipped with a deployment kit and a	The deployment and cleaning kits shall include all tools required for operator and organizational-level maintenance. The REPR shall be equipped with a deployment

Additional Attributes	Threshold	Objective
	compact cleaning kit for general field maintenance and cleaning. The REPR shall be equipped with a cleaning kit that includes any tools needed to conduct routine maintenance, operator field repairs, operator field parts replacement and weapons system setup. Required: a one piece plastic coated cleaning rod with bore/chamber guides and matching jags (one bronze phosphor brush, and one patch jag), one plastic bore guide, no lint patches, CLP (must be compatible with CLP), one plastic bristle brush, one take down field cleaning rod and pull through combination fabric/bronze bore snake. (T = O)	kit and a compact cleaning kit for general field maintenance and cleaning. The REPR shall be equipped with a cleaning kit that includes any tools needed to conduct routine maintenance, operator field repairs, operator field parts replacement and weapons system setup. Required: a one piece plastic coated cleaning rod with bore/chamber guides and matching jags (one bronze phosphor brush, and one patch jag), one plastic bore guide, no lint patches, CLP (must be compatible with CLP), one plastic bristle brush, one take down field cleaning rod and pull through combination fabric/bronze bore snake. (T = O)
Sling	The REPR shall have a detachable, adjustable, ambidextrous, synthetic cuff sling with attachment points at various (high, mid, low) on the rear end. The sling/sling mounts shall allow the weapon to be slung in the standard carry and single mid point. The sling/sling mounts shall not interfere with accessories, shouldering, aiming, and acquiring sight picture both day and night. The REPR must also be compatible with USMC standard issue 3-point sling. (T = O)	The REPR shall have a detachable, adjustable, ambidextrous, synthetic cuff sling with attachment points at various (high, mid, low) on the rear end. The sling/sling mounts shall allow the weapon to be slung in the standard carry and single mid point. The sling/sling mounts shall not interfere with accessories, shouldering, aiming, and acquiring sight picture both day and night. The REPR must also be compatible with USMC standard issue 3-point sling. (T = O)
Bipod	The REPR shall have a detachable bipod with a locking feature to prevent inadvertent collapsing or shortening of the bipod legs. When in the stowed position, bipod shall be foldable with the right or left hand and not interfere with mounted accessories at the 3, 9, and 12 o'clock positions. The bipod shall have independently adjustable legs that can be manipulated with one hand. The bipod will facilitate left or right tracking and have cant adjustment. The feet shall be configured to accommodate surfaces such as ice, snow, sand, mud, earth, stone, and concrete. (T = O)	The REPR shall have a detachable bipod with a locking feature to prevent inadvertent collapsing or shortening of the bipod legs. When in the stowed position, bipod shall be foldable with the right or left hand and not interfere with mounted accessories at the 3, 9, and 12 o'clock positions. The bipod shall have independently adjustable legs that can be manipulated with one hand. The bipod will facilitate left or right tracking and have cant adjustment. The feet shall be configured to accommodate surfaces such as ice, snow, sand, mud, earth, stone, and concrete. (T = O)
Storage Kit	The REPR shall come with a hard case suitable for storage and transport that holds all operationally required accessories. The REPR shall also come with a soft case. (T)	The REPR shall come with a hard case suitable for storage and transport that holds all operationally required accessories. The REPR shall also come with a soft case. (O)
Drag Bag	A drag bag shall be provided for man-pack infiltration. REPR shall be compatible with current issue. (T = O)	A drag bag shall be provided for man-pack infiltration. REPR shall be compatible with current issue. (T = O)
Manuals	The REPR shall be provided with manufacturer Interactive Electronic Technical Manuals (IETM), operator and organizational-level maintenance manuals with government oversight, and a weatherproof sniper data book for each weapon. (T = O)	The REPR shall be provided with manufacturer Interactive Electronic Technical Manuals (IETM), operator and organizational-level maintenance manuals with government oversight, and a weatherproof sniper data book for each weapon. (T = O)

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7. FOS AND SOS SYNCHRONIZATION

a. Relationship of this system to other systems contributing to this capability: The Scout Sniper ICD is supported by the addition of the REPR CPD. The REPR will support this by providing a long range semi-automatic precision capability for scout snipers. This solves one of the two critical materiel gaps identified by the Scout Sniper ICD.

b. The REPR will support the MERS ICD. The REPR provides additional firepower (lethal and precise) to scout snipers supporting the infantry squad in the offense and defense.

c. The REPR also compliments the Army's Soldier as a System (SaaS) ICD- Lethality. The SaaS must provide individual Soldiers the capability to detect, identify, and kill - or achieve desired effects against - selected targets throughout the full spectrum of military operations, under all climatic conditions, and in all operational environments. SaaS must provide lethal and non-lethal capabilities to accomplish those tasks. In the world of joint operations across the ROMO, the REPR will support the Army to this effect.

Table V: Supported ICDs and Related CDDs/CPDs

Capability	CPD Contribution	Related CDDs	Related CPDs	Tier 1 & 2 JCAs
Scout Sniper ICD: The ability to effectively engage personnel with precision	Mitigates identified materiel gap in the ability to rapidly engage multiple targets with precision. Rapid engagement is especially critical in urban environments.	None	None	Force Application (Maneuver, Engagement); Protection (Prevent Kinetic Attack)
Scout Sniper ICD: The ability to conduct patrols	Increased range, precision, and firepower (rapid fire capability) allows patrols to engage larger units from longer range with increased lethality, which allows for greater survivability. Reduces load by removing need to carry 2 weapons (one for precision long range engagement and the other for defense). Provides increased defensive capability to scout sniper teams via increased firepower.	None	None	Force Application (Maneuver, Engagement); Protection (Prevent Kinetic Attack)
Scout Sniper ICD: The ability to conduct counter-sniper operations	Precision rapid engagement allows for scout snipers to engage enemy snipers/sniper teams with the maximum volume of precision fire increasing lethality while also increasing the survivability of the scout sniper team	None	None	Force Application (Maneuver, Engagement); Protection (Prevent Kinetic Attack)
Scout Sniper ICD: The ability to engage hardened or materiel targets with precision	Reduces capability gap by improving the ability to effectively engage materiel targets. REPR's increased firepower allows for effective engagement of targets that may require multiple hits in rapid succession to destroy, neutralize, or suppress.	None	None	Force Application (Maneuver, Engagement); Protection (Prevent Kinetic Attack)
Soldier as a System ICD (Army):	Compliments Army's efforts to increase the soldier's ability to detect, identify, and kill – or achieve the desired effects against – selected targets throughout the ROMO through improve accuracy, increased range, increased lethality, and the ability to rapidly engage multiple targets.	Ground Soldier (Army)	SASS (Army)	Force Application (Maneuver, Engagement); Protection (Prevent Kinetic Attack)

Capability	CPD Contribution	Related CDDs	Related CPDs	Tier 1 & 2 JCAs
Marine Expeditionary Rifle Squad ICD:	Reduces overall weight of unit by providing one weapon that can provide both precision long range fire and rapid high volume fire for offensive and defensive engagements. The ability for its use in an overwatch or counter-sniper role increases the MERS ability to maneuver on the battlefield. Both combine to reduce the effect of MERS identified gap #2 (Move).	None	None	Force Application (Maneuver, Engagement); Protection (Prevent Kinetic Attack)

8. INFORMATION TECHNOLOGY SYSTEM AND NATIONAL SECURITY SYSTEMS (IT AND NSS) SUPPORTABILITY

Not applicable. This capability does not have a requirement to collect or transmit information.

9. INTELLIGENCE SUPPORTABILITY

Not applicable. This capability will not require the production, consumption, processing, or handling of intelligence data.

10. ELECTROMAGNETIC ENVIRONMENTAL EFFECTS (E3) AND SPECTRUM SUPPORTABILITY

The REPR will be capable of operating in an electromagnetic rich battlefield and does not require hardening against the effects of an electromagnetic pulse. This includes not initiating interference with other electronic equipment worn or used by the war-fighter as well as not being affected when operated in proximity to other equipment.

11. TECHNOLOGY READINESS

No Technology Readiness Assessment (TRA) has been conducted for the system in its entirety as the REPR will be procured as a COTS NDI. Component items such as the SSDS and SSMRNS are currently fielded items and will not require any other TRAs. Nearly all of the technology used in the required system has been demonstrated to be mature in relevant operational environments. The Semi-Automatic Sniper Rifle (SASS) fielded by the U.S. Army and the Mk 11 purchased to support immediate OIF and OEF needs by SOF and the USMC validate the maturity of this technology in a man portable weapon system. Further, the technologies required for the REPR will provide an affordable increment of capability and are producible at an acceptable cost and production rate. In summary, because of the maturity of the technologies being used in the system, no independent TRA is planned for the program.

11.1. CRITICAL TECHNOLOGY ELEMENTS

A technology is "critical" if the system being acquired depends on this technology to meet capability thresholds. This technology must meet acceptable developmental costs and schedules as well as support acceptable production and operation costs if the technology or its application is either new or novel. As none of the technologies being employed by the REPR are new or novel, there are no critical technology elements in the system.

11.2. MANUFACTURING READINESS

The DoD has developed Manufacturing Readiness Levels (MRLs) in order to support assessments of the maturity of the design, related materials, tooling, test equipment, manufacturing processes, quality and reliability levels, and key characteristics necessary for producible and reliable products. MRL definitions are based on the integration of existing industry, government agency, and technical coalition standards and recommendations to address producibility concerns earlier in the development phase (e.g., Engineering and Manufacturing Readiness Levels the Milestone Decision Authority (MDA) uses).

While minor design changes may still occur on behalf of industry in its efforts to tailor COTS technology to meet the specific requirements directed by this CPD in the REPR, it has been established that no significant manufacturing risk exists and that industrial capabilities are reasonably available. Each potential REPR system submitted by industry during a full and open competition will be tested and evaluated for technical manufacturing feasibility and military utility. All technologies, processes, concepts, and end items will be further evaluated to reduce manufacturing risk and demonstrate producibility prior to procurement and full-rate production. Critical manufacturing processes have been initially demonstrated for the relevant environments using generally mature processes and tooling.

12. ASSETS REQUIRED TO ACHIEVE FULL OPERATIONAL CAPABILITY

Full Operational Capability (FOC) for the REPR will be achieved when the following units have been issues their full allocation as depicted in the table below.

Table VI: REPR FOC Quantities

Unit	Distribution Concept	Quantity
Infantry Battalions	36 Battalions receiving 8 weapons each supporting standard 8 scout sniper teams	288
AT Battalion (Reserves)	Supports unit distribution throughout the country and how its teams are employed	8
1st Recon	4 platoons, 1 rifle per team	48
2nd Recon	4 platoons, 1 rifle per team	48
3rd Recon	Supported by TOECR Distant Co 27 and Deep Co 9	36
4th Recon	4 platoons, 1 rifle per team	45
3rd Force	4 rifles per company	12
4th Force	4 rifles per company	12
SOTG	2 per SOTG (I, II, III)	6
MARSOC	Based on 10 Jan 2007 Spreadsheet	138
Quantico	Supports current throughput of students	33
SOI East	Supports current throughput of students	33
SOI West	Supports current throughput of students	33
Hawaii	Supports current throughput of students	33
Aberdeen	Based on standard student throughput of 12 students with 1 instructor	13
MCSC	OTF Support weapons	2
MWTC	Supports Instruction for High Angle Shooting Courses	2
MAGTF (CAX)	Supports Instruction at CAX	2
MCB Sec Bn, California	Supports MP Unit	2

Unit	Distribution Concept	Quantity
HQ Co HQBN, 1st MARDIV	Supports MP Unit	2
HQ Spt Bn CLNC	Supports MP Unit	2
HQ Co, HQBN, 2nd MARDIV	Supports MP Unit	2
DMFA	Provided	79
WRMR	Provided	110
	Total	989

13. SCHEDULE AND INITIAL OPERATIONAL CAPABILITY (IOC) / FOC DEFINITIONS

13.1. INITIAL OPERATIONAL CAPABILITY

The desired IOC is by the end of the second quarter of FY09. IOC will be attained when the REPR systems attain the following conditions:

- Marine Corps Training and Education Command (TECOM) and the Scout Sniper School have updated and formalized the program of instruction (POI) to reflect adequate training on the operation and effective employment of the REPR;
- The Scout Sniper Schools, including Special Operations Training Group (SOTG), Mountain Warfare Training Center (MWTC), and Marine Air-Ground Task Force/Combined Arms Exercise (MAGTF/CAX) have their full allocation of weapon systems with all training and field manuals;
- The Scout Sniper Schools have all necessary maintenance personnel trained with an adequate quantity of applicable consumable supplies and repair parts on-hand;
- Effective supplies of applicable ammunition Department of Defense Identification Codes (DODICs) are on hand across the supply system to support full operational capability;
- When approximately 25% or 249 weapon systems have been fully fielded. [(9) Battalions will receive (8) weapons a piece, recon will receive (8), force recon will receive (12), all the scout sniper schools including SOTG and MWTC will receive their full allotment of (140), the MAGTF (CAX) will receive (2), and Aberdeen and Marine Corps Systems Command (MCSC) will their full allotment of (15)];
- Maintenance technicians / armorers have been trained and equipped with an adequate supply of spare parts, consumables, and any specialized tools; and
- The supply system is capable of responding in a timely manner to additional REPR needs.

An IOC will be achieved when approximately 25% or 249 weapon systems have been fully fielded. [(9) Battalions will receive (8) weapons a piece, recon will receive (8), force recon will receive (12), all the scout sniper schools including SOTG) and MWTC will receive their full allotment of (140), the MAGTF CAX will receive (2), and Aberdeen and MCSC will their full

allotment of (15)]. Further, this weapon system shall first be fully fielded to the school houses before the operational forces are delivered theirs. This will prevent unnecessary and costly damage to the systems as a result of use by untrained / poorly trained operators as well as failure during operations as a result of incorrect employment or maintenance again by untrained / poorly trained operators.

13.2. FULL OPERATIONAL CAPABILITY

FOC will be attained when:

- All Marine Units having an authorization in the above table have been 100% supplied,
- The REPR is fully integrated into the force structure; and
- All spares and supply inventories are in place (including Depot Maintenance Afloat Allowance (DMFA) and War Reserve Materiel Requirement (WRMR).

The desired FOC is the end of the 4th Quarter of FY09.

Marine Corps wide, a total of 989 REPR weapon systems will be fielded to achieve a FOC, which is based on providing each Marine Corps unit their full table of equipment (T/E) of sniper weapons based on current tables of organization (T/O). This FOC is mirrors the current FOC for the M40A3, which directly correlates to what units are issued sniper weapons and how many they rate. Of the total 989, 19% will go to the DMFA and the WRMR for a total of 189 weapon systems. The rest, 81% (total of 800 weapon systems) will be fielded with the operational forces and school houses. The fielded weapons shall be in a full operational or "up" status continuously throughout their estimated 20,000-30,000 round life span except for routine operator maintenance and Military Occupational Specialty (MOS) 2111 safety and maintenance inspections. This assumes that MOS 2111's are fully trained on the system and that a full supply of parts and spares will be available in the supply inventories at all echelons of maintenance and that forward operational units will deploy with a full parts block. From initial fielding to reaching FOC it shall take no more than 12 months (Threshold) / 6 months (Objective).

13.3. SCHEDULE

Table VII: Rapid Engagement Precision Rifle Program Schedule

Event	Threshold	Objective
CPD Approval		Mid FY08
RFP/Solicitation		Mid FY08
Initial Developmental Test		Late FY08
Down-Select Operational Test		Late FY08
Contract Award		Late FY08
Follow-On Developmental Test (First Article Units)		FY09
Milestone C		FY09
IOC/RAA		Mid FY09
FOC		End of FY 09

14. OTHER DOTMLPF AND POLICY CONSIDERATIONS

14.1. DOCTRINE

The REPR will provide enhanced firepower and lethality to a scout sniper team. For optimized effective employment, TECOM, in conjunction with the Scout Sniper School, must review and re-evaluate team employment and equipment requirements.

14.2. ORGANIZATION

No change to organization.

14.3. TRAINING

(1) System Training Plan shall be developed by appropriate Marine Corps authority.

(2) New Equipment Training (NET): Contractors, under the oversight of TECOM will conduct NET using a "train-the-trainer" concept. Training will focus on the functional performance and new training strategies associated with the REPR. The program will qualify all operators and maintainers in the field. NET will continue until all units have been fielded. Training Support Packages (TSPs) will be provided to the unit during NET for unit sustainment training.

(3) Specific Training in the Institutional Training Base: The Scout Sniper School, Quantico is the parent school for Sniper training inside the USMC. Institutional training will be conducted here as well as across the other USMC Scout Sniper Schools to provide the USMC and other select individuals from across the Joint Services and agencies with qualified Snipers. The USMC Scout Sniper School POI will be modified by USMC scout sniper SMEs and approved by TECOM to address the enhanced capabilities of the REPR. The USMC scout sniper POI will be restructured to reflect the addition of the REPR capabilities into the scout sniper area of operations. The POI addition will effectively outline guidelines for evaluation of the scout snipers ability to employ the system in a target rich environment under all military operational environments and conditions. The SME and training developers will use the information and knowledge gained from the testing and evaluation phases during source selection as the basis for modifying the TSP, training POI, and employment doctrine. MOS 2111 producing schools will also incorporate the REPR into its POI.

(4) Operation and Maintenance: All weapons will come with operator/maintenance manuals that detail all procedures to include zeroing of accessories. The program office will provide all applicable training, manuals, guidance, and other logistics support. Overall design of the REPR shall promote ease of maintenance through easy accessibility of assemblies and subassemblies for servicing, maintenance, removal, and replacement.

14.4. MATERIEL

Additional materials required include inspection gauges, test equipment, and special tools as defined by the system. The capability set must take into consideration the extreme climate design types which a Marine may operate within.

14.5. Leadership and Education

Proper leadership and education will maximize the capability enhancing effects of the REPR. The M40A3 even with proper leadership and education can not provide the capabilities of the REPR due to material limitations. The integration of the REPR into the school house curriculum for maintenance, repair, operation, and employment will be required.

14.6. Personnel

Current MOS and skill level standards adequately support the doctrinal and TTP employment of scout snipers. No additional MOS's or increases in the number of MOS's employing sniper systems are needed. The REPR will be employed under the same doctrinal principles currently in use by trained scout sniper team personnel.

14.7. Facilities

No additional facilities are anticipated to store or support training with the REPR. Current armories may, however, require fabrication or modification of weapons racks to best support the safe and secure storage of the weapon systems. Ranges being utilized for training of scout snipers are adequate to support this system however, school houses and parent units may choose to invest in rapid engagement pop-up style targets to enhance training on the expanded capabilities this system provides (rapid precision fire)

15. OTHER SYSTEM ATTRIBUTES

15.1. Chemical, Biological, Radiological, and Nuclear (CBRN) Contamination Survivability (CBRNCS)

The REPR system is mission critical. The equipment will survive the initial nuclear effects of blast, thermal and initial nuclear radiation to the same levels where 50% of the personnel available to operate them survives the nuclear effects in accordance with Standardization Agreement (STANAG) 4145/AEP-4 (Threshold)

Rationale: *All front line combat systems such as tanks, howitzers, armored personnel carriers, etc., must be survivable against all initial nuclear weapons effects (INWE) at the levels where a combat effective percentage of the crew survives. Therefore, because the Warfighter as a system is considered a front line mission critical combat system, the REPR should address survivability of all INWE as threshold requirements.*

15.2. Nuclear, Biological, and Chemical Contamination Survivability (NBCCS)

The REPR system is mission critical. The equipment shall be capable of operations in an NBC contaminated environment. The system shall be able to withstand the materiel-damaging effects of NBC contaminants and decontaminants; be able to be decontaminated to negligible risk levels to reduce hazards to Warfighter's operating and maintaining it; and be able to be operated, and maintained by Warfighters wearing full NBC protective ensemble (Mission-Oriented Protective Posture (MOPP) 4), as prescribed in Department of the Army Approved NBC Criteria for Army Materiel, 12 Aug 91. (T=O)

Rationale: *AR 70-75 requires all mission critical equipment to be NBC Contamination Survivable. The cited reference provides specific criteria levels to meet NBCCS survivability requirements*

15.3. CLIMATIC CONDITIONS

The REPR must be operational and maintainable in all types of climate and terrain to which U.S. forces deploy or are stationed. The REPR must be capable of operating during full exposure to temperatures ranging from minus 25 degrees Fahrenheit (F) to 160 degrees F. The REPR must operate in all weather conditions, to include salt fog. The REPR will have no unique weather, oceanographic or astro-geophysical support requirements.

15.4. EMBEDDED INSTRUMENTATION

There are no anticipated requirements for embedded instrumentation.

15.5. AIRDROP OPERATIONS

The REPR will be rugged enough such that it is not adversely affected by all approved airdrop operations.

15.6. WARFIGHTER SURVIVABILITY

The REPR will not have any unique signatures that allow detection by hostile forces.

15.7. MAINTENANCE PLANNING

The REPR will be designed to facilitate ease of maintenance. The REPR will be maintained under three echelons of maintenance – operator (individual), organizational (unit), and intermediate (manufacturer or MOS 2112 precision armorer) echelons. Operator maintenance will consist primarily of day to day maintenance and inspection. Organizational maintenance will consist of those repairs conducted by an MOS 2111 at the unit level whether deployed or in garrison with the expectation that the system will not leave the parent unit and will be returned promptly to the user. Intermediate level maintenance will consist of those repairs conducted by an MOS 2112 precision armorer or ones that require the REPR to be returned to the supply system or manufacturer for extensive upgrades, repairs, inspections, or overhauls. Interim Contractor Logistics Support (ICLS) may be considered as an alternative for both deployed unit and depot level maintenance. Supply support will be provided by the most effective method available. If applicable, ICLS supply and maintenance transactions and documentation will interface with Standard Army Management Information System (STAMIS). Actual maintenance levels and tasks will be determined through the Supportability Analysis (SA) process. The REPR system will not require a new logistics system or new MOSs for maintenance personnel. All weapons will come with operator/maintenance manuals that detail all procedures to include zeroing of accessories. The program office will provide all applicable training, manuals, guidance, and other logistics support. Overall design of the REPR shall promote ease of maintenance through easy accessibility of assemblies and subassemblies for servicing, maintenance, removal, and replacement.

Maintenance Man-Hour Requirement / Maintenance Manpower Support. Each REPR will not require maintenance manpower support from the Marine Corps Table of Organization and

Equipment (TOE) maintainers in excess of 3.8 Direct Productive Maintenance Man-Hours (DPAMMH) at the operational level of support. The REPR will not require maintenance manpower in excess of that which is authorized on an annual basis for repair of the current M40A3 Sniper Weapon System, which the REPR will augment.

15.8. HUMAN SYSTEMS INTEGRATION / MANPOWER AND PERSONNEL INTEGRATION (MANPRINT)

(1) Environmental Compliance Requirement. The user of the REPR shall have the ability to field, train, deploy, operate, maintain, and dispose of the system in full compliance with applicable U.S., foreign and international environmental laws and regulations. The design, production, operation, maintenance, and disposal of the system shall eliminate, or minimize, to the greatest extent possible, the use of hazardous materials, generation of hazardous wastes, and potential for adverse environmental impacts.

(2) Human Factors Engineering. The REPR will be designed for use by the 5th to 95th stature percentile target audience Warfighter. Sound human engineering principles will be used in system design to ensure that target audience Warfighters (operators and maintainers) are capable of performing required tasks with 95 percent reliability and accuracy to ensure optimal total system performance. Human capabilities and limitations shall be incorporated into system definition, design, development, and evaluation.

(3) Training. The instruction and resources required providing the Warfighter and maintainer with knowledge, skills, and abilities to properly operate, maintain, and support systems shall not be significantly increased as a result of the introduction of the REPR.

(4) System Safety. The REPR design and operational characteristics shall minimize the possibilities for accidents or mishaps caused by human error or system failure.

(5) Health Hazards. Through the systematic application of biomedical knowledge to identify, assess, and minimize health hazards associated with the system's operation, maintenance, repair or storage, the REPR shall not present any uncontrolled health hazards to the operator or maintainer through its service lifetime.

(6) Warfighter Survivability. The REPR will have a positive effect on the overall survivability of the individual combat Warfighter by providing a more capable system to augment the existing M40A3. The sniper survivability on the battlefield is increased through precision rapid fire that is sound and flash suppressed.

15.9. TRANSPORTABILITY AND STORAGE

The REPR system will be capable of deploying by air, land, and sea on standard military craft, vessels, and vehicles. The REPR will withstand the effects of salt spray, salt fog, and fungi as well as temperatures and altitudes associated with military storage and transportation without degrading system reliability and without requiring preventive maintenance higher than the operator level.

16. PROGRAM AFFORDABILITY

Research Development Testing and Evaluation costs are driven primarily by the projected expenditure of at least 15,000 rounds per weapon during testing and evaluation as well as procurement of the systems to test.

Procurement, Marine Corps cost is driven primarily by the unit cost of each weapon and ammunition. Total procurement of at least 989 weapon systems for FOC was used as a baseline for costing although 800 weapon systems were used to baseline ammunition expenditures for "fielded" weapons. This is based on FOC minus the number of weapons stocked as spares and war reserves (189). An estimate of 2,000 rounds of training ammunition per fielded weapon per year was the major ammunition cost driver.

Operations and Maintenance, Marine Corps cost was driven primarily by sustainment overhauls. The estimate was based on a projected replacement of the weapons' upper receiver every five years at school houses and every ten years for the remaining fielding weapons. Cost up overhaul was estimated at 60% of the unit cost of the weapon. Consumables and program management were also drivers, but were of a minimal impact compared to the overall cost of sustainment overhauls.

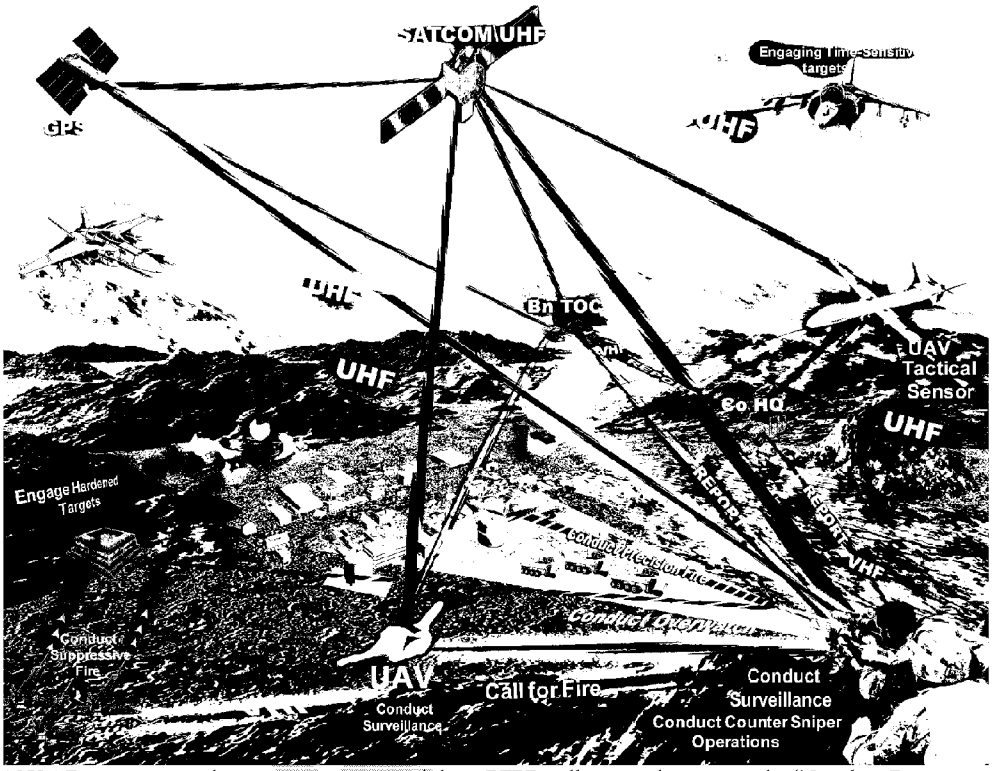
Base Year (FY 2008 $K)

Item	Objective	Threshold
RDT&E	$510.6	$560.3
PMC	$23,071.0	$26,024.7
O&MMC	$4,968.7	$6,853.6
Total	$28,605.8	$33,438.6

Average Prototype Unit Cost (FY 2008 $K)

Item	Objective	Threshold
REPR Weapon System	$5.9	$8.9

APPENDIX A - MANDATORY ARCHITECTURE FRAMEWORK



*OV-1 Depicts overarching scout sniper capability. REPR will primarily support the "Conduct Precision Fire" capability.

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Appendix C – Acronyms

AAR	After Action Reviews
ATGM	Antitank Guided Missile
CAX	Combined Arms Exercise
CBA	Capabilities Based Assessment
CBRN	Chemical, Biological, Radiological, and Nuclear
CBRNCS	Chemical, Biological, Radiological, and Nuclear Contamination Survivability (CBRNCS)
CCJO	Capstone Concept for Joint Operations
CDD	Combat Development Directorate
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CLP	Cleaner, Lubricant, Preservative
CLS	Contractor Logistic Support
COA	Course of Action
COIN	Counterinsurgency
COTS	Commercial Off The Shelf
CPD	Capability Production Document
CQC	Close Quarters Combat
DMFA	Depot Maintenance Afloat Allowance
DO	Distributed Operations
DODIC	Department of Defense Identification Code
DOTMLPF	Doctrine, Organization, Training, Material, Leadership and Education, Facilities
DPAMMH	Direct Productive Maintenance Man-Hours
DVD	Direct Vendor Delivery
EMW	Expeditionary Maneuver Warfare
FAA	Functional Area Analysis
FMID	Fires and Maneuver Integration Division
FOC	Full Operational Capability
FoS	Family of Systems
FY	Fiscal Year
ICD	Initial Capabilities Document
ICLS	Interim Contractor Logistics Support
IETM	Interactive Electronic Technical Manuals
INWE	Initial Nuclear Weapons Effects
IOC	Initial Operating Capability
IT	Information Technology
IW	Irregular Warfare
JCA	Joint Capability Area
JIC	Joint Integrating Concepts
JOC	Joint Operation Concepts
KE	Kinetic Effect
KPP	Key Performance Parameter
LAW	Lubricating Oil, Artic Weapons
LRIP	Low Rate Initial Production
LSA	Lubricating Oil, Semi-Fluid

MAGTF	Marine Air-Ground Task Force
MANPRINT	Manpower and Personnel Integration
MARSOC	Marine Special Operations Command
MCCDC	Marine Corps Combat Development Command
MCCLL	Marine Corps Center for Lessons Learned
MCIA	Marine Corps Intelligence Agency
MCMP	Marine Corps Marksmanship Program
MCO	Major Combat Operations
MCOTEA	Marine Corps Operational Test and Evaluation Activity
MCSC	Marine Corps Systems Command
MDA	Milestone Decision Authority
MEF	Marine Expeditionary Force
MERS	Marine Expeditionary Rifle Squad
MIL-STD	Military Standard
MOA	Minute of Angle
MOPP	Mission-Oriented Protective Posture
MOS	Military Occupational Specialty
MOUT	Military Operations in Urban Terrain
MRBEFF	Mean Rounds Between Essential Function Failure
MRL	Manufacturing Readiness Levels
MROC	Marine Requirements Oversight Council
MTVR	Medium Tactical Vehicle Replacement
MWTC	Mountain Warfare Training Center
NATO	North Atlantic Treaty Organization
NBCCS	Nuclear, Biological, And Chemical Contamination Survivability
NDI	Non-Developmental Items
NET	New Equipment Training
NSS	National Security Systems
O&M	Operations and Maintenance
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OMFTS	Operational Maneuver from the Sea
POI	Program of Instruction
POR	Program of Record
PPQT	Pre-Production Qualification Testing
RBC	Rifle Bore Cleaner
REPR	Rapid Engagement Precision Rifle
ROMO	Range of Military Operations
RPG	Rocket Propelled Grenade
SA	Supportability Analysis
SaaS	Soldier as a System
SASS	Semi-Automatic Sniper Rifle
SME	Subject Matter Expert
SOCOM	Special Operations Command
SOF	Special Operations Forces

SoS	System of Systems
SOTG	Special Operations Training Group
SSDS	Scout Sniper Day Scope
SSMRNS	Scout Sniper Medium Range Night Sight
SSTR	Stability, Security, Transition, and Reconstruction Operations
STAMIS	Standard Army Management Information System
STANAG	Standardization Agreement
T/E	Table of Equipment
T/O	Table of Organization
TECOM	Training and Education Command
TOE	Table of Organization and Equipment
TRA	Technology Readiness Assessment
Tri-MEF	Tri-Marine Expeditionary Force
TSP	Training Support Package
TTP	Tactics, Techniques, and Procedures
USMC	United States Marine Corps
UUNS	Universal Urgent Needs Statement
WRMR	War Reserve Materiel Requirement

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Priority	Gap	DOTMLPF Characteristics	Description	Tier 1 & Tier 2 UCAs	Parameters	Maximum Value
1	Lack progressional formal and unit training for snipers and commanders	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Fast, Resilient, Agile, Lethal	Problems with graduating basically trained snipers, maturity, timing, school seats, platoon size, deployment schedules; snipers are not being utilized correctly or to capacity; limited role in mission planning process; no formalized unit training	**Tier 1**: Joint Force Generation **Tier 2**: Man, Equip, Organize, Develop Skills	**% Of fully trained Scout Snipers**	**85%**
2	Lack ability to effectively engage targets beyond 800 yards with precision during daylight	Interoperable, Adaptable/Tailorable, Enduring/Persistent, Precise, Fast, Resilient, Agile, Lethal	M40 will not maintain precision or suitable lethality beyond 800 yards in daylight	**Tier 1**: Joint Lanc Operations, Joint Special Operations & Irregular Warfare, **Tier 2**: Provide and Employ Joint Fires, Control Territory Populations & Resources, Direct Action, Counterterrorism, Counterinsurgency, Unconventional Warfare, Psychological Operations	**% Of targets engaged beyond 800 yards with 1 MOA**	**90%**
3	Insufficient lethality of a center of mass body shot from 7.62mm at threshold ranges (desert brown: 1500m)	Precise, Fast, Resilient, Agile, Lethal	Often multiple shots are required to kill a target within M40 "effective" range (1000 yards); no or significantly reduced lethality at 1500 meters based on reduced ballistic energy upon impact at threshold range	**Tier 1**: Joint Lanc Operations, Joint Special Operations & Irregular Warfare, **Tier 2**: Provide and Employ Joint Fires, Control Territory Populations & Resources, Direct Action, Counterterrorism, Counterinsurgency, Unconventional Warfare, Psychological Operations	**% Of targets neutralized within threshold ranges (desert brown 1500m)**	**90%**
4	Scout Sniper platoon lacks established T/E.	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Resilient, Agile, Lethal	Current Scout Sniper platoons fall under H&S Company's T/E. As a result, Scout Snipers are often not allocated the appropriate equipment. Scout Sniper platoons require a separate T/E to ensure they are provided adequate equipment to include communicat ons suites, night optics, thermal optics, GPS, semi-automatic rifle, etc.	**Tier 1**: Joint Logistics, Joint Force Generation **Tier 2**: Agile Sustainment, Joint Theater Logistics, Man, Equip, Organize, Develop Skills	**% Of Platoons with standardized set of equipment established in the Scout Sniper T/E**	**100%**
5	Insufficient training for engagement of moving targets	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Fast, Resilient, Agile, Lethal	Limited facilities to support this training, limited time to use facilities, limited ammunition particular to an urban environment	**Tier 1**: Joint Lanc Operations, Joint Force Generation, **Tier 2**: Provide and Employ Joint Fires, Man, Equip, Organize, Develop Skills	**% Of moving targets hit by Scout Snipers**	**90%**
6	Lack ability to quickly and accurately calculate ballistics and targeting data	Knowledge Empowered, Networked, Interoperable, Adaptable/Tailorable, Enduring/Persistent, Precise, Fast, Resilient, Agile, Lethal	Ballistic computers, chronographs, range finders, lack training with equipment, lack ability to capture weather data	**Tier 1**: Joint Lanc Operations, Joint Battlespace Awareness, Joint Force Generation, **Tier 2**: Observation & Collection, TECHNI, Geophysical, Human. Equip, Organize, Develop Skills	**% Of ballistics and targeting data accurately calculated**	**95%**
7	Insufficient ability to conduct counter sniper missions	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Fast, Resilient, Agile, Lethal	Snipers are not given formal instruction on this nor specialized gear, nor employed properly to conduct counter-sniper operations; rapidly improving technology to support this; other nations (including threat nations) developing this capability	**Tier 1**: Joint Lanc Operations, Joint Special Operations & Irregular Warfare, Joint Protection, Joint Force Generation, **Tier 2**: Security (JSIO), Protection from Terrorist Threats (JP). Counterterrorism, Counterinsurgency, Unconventional Warfare, Physical Security, Operations Security (JInO) Develop Skills	**% Of Scout Snipers capable of conducting Counter Sniper Operations**	**90%**
8	Insufficient training on gear currently being issued to operating forces in theater	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Fast, Resilient, Agile, Lethal	Currently new gear being fielded is not given to snipers to familiarize and train with before entering theater where it is first issued.	**Tier 1**: Joint Force Generation **Tier 2**: Equip, Organize, Develop Skills, Acquire, Integrate, Mission Rehearsal Exercise	**% Of Scout Snipers sufficiently trained on established T/E**	**100%**
9	Insufficient ability to move in urban environment without being detected	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Fast, Resilient, Agile, Lethal	PPE, large weapons, local area training, and inability to wear local dress prevents snipers from blending into urban environment, limited cultural anc linguistic training	**Tier 1**: Joint Special Operations & Irregular Warfare, Joint Battlespace Awareness, Joint Command & Control, Joint Force Generation **Tier 2**: Unconventional Warfare, Develop & Maintain Shared SA & Understanding, Operational Planning, Monitor Execution, Assess Effects and Adapt Operations, Develop Skills, Doctrine, Train, Exercise	**Time in Mission before compromised position occurs**	**48 Hours**
10	Lack in-depth cultural / foreign area training	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent Precise, Resilient, Agile	Time not allocated for training; hope to build better baseline level of training throughout USMC	**Tier 1**: Joint Stability Operations (SSTR), Joint Battlespace Awareness, Joint Shaping, Joint Force Generation **Tier 2**: Building Military Partner Capability (JS), Building Military Partner Capacity (JS), HUMINT. Current Intelligence. Predictive Intelligence. Access/Share Info on Adversary/Neutral/Nonacomatante , Public Information (JPAO). Educate, Academic	**% Of Scout Snipers trained on cultural/foreign areas prior to deployment**	**50%**

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11	Insufficient mobility, stealth, awareness, and endurance due to overall weight of combat load	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Fast, Resilient, Agile,	Snipers are actively carrying over 140 lbs of gear into combat substantially reducing endurance, mobility, stealth, and awareness	**Tier 1**: Joint Land Operations, Joint Force Generation **Tier 2**: Joint Deployment Rapid Distribution, Concuct Decisive Maneuver, Equip, Acquire, Integrate	**% Reduction needed in overall combat load to increase mobility, stealth, awareness and endurance in Scout Sniper missions**	50%
12	Lack ability to rapidly engage multiple targets with precision	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Fast, Agile, Lethal	Need for to engage multiple targets rapidly and with precision especially in urban area only being temporarily filled by MK 11	**Tier 1**: Joint Land Operations, Joint Force Generation **Tier 2**: Provide and Employ Joint Fires, Equip, Acquire, Integrate, Develop Skills, Train	**% Of units with semi-automatic sniper suites issued in accordance with the established Scout Sniper T/E**	100%
13	Lack of proficiency to engage personnel targets from multiple shooting positions	Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Fast, Resilient, Agile, Lethal	Limited facilities to support this training, limited time to use facilities, limited ammunition	**Tier 1**: Joint Force Generation **Tier 2**: Develop Skills, Train, Exercise, Mission Rehearsal Exercise	**% Of Scout Snipers trained to engage personnel targets from multiple shooting positions**	100%
14	Inability to engage materiel targets with precision	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Resilient, Agile, Lethal	SASR will not hold 1 MOA	**Tier 1**: Joint Land Operations, Joint Force Generation, **Tier 2**: Provide and Employ Joint Fires, Equip, Acquire, Integrate	**Range of shot from .50 cal that maintains 1 MOA**	1000 meters
15	Lack of proficiency in operating required communications equipment	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Fast, Resilient, Agile	School house POI lacks sufficient training time to become proficient, no standardized unit training; don't have enough equipment	**Tier 1**: Joint Land Operations, Joint Battlespace Awareness, Joint Force Generation **Tier 2**: Observation & Collection (JBA), Develop & Maintain Shared SA & Understanding, Equip, Develop Skills, Train	**% Of Scout Snipers trained to advanced competency in operating required communications equipment**	100%
16	Lack of proficiency in following proper reporting procedures	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Fast, Resilient, Agile, Letha	Time is not dedicated; recon (esp. urban) reporting is not trained outside of urban R&S course	**Tier 1**: Joint Force Generation **Tier 2**: Develop Skills, Educate, Train, Individual, Collective, Staff, Exercise	**% Of Scout Snipers trained to advanced competency in following proper reporting procedures**	100%
17	Insufficient coordination between sniper units and higher and adjacent commands	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Fast, Resilient, Agile, Letha	Require better coordination and sharing of information between supported unit and snipers; cross-boundary and unit coordination is lacking; major deficient when trying to communicate with units such as SOF operating with different communications assets	**Tier 1**: Joint Net-Centric Operations, Joint Battlespace Awareness, Joint Command & Control **Tier 2**: Information Transport, Network Management, Develop & Maintain Shared SA & Understanding, Synchronize Execution Across All Domains	**% Of Scout Sniper units capable of communicating directly or indirectly with units operating in the same area of operations**	100%
18	Degraded ability to conduct observation	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Resilient, Agile, Lethal	Only trained and tested on observation at basic sniper course although critical as fundamental skill	**Tier 1**: Joint Force Generation **Tier 2**: Develop Skills, Train, Exercise, Mission Rehearsal Exercise	**% Of Time Enemy, Friendly Forces, or Targets are Proactively Detected**	75%
19	Insufficient ability to patrol under low light cross country	Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Fast, Agile	Limited on dark nights or areas with little to no ambient light; no depth perception	**Tier 1**: Joint Land Operations, Joint Force Generation **Tier 2**: Conduct Operational Movement & Maneuver, Equip, Acquire, Integrate	**% Of Scout Snipers able to patrol under low light cross country**	70%
20	Limited ability to defeat hardened or fortified positions with precision fire	Interoperable, Expeditionary, Adaptable/Tailorable, Precise, Lethal	.50 cal has very limited effect on hardened or fortified positions; likely solution not a rifle	**Tier 1**: Joint Land Operations, Joint Force Generation **Tier 2**: Provide and Employ Joint Fires, Equip, Acquire, Integrate	**% Of targets neutralized within threshold ranges**	85%
21	Inability to terminally control close air support	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Precise, Fast, Resilient, Agile, Lethal	Cited as necessary to conduct mission although capability will have to be built	**Tier 1**: Joint Land Operations, Joint Air Operations, Joint Battlespace Awareness, Joint Force Generation **Tier 2**: Provide and Employ Joint Fires, Tactical Air Support, Close Air Support, Access/Share Blue Force SA, Develop Skills, Train	**% Of Scout Snipers trained to an advanced competency in controlling Type III CAS**	50%
22	Lack of proficiency in calling for fire (fire support coordination, urban call for fire, calling and adjusting fire)	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Precise, Fast, Resilient, Agile, Lethal	Given basic instruction at school house, but lack resources and priority to conduct live fire training; more advanced training is totally dependent upon unit	**Tier 1**: Joint Land Operations, Joint Maritime/Littoral Operations, Joint Battlespace Awareness, Joint Command & Control, Joint Force Generation **Tier 2**: Provide and Employ Joint Fires, Maritime/Littoral Fires, Tactical Air Support (JAO), Access/Share Blue Force SA, Synchronize Execution Across All Domains, Develop Skills, Train, Mission Rehearsal Exercise	**% Of Scout Snipers trained to an advanced competency in calling for fire (fire support coordination, urban call for fire, calling and adjusting for fire).**	50%

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23	Lack career progression and retention track	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Fast, Resilient, Agile, Lethal	Problems retaining well trained snipers: senior NCO's lost to line companies as 0369's; no MOS career track; leaves no experience in platoon	**Tier 1**: Joint Command & Control, Joint Force Management, Joint Force Generation **Tier 2**: Establish/Adapt Command Structures and Enable both Global and Regional Collaboration, Organize Staff to align with mission, Planning, Future Capability Identification, Man, Recruit, Doctrine	**% of 0369's that have held 0317 MOS prior to leading a Scout Sniper platoon**	100%
24	Lack gear and equipment for calling and adjusting fires	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Precise, Fast, Resilient, Agile, Lethal	T/E does not support specialized gear for forward observation such as GPS	**Tier 1**: Joint Force Generation **Tier 2**: Equip, Acquire, Integrate	**% Of units that have the established equipment from the Scout Sniper T/E to call and adjust fires**	100%
25	Lack doctrine for sniper support of raids	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Resilient, Agile	MEU's have raid SOP, but no doctrine / SOP to support use of snipers while in support of standard battalion	**Tier 1**: Joint Land Operations, Joint Battlespace Awareness, Joint Force Generation **Tier 2**: Observation & Collection (JBA), Equip, Acquire, Integrate, Doctrine	**% Of Scout Sniper platoons that have received training in support of raids/over watch**	100%
26	Insufficient training for controlling direct fires	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Fast, Resilient, Agile, Lethal	ADDRAC and other fire commands are not trained	**Tier 1**: Joint Land Operations, Joint Battlespace Awareness, Joint Force Generation **Tier 2**: Observation & Collection (JBA), Equip, Acquire, Integrate, Doctrine, Training	**% Of Scout Snipers trained in controlling** direct fires	50%
27	Lack functional PPE (including helmet)	Knowledge Empowered, Networked, Interoperable, Expeditionary, Adaptable/Tailorable, Enduring/Persistent, Precise, Fast, Resilient, Agile, Lethal	Snipers require specialized gear and equipment to conduct missions; weight and fit of equipment (PPE) is critical to things such as firing position	**Tier 1**: Joint Command & Control, Joint Force Generation **Tier 2**: Operational Planning, Develop/Analyze/Select COA's, Doctrine, Educate, Train, Mission Rehearsal Exercise	**% Of Scout Snipers that have modular PPE equipment tailored to the established Scout Sniper T/E**	100%
28	Current T/O does not support identified scout sniper tasks	Adaptable/Tailorable, Precise, Lethal	Current Units are deploying and operating with approximately 30 personnel in various size teams pending situation	**Tier 1**: Joint Force Generation **Tier 2**: Equip, Acquire, Integrate	**% Of units operating with correct T/O for Scout Sniper operations**	100%

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