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CAPABILITY PRODUCTION DOCUMENT (CPD)
FOR
RAPID ENGAGEMENT PRECISION RIFLE (REPR)
Potential ACAT: IV (T)
Validation Authority:
Approval Authority:
Milestone Decision Authority:
Designation:
Prepared for: Milestone C Decision
Date: 18 July 2008

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EXECUTIVE SUMMARY

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

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

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

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

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

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61 The requirements set forth in this CPD ensure that operators will receive a system that provides a
62 lasting solution. Follow-on action will require a full and open testing and evaluation cycle of
63 mature commercial off-the-shelf (COTS) items that meet the performance parameters set-forth in
64 this study. COTS items for procurement will allow for an aggressive selection and fielding
65 timeline and are the preferred solution. However, it may be necessary to use a spiral
66 development plan to support meeting all objective requirements or to improve the system in
67 response to likely threats and advances in technology. To support the REPR's procurement
68 timeline and to provide a baseline for testing and evaluation of potential weapon systems, all
69 initial weapon systems submitted for contract competition must use 7.62 x 51 mm M118 LR
70 ammunition, the current M8541 Scout Sniper Day Scope (SSDS), and be capable of mounting
71 currently fielded night optics and aiming devices. REPR submissions shall also come with a
72 manufacturer supplied suppressor although procurement of the weapon will not require that the
73 supplied suppressor also be procured as a part of the system.¹ Finally, this does not exclude the
74 possibility for the selected system to incorporate new calibers, optics, and technology to obtain
75 objective standards as a part of planned spiral development.

¹ Although the REPR shall 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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176 **1. CAPABILITY DISCUSSION**

177 The United States Marine Corps (USMC) requires a Rapid Engagement Precision Rifle (REPR),
 178 to support scout sniper operations over the next decade (FY08 – FY17). The capability for scout
 179 snipers to rapidly engage multiple targets with precision is a validated joint critical need that has
 180 yet to yield a long term solution. To provide the full spectrum of scout sniper capabilities
 181 (reference: the six capability areas identified in the Marine Corps Scout Sniper Initial Capability
 182 Document (ICD)), USMC Scout Snipers require a weapon system to be procured and fielded as a
 183 program of record (POR) to replace the current MK11 MOD1 rifle. The MK11 MOD1 does not
 184 provide a long term solution to fill the capability gaps identified by the Scout Sniper ICD and
 185 was procured as a short term fix for the gap regarding precision rapid engagement of multiple
 186 targets. The procurement of the MK11 MOD1 was based on an urgent operational need until a
 187 POR could be established and no more MK11 MOD1's are currently being procured by the
 188 USMC. Once the REPR is selected for procurement, it shall be fielded in accordance with the
 189 fielding plan identified in Section 13 of this document.

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

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

- 198 • (*Lethality*) The REPR shall provide a scout sniper with the ability to precisely engage
 199 multiple targets faster and at longer ranges, while using suppressor technology for
 200 increased stealth;
- 201 • (*Precision*) The REPR shall be capable of a precision of fire of 1 minute of angle (MOA)
 202 or less out to an objective range of 1000 meters, which is beyond the capabilities of
 203 currently fielded similar weapon systems;
- 204 • (*Faster*) Semi-automatic capability with improved recoil reduction shall allow for higher
 205 rates of accurate controlled fires over current weapon systems;
- 206 • (*Resilience and Endurance*) The enhanced lethality, precision, and speed of the REPR
 207 will increase the survivability of scout sniper teams in combat, indirectly allowing for
 208 scout snipers to operate longer and more effectively;
- 209 • (*Adaptable*) The addition of the REPR to the scout sniper suite of weapons will allow
 210 scout snipers to adjust to a wider range of mission sets; and
- 211 • (*Expeditionary*) The REPR will be carried, maintained, and operated by a single scout
 212 sniper in any operating environment with more reliability than current weapon systems.

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213 **1.1. OVERVIEW OF THE CAPABILITY GAP**

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

220 Regarding currently issued scout sniper weapons, the fielded M40A3 has proven to be a reliable
221 weapon system for the Marine Corps and will continue to fill a role for scout snipers until it is
222 replaced by a new long range sniper rifle. Unfortunately, the M40A3 is not well suited for
223 combat in urban or restrictive terrain (this is discussed in more detail in Item 3 below).
224 Particular shortfalls of the M40A3 include weight, length, rate of fire, capacity, and signature.
225 To mitigate these gaps in the M40A3's capabilities, operational forces have been issued the
226 MK11 MOD1 as a part of limited, rapid fielding. The MK11 MOD1 does provide an improved
227 precision rapid engagement capability over the M40A3, but the MK11 MOD1 was procured
228 before Marine Corps' Scout Sniper capability requirements were fully identified. Further, as the
229 MK11 MOD1 was not procured as a program of record, thorough testing and evaluation of the
230 system in a full and open competition was not completed before the system was fielded.
231 Therefore, the MK11 MOD1 was not evaluated against optimal capability requirements for
232 rapidly engaging multiple targets with precision. Since then, numerous more capable COTS
233 systems have been produced by industry and all potential systems should be evaluated and tested
234 for the best long term solution. In summary, the USMC currently does not have a viable weapon
235 system to mitigate gaps associated with the ability to rapidly engage multiple targets with
236 precision per the ICD as noted below.

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

239 *Rationale: The MK11 MOD1 performed this role on a limited basis with operational units as a*
240 *means to urgently mitigate an operational gap. It was fielded to temporarily fill the Operation*
241 *Enduring Freedom (OEF)/ Operation Iraqi Freedom (OIF) need to rapidly engage targets with*
242 *precision. As a result of being procured as an urgent need and not as a program of record, the*
243 *MK11 MOD1 bypassed full testing and evaluation and was not considered a long term solution*
244 *to the Scout Sniper capability requirement. Although this method succeeded in providing a*
245 *limited capability to scout snipers currently engaged in combat operations, limited procurement*
246 *and qualitative subject matter expert (SME) / Stakeholder input has demonstrated that the MK11*
247 *MOD1 is not a satisfactory long term solution to this capability gap. Furthermore, the original*
248 *procurement objective of 180 systems, 18.2% of what would be required of a full operational*
249 *capability of 989 systems, was insufficient to meet long-term needs even if the MK11 MOD1 was*
250 *deemed suitable for continued service. Currently, MK11 MOD1s are no longer being procured*
251 *and the originally fielded systems are reaching the end of their service life and need to be*
252 *replaced. As this critical capability is at risk of shortfall, the Marine Corps needs to procure a*
253 *system as a program of record or risk a significant degradation in scout sniper capabilities.*

254 **(2) Inability to rapidly engage multiple targets with precision**

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255 *Rationale: Scout Snipers require the capability to rapidly engage multiple limited exposure*
256 *targets at varying ranges. As a single-shot bolt action weapon, the currently issued M40A3 has*
257 *neither the rate of fire nor the magazine capacity to effectively engage the enemy in this situation*
258 *without a substantial risk of allowing the enemy to either escape or counter-attack. This risk is*
259 *exacerbated in the urban environment where the target can often be identified and engaged only*
260 *at close range, substantially increasing the risk that scout sniper teams could be overwhelmed by*
261 *a larger enemy force with automatic weapons. Furthermore, rapid engagement must be precise.*
262 *Although the MK11 MOD1 provides a comparable rate of fire to the REPR, the current*
263 *capability does not meet broader system requirements. It is essential in missions such as*
264 *counter-sniper to deliver precise, lethal effects on the enemy target upon the initial engagement.*
265 *Also, in irregular warfare (IW) operations, collateral damage or the inadvertent wounding or*
266 *killing of non-combatants could undermine an entire operation and is not an acceptable risk.*
267 *Missions requiring this validated requirement include: engaging combatants dispersed*
268 *throughout crowds of non-combatants; multiple enemy targets engaging advancing friendly*
269 *forces (overwatch); ambushes and defending against ambushes; breaking contact by fire;*
270 *engaging sentries on a raid site; hostage rescues; stopping suicide attackers; and disabling*
271 *vehicles or other materiel that typically require multiple hits to effectively destroy or neutralize.*
272 *This gap poses a critical risk across all (6) scout sniper capabilities identified in the Scout*
273 *Sniper ICD and is the primary reason for this Capability Production Document (CPD).*

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

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

284 **(4) Limited ability to operate without being identified as a “sniper”**

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

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298 of particular importance in close, urban combat where the flash and sound of a gunshot is more
 299 likely to draw an immediate and potentially lethal response against a compromised scout sniper
 300 team. The MK11 MOD1 does present a more survivable "M-16" like signature, thus minimizing
 301 scout sniper identification, but still falls short of requirements as it does not allow for compact
 302 storage in a pack. The failure to have a concealable or less noticeable sniper rifle with the
 303 ability to stealthily engage targets ultimately degrades the ability to conduct all six scout sniper
 304 capabilities identified in the Scout Sniper ICD and puts scout snipers in particular danger in an
 305 urban fight.

306 **1.2. CAPABILITY LINKAGE TO JOINT CAPABILITY AREAS**

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

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

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

318 **Table 1. Key JCAs**

Tier 1 JCA	Tier 2 JCA	Tier 3 JCA	Scout sniper capability(s)	REPR Impact
Force Application	Engagement	Kinetic	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> The ability to effectively engage personnel with precision The ability to conduct surveillance. The ability to conduct patrols 	<ul style="list-style-type: none"> Greater persistence allows more time for surveillance Lighter system allows for greater field endurance

319
 320 **1.3. OPERATIONAL EMPLOYMENT**

321 Although REPR employment tactics, techniques, and procedures will ultimately be determined
 322 by each specific mission, the system is envisioned to be employed by both Marines and possibly

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323 SOF across the full ROMO in all mission environments. The REPR is a man-portable system
324 that shall not degrade a scout sniper's ability to move throughout the operational environment.
325 The REPR is not a part of a family of systems (FoS) or system of systems (SoS), but shall
326 complement other current organic scout sniper weapon systems such as the M40A3. The REPR
327 shall also complement future planned scout sniper weapon systems such as the M40A3's planned
328 replacement, the Long Range Sniper Rifle. The REPR can be used as either a stand alone sniper
329 weapon or as an augment to the M40A3's slower bolt action system when multiple targets are
330 identified and require rapid engagement. This REPR shall also act as a defensive weapon for
331 close quarters combat (CQC), removing the need to carry a secondary defensive weapon.
332 Finally, as demonstrated in OEF and OIF, the REPR shall provide a critical capability to scout
333 snipers especially in combat operations involving urban and restrictive terrain.

334 2. ANALYSIS SUMMARY

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

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

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

361 Currently, Marine Corps' scout snipers employ an M40A3 bolt action rifle. Scout sniper units
362 deployed to OIF or OEF may also be issued the MK11 MOD1 when available to augment the
363 M40A3. The table below illustrates some of the major specifications on those systems compared
364 to the REPR.

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Table 2. System Specifications

Weapon System	M40A3	MK11 MOD1	REPR
Weight Fully Loaded	18.5 lb	18.29 lb	17 lb threshold
Overall Length	44.25 in	44 in	40 in threshold
Barrel Length	24 in	24 in	20 in threshold
Barrel Life	Estimated 8-10,000 rounds	Estimated 5,000 rounds	10,000+ round threshold
Cost per system	\$6,335	\$10, 891	≤ \$8,934
Caliber	7.62 x 51 mm NATO	7.62 x 51 mm NATO	7.62 x 51 mm NATO with caliber agility
Action	Bolt-action	Semi-automatic gas operated	Semi-automatic system
Effective Range	1000 yd	800 meters	800 meters (Threshold) and 1000 meters (Objective)
Rate of Fire	5 rounds per minute	12-15 rounds per minute sustained	20 rounds per minute sustained
Capacity	5 round internal box magazine (10 with mod)	20 round detachable magazine	Detachable magazine (threshold of 20 rounds)

366

367 The following general requirements and attributes shall be incorporated into the REPR to
 368 provide the Marine Corps with a long-term, optimized platform to replace the MK11 MOD1
 369 (note that the M40A3 is planned to be replaced by the Long Range Sniper Rifle, which shall
 370 mitigate identified scout sniper capability gaps in extreme long range precision and lethality that
 371 the REPR is neither intended to mitigate, nor technologically feasible of performing). Foremost,
 372 the REPR shall provide the ability to rapidly engage multiple targets with precision out to an
 373 objective range of 1000 meters in accordance with the task, standards, and conditions identified
 374 during the Scout Sniper CBA. The weapon system shall do this in an operationally reliable
 375 package that reduces overall cost and weight per item, increases engagement range, reduces
 376 barrel length, and extends barrel life as compared to the MK11 MOD1. The system must allow
 377 for rapid reloading and target acquisition, incorporate acoustic and flash suppression, incorporate
 378 commonly accepted U.S. military assault rifle characteristics, fully support ambidextrous
 379 operation, use current compatible scout sniper optics and weapon accessories, allow for unit
 380 level maintenance, and be 100% interchangeable. The entire system shall also include all
 381 necessary ancillary devices.

382 The need for a REPR is also supported by the Marine Expeditionary Rifle Squad (MERS) ICD in
 383 addition to various UNS relating to scout sniper activities, OEF and OIF After Action Reports,
 384 studies conducted by the Marine Corps Center for Lessons Learned (MCCLL), and Joint and
 385 U.S. Army studies. The following list of documents is not exhaustive, but represents some of the
 386 primary references supporting the need for a REPR, especially as it relates to improved scout
 387 sniper capability:

- 388 • Scout Sniper ICD, MROC Approved April 14, 2008. Findings: Critical gaps exist in
 389 scout snipers' ability to rapidly engage multiple targets with precision, especially at long
 390 ranges. The gap becomes more critical in an urban environment. The ICD also
 391 establishes threshold and objective standards for task execution that can be directly
 392 translated to Key Performance Parameters (KPPs) and additional attributes. [Note: Will
 393 be included for reference]

- 394 • MERS ICD, Draft 2, 15 June 2007. Findings: Need for scout sniper capabilities are
395 critical to successful infantry operations.
- 396 • MCCLL: Non-Kinetic / Counterinsurgency Operations, A Study in Command, March
397 2006. Findings: Scout sniper capabilities play a critical role in counterinsurgency
398 (COIN) operations and require adequate / improved equipment to successfully support
399 COIN.
- 400 • Joint Urban Ops Joint Integrating Concept (JIC), Version 1.0, 23 July 2007. Concept:
401 Identifies the need for a scout sniper capability to be employed in an urban environment
402 to support operations. Implies that rapid engagement of multiple targets and at various
403 ranges will be commonplace.
- 404 • MCCLL: Scout Sniper Employment Lessons Learned Conference, 22 December 2006.
405 Findings: Need for precision semi-automatic capability critical to successful scout sniper
406 operations.
- 407 • MCCLL: Sniper / Counter Sniper Operations, Lessons and Observations, January-April
408 2007, OIF 05-07. Findings: Support need for precision semi-automatic rifle.
- 409 • MCCLL: Semi-Automatic Sniper Rifle, 1 March 2005. Findings: Specifically addresses
410 need for employment of a semi-automatic sniper rifle with scout snipers.
- 411 • Mk 11 UNS for Semi-Automatic Sniper Rifle, Combat Tracking System # 05076UB,
412 signed 15 August 2005. Findings: Initial attempt to fill the gap for a semi-automatic
413 sniper rifle in on-going combat operations.
- 414 • Soldier Weapons Assessment Team After Action Report, July 2003. Findings: This
415 assessment of small arms capabilities in OIF highlighted the need for a semi-automatic-
416 capable sniper weapon for use in the urban environment.
- 417 • Small Arms Technology Assessment, Individual Infantryman's Weapon Vol. I., 1990.
418 Findings: Establishes the maximum effects of kinetic effect (KE) rifles and evaluates
419 additional effects of target acquisition and engagement techniques; recognizes that the
420 majority of small arms targets are moving and only visible for a limited time, which
421 supports the need for immediate shot follow-up capability.
- 422 • CPD for Semi-Automatic Sniper System, United States Army Integration Center, version
423 4, 26 April 2006. Findings: Validates need for semi-automatic sniper rifle and identifies
424 key Army requirements and attributes.
- 425 • Men Make the City: Joint Urban Operations Observations and Insights from Afghanistan
426 and Iraq, RAND report for Joint Forces Command, April 2004. Identifies that urban
427 sniper capability was critical to provide high precision lethality with low possibility of
428 collateral damage.

429 **3. CONCEPT OF OPERATIONS SUMMARY**

430 The REPR shall be one of a suite of weapons (that include at least a precision long range sniper
431 rifle and an anti-materiel weapon) in the scout sniper table of equipment used to support the six

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432 scout sniper capability areas identified in the Scout Sniper ICD. Specifically, the REPR shall
433 provide a single weapon system that bridges the gap between short range and long range
434 precision engagement while still providing a reliable semi-automatic capability. For example,
435 using the current issue adjustable power M8541 Scout Sniper Day Scope (SSDS) a scout sniper
436 can set his scope for a wide field of view and rapidly engage targets at close ranges (less than
437 300 meters) as seen in the urban areas of Iraq or set the scope at a higher power and engage long
438 range targets (up to 1000 meters) as seen in the mountains of Afghanistan. This system also
439 shall allow for engagement of one or more targets in rapid succession allowing for engagement
440 of enemy groups that previously may have been bypassed by a scout sniper team for fear of
441 being overwhelmed. The REPR shall be employed by both Marines and SOF across the full
442 ROMO in all mission environments as a primary scout sniper weapon. The REPR is a man
443 portable system that is not a part of a FoS or SoS, but shall complement other organic systems
444 such as the M40A3 in a suite of scout sniper weapons that allow for the scout sniper to choose
445 the right tool (weapon) for the mission. To this effect, the REPR shall also complement the
446 M40A3's planned replacement, the Long Range Sniper Rifle². The REPR can be used as either a
447 stand alone sniper weapon or to augment the M40A3's slower bolt action system when multiple
448 targets are identified and require rapid engagement. This weapon also shall act as a defensive
449 weapon for CQC, removing the need to carry a secondary defensive weapon. As demonstrated
450 in OEF and OIF, the REPR shall provide a required operational need especially in combat
451 operations involving urban or restrictive terrain.

452 3.1. CONCEPT OF EMPLOYMENT

453 The REPR will be employed across the ROMO, however, its desired attributes are best
454 illustrated and tested in a MOUT Scenario due to the complexities involved in this type of
455 employment. The REPR's ability to blend with other organic infantry weapons, its compactness,
456 its rapid fire capability, and its ability to transition quickly from engaging short range targets
457 (less than 300 meters) to long range targets (800+ meters) with precision are critical attributes
458 that MOUT will require.
459

460 In the MOUT scenario, the scout sniper team will use the REPR during operations in support of
461 the Infantry. Upon vehicle insertion with an infantry unit conducting a 6 hour security patrol, the
462 team will establish a position to conduct observation and surveillance as well as provide direct
463 fire as required. Upon completion, the scout sniper team will link up with the supported unit and
464 patrol via foot back to their forward operating base.
465

466 The mission will begin in the pre-dawn darkness and end during full daylight. To complete the
467 mission, the scout sniper team will operate from both ground and elevated firing positions inside
468 and outside of structures. During the mission, the scout sniper team will employ precision direct
469 fire against multiple stationary and moving targets at various ranges between 300 and 1000
470 meters. Upon extraction, the team will move to a link-up point. During this movement the team
471 will have the ability to use the REPR as a primary weapon in a restrictive environment, which
472 includes rapid fire engagement of multiple targets and breaking contact by fire. After link-up

² The Long Range Sniper Rifle, which shall 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.

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473 with the infantry squad, the scout sniper team will patrol back to base where they will be
474 employed in overwatch and counter-sniper roles. The mission is completed after the unit re-
475 enters friendly lines.

476
477 **3.2. LINKAGE TO FUTURE MARINE CORPS' CONCEPTS**

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

486 Specific to the Marine Corps, the scout sniper capability shall support Marine Corps' concepts as
487 outlined in the *Marine Corps Operating Concepts for a Changing Security Environment* (also
488 known as the *Gray Book*). The *Gray Book* translates broad guidance and direction received from
489 the Commandant of the Marine Corps, relating how the Marine Corps will operate in the future
490 into a draft family of Marine Corps-specific operating concepts. This document provides the
491 conceptual and foundational underpinnings for the development and refinement of required
492 capabilities, and describes how Marine Corps forces will be organized, based, trained and
493 equipped to perform their critical missions.

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

504 **3.3. LINKAGE TO JOINT OPERATING CONCEPTS**

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

511 During MCOs, the scout sniper capability contributes directly to achieving both tactical and
512 operational level objectives. By providing a rapidly projectable expeditionary force capable of
513 employing integrated fires, long range communications, and stealth, the scout sniper capability is
514 a key component in conducting distributed operations (DO). When leveraged properly, the

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515 capability provides a commander with a powerful force multiplier that can isolate,
516 psychologically demoralize, and ultimately defeat enemy nodes of resistance wherever they are
517 encountered on the battlefield.

518 By fielding the REPR, the Marine Corps' scout sniper capability would be enhanced, making a
519 direct, positive impact on MCOs. Specifically, the MCO JOC expresses a need for the capability
520 to increase force survivability through the use of speed, lethality, and the ability to apply force
521 from standoff distances (3.C.11). Although this statement is directed at the greater operational
522 level concerning maneuver and is the rationale for force generation of expeditionary cornerstones
523 such as the MV-22 Osprey and the EFV, this same concept still applies to scout snipers at the
524 tactical level. Thus, the REPR, with the ability to rapidly engage multiple targets with precision
525 from a concealed location 1000 meters from an unaware enemy, is a critical capability
526 improvement in the speed, lethality, and standoff range of scout sniper capability. The MCO
527 JOC also articulates the need for a capability to "empower commanders to conduct flexible and
528 responsive operations at every useful level, to include... maneuver and precision engagement
529 operations..." (4.C.6) The scout sniper capability embodies this by providing a force that is
530 rapidly available, easily projected, tailored to support a wide range of missions, able to maneuver
531 undetected, and able to precisely engage targets with speed and lethality. The REPR would
532 directly impact the ability to precisely engage targets via its enhanced firepower and indirectly
533 enable the greater capability through enhanced survivability. Finally, the MCO JOC requires
534 that the DOD "field capabilities to maintain adaptive force dominance" and maintain "service
535 collective, unit competencies." (3.B.5) The REPR would allow scout snipers to adapt to more
536 operational environments while still maintaining force dominance.

537 Though the scout sniper may tactically conduct more missions during MCOs, the full value of
538 the scout sniper's precision is witnessed in IW and SSTR operations. Precision takes on a
539 greater role in IW and SSTR operations because of the need to engage enemy forces while
540 minimizing collateral damage (IW Task 0.7-026C, conduct lethal strike). This is necessary to
541 prevent alienation of the local populace while attempting to provide security for them. IW task
542 0.7-023C (control significant land areas) addresses this. Furthermore, the order of magnitude in
543 damage potentially caused to the overall operational and even strategic success of the campaign
544 by collateral damage is substantially higher than during MCOs as IW and SSTR add an
545 inherently political nature to the battle. Thus, increasing the precision of the scout sniper
546 capability while improving lethality mutually enhances scout sniper capabilities and the ability to
547 conduct IW or SSTR operations. Although the scout sniper capability has wide applicability
548 across multiple JOCs, its greatest resonance is with MCOs, IW, and SSTR.

549 4. THREAT SUMMARY

550 4.1. THREATS TO BE COUNTERED

551 Sniper rifles continue to evolve with increases in both range and lethality at a given distance due
552 to: caliber increases, improvements in optics, other supporting equipment (such as range finders
553 and mini-weather stations enabling better estimation of conditions and allowing for better shot
554 placement), and ammunition improvements for sniping or precision use in all calibers. Within
555 the next ten years, anti-materiel rifles will become increasingly common. Within urban areas,
556 maneuver space and potential areas for staging an assault on enemy-held fortifications and
557 facilities will be limited. The number of armies using body armor worldwide is steadily

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558 increasing and will continue to increase over the next ten years. Body armor that is viable
559 against current ball 7.62mm North Atlantic Treaty Organization (NATO) rifle ammunition is
560 commercially available from various sources. Unconventional forces may also use body armor
561 to reduce the effectiveness of US weapons as the number of countries producing and
562 proliferating body armor increases. Sniper and shot detection systems are available from
563 multiple commercial sources and are being heavily marketed to the US and other countries.
564 These are advertised for both force protection and anti-crime use but are readily adapted to
565 military combat operations as is the case in Iraq.

566 4.2. PROJECTED THREAT ENVIRONMENT

567 It is anticipated that urbanization will continue on a worldwide scale with an increased
568 probability of Marines being deployed to fight in urban terrain. There will also be a continued
569 need to engage enemy forces in more open environments, such as mountains and deserts.
570 Engagements will also occur in various natural areas such as jungles, forests, plains and
571 savannas. Dense urban areas often have large open areas such as industrial areas, parks,
572 cemeteries, transportation hubs (rail, air or port facilities) that may present opportunities to
573 engage at great distances. Engagement distance can be expected to vary greatly in these
574 environments. The capability to engage targets behind cover in these varying environs will
575 require enhanced accuracy and penetration capability or the ability to select rounds able to
576 penetrate cover and reach targets. Recent operational experience bears this out, as hostile forces
577 used hardened vehicles and improved positions to engage US and allied forces during combat
578 operations. The second battle of Fallujah and Operation Anaconda illustrate the use of hardened
579 positions to engage US and allied forces. The enemy uses the lessons learned from these events
580 and other events such as Chechnya to develop updated tactics, techniques, and procedures (TTP)
581 to use as part of their defensive and offensive tactics.

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

585 4.3. RANGE OF THREATS

586 This availability of a wide variety of weapons to state and non-state actors presents a threat to
587 snipers beyond sniper-on-sniper capability. Weapons such as rocket-propelled grenades (RPGs),
588 antitank guided missiles (ATGMs), heavy machine guns, antiaircraft guns, medium cannon and
589 antitank guns all present a threat to snipers as they can be used to target compromised or
590 suspected team locations with volume of fire techniques or precision fires from near to far
591 ranges. An example of this was the use of ATGMs as portable artillery by Hizballah against
592 Israeli forces sheltering in buildings during the summer of 2006 in Lebanon. The threats to be
593 countered by USMC Scout/Snipers are hostile snipers and armed land forces operating in a wide
594 variety of environments. The ability to engage fleeting and often multiple targets in these
595 environs require the capability of rapid engagement of multiple targets. Increasingly, the
596 potential threat operates as small teams even for sniping operations, meaning multiple targets are
597 usually present during any engagement. The threat remains highly adaptive and is armed with
598 increasingly more capable weapons systems. US snipers are a high payoff target for opposition
599 forces, and the adversary’s ability to overwhelm or overrun a compromised scout sniper team
600 operating in a remote environment is often due to sheer volume of fire. Thus, the ability to

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601 provide better rapid engagement across the entire range spectrum is critical. Increasingly,
 602 terrorist groups are cross training as seen by migration of TTPs from one area to another by
 603 related and unrelated groups.

604 **4.4. VALIDATED THREAT REFERENCES**

605 This analysis was made using the:

- 606 • Volume IV Land Warfare Capstone Threat Assessment: Foreign Infantry Weapons
 607 (NGIC-1121-0011-07, October 2007)
- 608 • Volume VI Land Warfare Capstone Threat Assessment: The Future Operational Threat
 609 Environment (NGIC -1121-0011-07, October 2007);
- 610 • Volume VII Land Warfare Capstone Threat Assessment: Technically Feasible Threats
 611 (Body Armor) (NGIC-1121-0011-07, October 2007)
- 612 • Marine Corps Midrange Threat Estimate: 2005-2015, published by the Marine Corps
 613 Intelligence Agency (MCIA) in August 2005 (MCIA-1586-001-05); and
- 614 • “The Urban Century”, MCIA-1586-003-97, November 1997.

615 A classified annex is also being prepared for this product.

616 **5. PROGRAM SUMMARY**

617 The Scout Sniper ICD, validated by the Marine Requirements Oversight Council (MROC) in
 618 March 2008, identified an operational gap and recommended a materiel solution in the form of a
 619 semi-automatic weapon capable of precision engagement at long range. Mature technology
 620 allows for the Marine Corps to test and field a COTS NDI semi-automatic weapon system by the
 621 most expedient and cost effective means possible to meet required needs while minimizing
 622 developmental activity.

623 The requirements set forth in this CPD ensure that operators shall receive the optimal system to
 624 provide a lasting solution. Follow-on action shall require a full and open testing and evaluation
 625 cycle of mature COTS items that meet the performance parameters set-forth in this study. COTS
 626 items for procurement will allow for an aggressive selection and fielding timeline and are the
 627 preferred solution. However, it maybe necessary to use a spiral development plan to support
 628 meeting all objective requirements with one system or to improve the system in response to
 629 likely threats and advances in technology. Finally, to support the REPR’s procurement timeline
 630 and to provide a baseline for testing and evaluation of potential weapon systems, all initial
 631 weapon systems submitted for contract competition shall come with a manufacturer supplied
 632 suppressor³, be chambered to fire 7.62 x 51 mm ammunition, and be capable of mounting
 633 currently fielded day/night optics and aiming devices. The current M8541 SSDS will be the day
 634 optic used on all systems. This does not exclude the possibility for the selected system to
 635 incorporate new calibers, optics, and technology to obtain objective standards as a part of
 636 planned spiral development.

³ Although the REPR shall 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.

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

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

645 Marine Corps Systems Command shall develop an acquisition strategy to acquire this materiel
646 solution.

647 **6. SYSTEM CAPABILITIES REQUIRED FOR CURRENT INCREMENT**

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

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

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

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

657

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

663

664 (a) KSA. *Materiel Reliability*: The REPR with magazine, M8541 Scout Sniper Day
665 Scope, and a manufacturer supplied suppressor⁵ shall have a Mean Rounds Between
666 Essential Function Failure (MRBEFF) of 10,000 rounds for Class III malfunctions,
667 5,000 rounds for Class II malfunctions, and 1,000 rounds for Class I malfunctions
668 (Threshold). The REPR shall have a MRBEFF of 15,000 rounds for Class III
669 malfunctions, 10,000 rounds for Class II malfunctions, and 2,000 rounds for Class I
670 malfunctions (Objective). All tests shall be conducted with 7.62 x 51 mm M118 long
671 range ammunition.

672

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

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.

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

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677

Table 3. Materiel Reliability Standards

Failure Class	MRBEFF
I (MRBF)	1,000 (T) / 2,000 (O)
II (MRBF)	5000 (T) / 10000 (O)
III (MRBF)*	10,000 (T) / 15,000 (O)

678

* No broken parts causing weapon to cease function.

679

Failure Classification:

680
681

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

682
683
684

Class II: A failure that may be clearable/correctable by the operator 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.

685
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Class III: A failure of a severe nature. The failure; (1) is correctable by the operator 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.

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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 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 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.

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700
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702

(b) KSA. O&M Cost⁶: Operations and maintenance costs shall not exceed \$4,968,661 over the lifecycle of the weapon system⁷ (Objective). \$6,853,566 (Threshold). The main cost drivers are sustainment overhauls to replace the upper assemblies.

703
704
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709

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.

⁶ All dollars are base year 2008.

⁷ Weapon lifecycle is projected to be 10 years

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710 (4) KPP. *Compatibility*: The REPR shall not degrade or interfere with the ability to
 711 employ or operate with equipment currently fielded and shall use existing sniper optics
 712 and weapon accessories. The REPR shall use 7.62 x 51 mm M118 long range
 713 ammunition in the initially fielded system (Threshold). The REPR shall possess caliber
 714 agility with a minimum of exchanged parts (Objective).
 715

716 **Rationale:** *This system must allow for use while wearing protective equipment such as a helmet,
 717 body armor, gloves (including cold weather), field protective mask (including full MOPP IV over
 718 garments), and eye protection. Furthermore, it should be compatible for storage and transport
 719 in all standard ground, air, and sea platforms. All items must fully integrate with what the
 720 operator is using when operating in combat. Use of current ancillary equipment, ammunition,
 721 and other fielded items should be used whenever appropriate to reduce costs while not creating
 722 additional logistical stress.*
 723

724 (5) KPP. The *Net Ready* KPP does not apply to this system since it has no network
 725 capable equipment and does not interface with any joint critical operational activities.
 726

727 (6) KPP. *Rifle/Action*: The REPR shall have a detachable magazine-fed, semi-automatic
 728 operating system that incorporates technology that maximizes reliability, precision, and
 729 service life. The weapon system shall allow for fully ambidextrous operation (Threshold
 730 = Objective).
 731

732 **Rationale:** *The REPR provides the operational capability of a sniping and fighting system and
 733 addresses the shortcomings in rate of fire of the existing M40A3 sniper rifle. A semi-automatic
 734 capability provides for a sustained rate of fire that exceeds that of the M40A3 and allows the
 735 sniper to "stay on the scope/stay on the gun" to rapidly engage multiple targets. The semi-
 736 automatic capability also allows for rapid, multiple follow-on shots against moving/fleeting
 737 personnel and light skinned vehicles. Inherent to this shall be the use of technology that
 738 maximizes the reliability, precision, and service life of the system throughout the design and
 739 manufacture of the entire weapon system. Finally, the ability for left and right handed shooters
 740 to operate the weapon system is critical for the safe and effective universal application of the
 741 weapon system.*
 742

743 (7) KPP. *Precision*: The REPR⁸ shall provide a precision of fire ≤ 1.0 Minute of
 744 Angle (MOA) out to 800 meters (Threshold) 1000 meters (Objective) when fired from
 745 an accuracy fixture in nominal conditions unsuppressed.
 746

747 **Rationale:** *The purpose of acquiring a new sniper system is to provide the capability to rapidly
 748 engage and eliminate personnel targets at 800-1000 meters with precision. This is necessary to
 749 meet both operational demands and to complement the 914 meter effective range of the M40A3.*

⁸ 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 (provided by the government that will ensure that the ammunition lot holds at no more than 1 MOA), 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 other technological innovations to meet or exceed objective standards as a part of planned spiral development.

750 *In Irregular Warfare type scenarios this is especially important because precision engagement*
 751 *and quick kills against multiple targets are critical as collateral damage from an errant shot*
 752 *(friendly or enemy) can pose an unacceptable operational risk. Mitigating operational risk due*
 753 *to degraded precision is the primary factor why this weapon must continue to perform to*
 754 *standard even when firing at the sustained rate.⁹ After action reviews (AARs) regarding OIF*
 755 *and OEF reinforce the 300 – 1000 meter distances (although frequently closer in urban terrain)*
 756 *as well as the array of targets on a multi-shot, multi-kill battlefield. Although REPR cold barrel,*
 757 *first shot kills shall be possible (weapon, ammo selection, range, wind, environment, target*
 758 *disposition and shooter skill influenced), personnel targets are engaged/re-engaged until*
 759 *eliminated. Thus, the more accurately shots can be placed on target, the more likely it is to*
 760 *achieve first round kills. Still, sniper teams can plan/expect to expend 1 to 2 rounds of*
 761 *ammunition per target engagement especially when attacking multiple fleeting targets. Input*
 762 *from the Marine Corps Scout Sniper ICD, supported by the Tri-MEF UUNS, supports this*
 763 *requirement as an operational need. Additionally, the requirement is supported by input from*
 764 *the Marine Corps Center for Lessons Learned and the Marine Corps Scout Sniper School.*
 765

766 (8) KPP. Rate of Fire: The REPR shall be capable of maintaining precision fire in
 767 semi-automatic mode of ≤ 1.0 MOA for 20 shots in one minute (Threshold = Objective).
 768

769 **Rationale:** *The need to rapidly engage targets with precision has been identified in numerous*
 770 *OEF and OIF AARs especially in the urban or restrictive environment where multiple targets*
 771 *offer only a very limited time to engage and may suddenly appear at close range. Furthermore,*
 772 *rapid target destruction in both offensive and defensive scenarios allows for rapid sniper team*
 773 *displacement and disengagement thus enhancing sniper team survivability. The rate of fire is set*
 774 *at 20 rounds per minute based on capability need, industry’s current standards, and the current*
 775 *capability of the primary infantry fire team weapon, the M16A4. Finally, the Marine Corps*
 776 *Scout Sniper ICD validated this requirement as a critical component of capability generation for*
 777 *scout snipers.*
 778

779 (9) KPP. Training: Current USMC ranges used for scout sniper marksmanship training
 780 shall be able to fully support REPR live fire training (Threshold). Marines shall also be able to
 781 conduct REPR training with the Indoor Simulated Marksmanship Trainer (ISMT) or other virtual
 782 trainer (Objective).
 783

784 **Rationale:** *The need to quickly incorporate the REPR into the scout sniper suite of weapons*
 785 *requires that it have minimal training impact on current facilities and organization. Analysis*
 786 *shows that current ranges used to support training with the M40A3 sniper rifle will be*
 787 *compatible with the REPR. Organizationally, TECOM and the scout sniper school house have*
 788 *adapted the POI to accommodate training on a similar system, the MK11 MOD1, and are*
 789 *prepared to fully accommodate training with the REPR. For low cost sustainment training, the*
 790 *REPR must also be compatible with training simulators used by the USMC such as the ISMT.*
 791

792 **Table 4. Key Performance Parameter**

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

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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)
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 sniper optics and weapon accessories. The REPR shall use 7.62 x 51 mm M118 long range ammunition in the initially fielded system. (T)	The REPR shall possess caliber agility with a minimum of exchanged parts. (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 ≤ 1.0 MOA at 800 meters when fired from an accuracy fixture in nominal conditions unsuppressed (see footnote #8). (T)	The REPR shall provide a precision of fire ≤ 1.0 MOA at 1000 meters when fired from an accuracy fixture in nominal conditions unsuppressed (see footnote #8). (O)
Precise, Lethal	KPP 8 Rate of Fire	The REPR shall be capable of maintaining precision fire in semi-automatic mode of ≤ 1.0 MOA for 20 shots in one minute (T = O).	(T = O)
Interoperable	KPP 9 Training	Current USMC ranges used for scout sniper marksmanship training shall be able to fully support REPR live fire training. (T)	Marines shall also be able to conduct REPR training with the Indoor Simulated Marksmanship Trainer (ISMT) or other virtual trainer. (O)

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Table 5. 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 10,000 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 shall 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 15,000 rounds for Class III malfunctions, 10,000 rounds for Class II malfunctions, and 2,000 rounds for Class I malfunctions. All tests shall be conducted with 7.62 x 51 mm M118 long range ammunition. (O)
Adaptable/Tailorable, Enduring	KSA 2 O&M Cost	Operations and maintenance cost is projected to be \$6,853,566 over the lifecycle of the weapon system. (T)	Operations and maintenance cost is projected to be \$4,968,661 over the lifecycle of the weapon system. (O)

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6.1. ADDITIONAL PERFORMANCE ATTRIBUTES

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

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Table 6. Additional Performance Attributes

Attribute	Production Threshold	Production Objective
Durable Protective Materiel (coatings)	The REPR with suppressor and magazines shall be corrosion, abrasion, impact, wear, and chemical resistant. (T)	The REPR shall incorporate self-lubricating materiel that does not require grease or lubricants for the operating components. (O)
Cleaning / Lubricating Materiel	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 (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, 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 have a dull finish, 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-STD-585, color 30118 or coyote. (O)
System Ruggedness	The system (weapon, optic, magazine, and suppressor) shall withstand the shock of being	(T = O).

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Attribute	Production Threshold	Production Objective
	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. (T = O).	
Weight	Weight with scope, sling, bipod, suppressor, and magazine loaded with 20 rounds shall be 17 pounds or less. (T)	Weight with scope, sling, bipod, suppressor, and magazine loaded with 20 rounds shall be 11 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 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 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 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)
Barrel Life	≥810,000 rounds. Barrel must maintain precision of 1.0 MOA or less. (T)	≥ 15,000 rounds. Barrel must maintain precision of 1.0 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 shall not exceed 4 pounds. (T)	The REPR's trigger pull shall be operator adjustable and not require additional maintenance and inspections beyond routine operational level requirements. (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 meters. 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 meters. 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 meters 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 meters 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 shall be capable of engaging 3 E-Type Silhouette targets (modified for MCMP	The REPR shall be capable of engaging 3 E-Type Silhouette targets (modified for MCMP

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Attribute	Production Threshold	Production Objective
	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)	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 only allows the weapon to be fired when the trigger is depressed and the safety is in the fire position. The 5 th to 95 th 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 shall have a tactile signature to the operator with minimal audible signature. (T)	The REPR shall have a safety mechanism that only allows the weapon to be fired when the trigger is depressed and the safety is in the fire position. The 5 th to 95 th 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 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 shall reduce audible signal no less than 24db. 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 1.0 MOA. The sound/flash suppressor shall add no more than 10 inches to the length of the REPR. 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. (T)	The REPR shall have a precision fire, high decibel reduction, quick disconnect sound suppressor that shall reduce audible signal no less than 35db. Accuracy should not be affected by a deviation greater than or equal to a 1.0 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. 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. (O)
Optics	The REPR shall be compatible with all current scout sniper optics and utilize the M8541 SSDS. (T = O)	(T = O)
Magazine	The REPR shall use a 20 round magazine that does not require special tools to load. 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 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 MIL-STD 1913 quad forward rail system that is integral to the upper receiver. The 12, 3, and 9 o'clock rails must be capable of maintaining sight zeros while conducting routine firing combined with combat movement and operational training drills. (T)	The top rail shall have a 30-minute depreciation to allow for increased usable range of SSDS. (O)
Ergonomic Enhancements	The REPR shall have an adjustable stock and cheek-piece that shall accommodate shooter	The REPR shall have a folding/locking stock. The buttstock when folded shall not interfere

Attribute	Production Threshold	Production Objective
	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)	with the operation of the weapon. The stock shall be adjustable and have an adjustable cheek-piece that shall 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)

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(1) *Durable Protective Materiel:* The REPR with suppressor and magazines shall be corrosion, abrasion, impact, wear, and chemical resistant (T). The REPR shall incorporate self-lubricating materiel that does not require grease or lubricants for the operating 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 Materiel:* 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 (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 have a dull finish 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-STD-595, color 30118 or coyote (O).

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

842
 843 (4) **System Ruggedness:** *The system (weapon, optic, magazine, and suppressor) shall*
 844 *withstand the shock of being dropped by the user or of being dropped from a stationary*
 845 *vehicle at 1.7 meters onto a concrete surface, the shock from a user performing*
 846 *individual movement techniques in combat, and the vibrations of being transported in*
 847 *standard military aircraft and ground vehicles. The REPR shall perform reliably in High*
 848 *Temperature - 160° F, Low Temperature - minus 25° F, Salt Fog, Sand and Dust,*
 849 *Icing/Freezing Rain, and after immersion in mud. (T = O).*

850
 851 **Rationale:** *The REPR must remain functional in the full range of environments and conditions*
 852 *in which the scout sniper can be expected to perform his mission. The threshold drop is based*
 853 *on the bed height of a Medium Tactical Vehicle Replacement (MTVR). Further, Marines and*
 854 *SOF will operate in littoral environments where the likelihood of being submerged in saltwater*
 855 *is substantially high. It is imperative for operational success that the weapon and associated*
 856 *parts be able to function in ship to shore operations where sustained submersion of the weapon*
 857 *system is likely. These requirements for system ruggedness reflect the standards established for*
 858 *the Marine Corps Infantry Automatic Rifle, the Army Semi-Automatic Sniper System, and SOF's*
 859 *Precision Sniper Rifle.*

860
 861 (5) **Weight:** *Weight with scope, sling, bipod, suppressor, and magazine loaded with 20*
 862 *rounds shall be 17 pounds or less. (T) 11 pounds or less. (O)*

863
 864 **Rationale:** *The REPR weight shall not be a detriment to the scout sniper's individual mobility.*
 865 *The threshold weight is a balance between industry standards of weapons advertised to have*
 866 *capabilities similar to the REPR and the US Army Research Laboratory studies demonstrating*
 867 *that individual weapon weights in excess of 12.5 pounds impact the individuals ability to employ*
 868 *the weapon effectively.*

869
 870 (6) **Length:** *The REPR without suppressor shall measure less than 40 inches in length*
 871 *with the buttstock extended to a Length of Pull of 13.5 inches (or the closest adjustable*
 872 *position greater than 13.5 inches). (T) The REPR without suppressor shall measure 36*
 873 *inches in length or less with the buttstock extended to a Length of Pull of 13.5 inches*
 874 *(or the closest adjustable position greater than 13.5 inches). (O) Length of pull is*
 875 *defined as the distance between the front of the trigger and the rear of the buttstock.*

876
 877 **Rationale:** *The REPR's threshold length (40 inches) is based on the primary individual weapon*
 878 *in the infantry unit, the M16A4. The objective length of 36 inches is based on the length of the*
 879 *shortest available individual weapon in use in the infantry battalion, the M4 with stock extended.*

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(7) *Barrel Life:* $\geq 8,000$ rounds. A precision of fire of 1.0 MOA or less shall be maintained. (T) $\geq 15,000$ rounds. A precision of fire of 1.0 MOA or less shall be

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maintained. (O)

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Rationale: *The barrel life of the REPR shall be linked to maintaining a precision of fire of 1.0 MOA or less for 8,000 rounds (T). 15,000 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.*

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(8) *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)

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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 1.0 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.*

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(9) *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)

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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*

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926 to be lost, are a burden to the supply system, and would unnecessarily burden the operator with
 927 more weight and equipment. These requirements for assembly and disassembly reflect standards
 928 that are applicable to the REPR and were drawn from the Marine Corps Infantry Automatic
 929 Rifle, the Army Semi-Automatic Sniper System, and SOF's Precision Sniper Rifle standards.

930
 931 (10) *Trigger Pull*: Pull weight of no more than 4 pounds. (T) The REPR's trigger
 932 pull shall be operator adjustable and not require additional maintenance and inspections
 933 beyond routine operational level requirements. (O)

934
 935 **Rationale:** *The REPR's trigger pull should be light enough to allow for precise engagement, yet*
 936 *provide enough resistance to safely be employed in a combat environment. Further, the ability*
 937 *to adjust the trigger pull to individual shooter's preference will improve the operator's*
 938 *performance.*

939
 940 (11) *Recoil*: The REPR recoil energy should not exceed 18 foot pounds. (T) The
 941 REPR recoil energy shall not exceed 12 foot pounds. (O)

942
 943 **Rationale:** *The REPR shall reduce recoil of the weapon caused by discharging rounds, to*
 944 *maintain the operator's ability to maintain target acquisition through the optic and allow for*
 945 *more rounds on target in a multiple target and rapid precision engagement against hostile*
 946 *forces. These requirements for system recoil reflect the standards established for the Army*
 947 *Semi-Automatic Sniper System and SOF's Precision Sniper Rifle.*

948
 949 (12) *Rapid Target Acquisition/Recoil Management*: A trained sniper firing the REPR
 950 system shall engage an E-Type silhouette target (modified for the Marine Corps
 951 Marksmanship Program (MCMP) Table II showing head, chest, and pelvic girdle
 952 scoring areas) with 10 rounds in 1 minute at 300 meters. All shots must be placed
 953 inside the head/chest scoring areas. (T) A trained sniper firing the REPR system shall
 954 engage an E-Type silhouette target (modified for MCMP Table II showing head, chest,
 955 and pelvic girdle scoring areas) with 20 rounds in 1 minute at 300 meters. All shots
 956 must be placed inside the head/chest scoring areas. (O)

957
 958 **Rationale:** *For the REPR to be a successful weapon system in rapid precision engagement it is*
 959 *imperative that the operator be able to successfully engage targets with minimal interference*
 960 *from the operation of the rifle. Allowing the operator to "stay on the scope/stay on the gun,"*
 961 *while engaging multiple targets is a key quality the REPR system should incorporate in to its*
 962 *rapid target acquisition/recoil management. Further, this aligns the REPR's capability with the*
 963 *standards set forth in the Marine Corps Marksmanship Program (MCO 3574.2K, Task*
 964 *0300.M16.1009) under Table I's requirement to "engage targets at the sustained rate."*

965
 966 (13) *Hit Probability*: A fully trained and current sniper firing the REPR shall achieve 8
 967 out of 10 hits (80% probability) within 1.0 MOA at 800 meters firing 10 rounds in 10
 968 minutes or less on a "NRA Bulls-eye" target under nominal conditions. Nominal
 969 conditions are defined as 70 degrees F +/- 10 degrees and unlimited visibility during
 970 daylight. (T) A fully trained and current sniper firing the REPR shall achieve 8 out of
 971 10 hits (80% probability) within 1.0 MOA at 1000 meters firing 10 rounds in 10

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972 minutes or less on a "NRA Bulls-eye" target under nominal conditions. Nominal
 973 conditions are defined as 70 degrees F +/- 10 degrees and unlimited visibility during
 974 daylight. (O)

975
 976 **Rationale:** *The REPR shall have the ability to precisely engage targets at long range with a*
 977 *high probability of a first round lethal hit. This will enhance the operator's ability to carry out*
 978 *operations and inflict damage on enemy forces at longer ranges than current semi-automatic*
 979 *sniper rifles can achieve within the current inventory while augmenting the capabilities of the*
 980 *M40A3. These requirements for hit probability reflect the standards necessary for capability*
 981 *generation and were modified from established standards for the Army Semi-Automatic Sniper*
 982 *System and SOF's Precision Sniper Rifle.*

983
 984 (14) **Multiple Target Engagement:** The REPR shall be capable of engaging 3 E-Type
 985 Silhouette targets (modified for MCMP Table II showing head, chest, and pelvic girdle
 986 scoring areas) placed 10 feet apart with one shot a piece in the head or chest scoring
 987 area at 500 meters in 15 seconds or less. (T) The REPR shall be capable of engaging 3
 988 E-Type Silhouette targets (modified for MCMP Table II showing head, chest, and
 989 pelvic girdle scoring areas) placed 10 feet apart with one shot a piece in the head or
 990 chest scoring area at 800 meters in 15 seconds or less. (O)

991
 992 **Rationale:** *The REPR must not only be able to rapidly engage with precision, but also rapidly*
 993 *engage multiple targets. This is a necessary element as simply measuring precision fire and*
 994 *rapid fires do not take into account the ability to quickly move, re-orient, acquire, track, and*
 995 *engage more than one target. This capability is critical in urban or restrictive terrain where*
 996 *multiple fleeting targets may appear and disappear quickly. Ten feet of dispersion between*
 997 *targets was selected as an average distance that one may encounter enemy targets in a variety of*
 998 *settings. These requirements for multiple target engagement reflect the standards necessary for*
 999 *capability generation and were modified from established MCMP standards.*

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 1002 (15) **Safety:** The REPR shall have a safety mechanism that only allows the weapon to
 1003 be fired when the trigger is depressed and the safety is in a fire position. The 5th to 95th
 1004 percentile of shooters shall be able to manipulate the safety using the shooting hand and
 1005 without changing the firing grip. The safety shall be easy to operate under all
 1006 environmental conditions and operator dress, and shall be capable of ready status
 1007 verification (safe/fire) by both sight and touch. The REPR safety shall have a tactile
 1008 signature to the operator with minimal audible signature. (T) The REPR shall have a
 1009 safety mechanism that prevents the weapon from being fired when the trigger is
 1010 depressed with the safety in the "SAFE" position. The safety shall be manipulated
 1011 using the shooting hand and without changing the firing grip, easy to operate under all
 1012 environmental conditions and operator dress, and shall be capable of ready status
 1013 verification (safe/fire) by both sight and touch. The REPR shall allow for a round to be
 1014 carried in the chamber without applied stored energy. The REPR safety shall have zero
 1015 audible signature. (O)

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1017 **Rationale:** *The REPR shall have a minimum safety feature to ensure that the weapon does not*
 1018 *fire when the trigger is depressed with the safety in the "SAFE" position. The safety is essential*
 1019 *for the weapon system to ensure operator security and safety in combat operations. The safety*
 1020 *system should not encumber the operator from maintaining target acquisition, nor should it*
 1021 *compromise his position due to audible signatures of switching the weapon system from "SAFE"*
 1022 *to "FIRE."*

1023
 1024 (16) **Suppressor:** The REPR shall have a precision fire, high decibel reduction, quick
 1025 disconnect sound suppressor that shall reduce audible signal no less than 24db.
 1026 Accuracy should not be affected by a deviation greater than or equal to a 2 MOA shift
 1027 from weapon's original zero with a repeatability threshold of 1.0 MOA. The
 1028 sound/flash suppressor shall add no more than 10 inches to the length of the REPR.
 1029 The suppressor shall weigh no more than 38 ounces and be capable of being installed
 1030 and removed by the operator in the field with no tools. The attached sound suppressor
 1031 (when hot) shall have minimal degradation of the operator field of view with primary
 1032 optic and other visual augmentation systems due to heat mirage and come with a
 1033 mirage wrap if necessary. (T) The REPR shall have a precision fire, high decibel
 1034 reduction, quick disconnect sound suppressor that shall reduce audible signal no less
 1035 than 35db. Accuracy should not be affected by a deviation greater than or equal to a
 1036 1.0 MOA shift from weapon's original zero with a repeatability threshold of 0 MOA.
 1037 The sound/flash suppressor shall add no more than 8.5 inches to the length of the
 1038 REPR. The suppressor shall weigh no more than 24 ounces and be capable of being
 1039 installed and removed by the operator in the field with no tools. The attached sound
 1040 suppressor (when hot) shall have minimal degradation of the operator field of view with
 1041 primary optic and other visual augmentation systems due to heat mirage and come with
 1042 a mirage wrap if necessary. (O)

1043
 1044 **Rationale:** *The REPR shall incorporate a sound suppressor in order to allow the scout sniper to*
 1045 *stealthily engage multiple targets before the enemy becomes aware that he is under attack.*
 1046 *Further, by reducing the scout sniper's acoustic signature, the chance of the scout sniper's*
 1047 *shooting location being compromised is significantly reduced, which increases scout sniper*
 1048 *survivability. It is essential that the REPR be tested and evaluated with a suppressor as it is*
 1049 *projected to be used at least 80% of the time in this configuration. Due to this, barrel life,*
 1050 *precision, and reliability could be adversely affected. These requirements for a suppressor*
 1051 *reflect the standards necessary for capability generation and were modified from established*
 1052 *standards for the Army Semi-Automatic Sniper System and SOF's Precision Sniper Rifle.*

1053
 1054 (17) **Optics:** The REPR shall be compatible with all current scout sniper optics and
 1055 utilize the M8541 SSDS. (T = O)

1056
 1057 **Rationale:** *The REPR system shall incorporate the optics utilized within current inventory and*
 1058 *should support any upgrades to optic devices throughout the life-cycle of the REPR weapon*
 1059 *system*

1060
 1061 (18) **Magazine:** The REPR shall use a 20 round magazine that does not require special
 1062 tools to load. The magazine shall be able to be disassembled, cleaned, and reassembled

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1063 by the operator in field conditions. (T) The REPR shall use a magazine with more than
 1064 20 rounds that does not require special tools to load or adversely affect system
 1065 capabilities. The magazine shall be able to be disassembled, cleaned, and reassembled
 1066 by the operator in field conditions. (O)
 1067

1068 **Rationale:** *The magazine is an important component to the achievement of the REPR's primary*
 1069 *mission of rapid engagement. The capacity of the primary magazine must be sufficient to*
 1070 *support rapid engagement of multiple targets or of rapid defensive/offensive fires in break-*
 1071 *contact/ambush type scenarios where a premium is placed on a high volume of accurate fire.*
 1072 *Testing of the REPR with the magazines it shall be procured with is essential as past research*
 1073 *has demonstrated that magazines are a leading cause of weapon malfunctions that reduce*
 1074 *reliability. The threshold of 20 rounds is based on the amount of area (20) 7.62x51mm rounds*
 1075 *double stacked in a magazine require. This is currently an industry standard as any larger*
 1076 *magazines have tended to obstruct firing especially in the prone position by elevating the muzzle*
 1077 *of the weapon in an M-16 like configuration.*
 1078

1079 (19) *Reload Time:* The REPR shall be reloadable by a trained operator in the prone
 1080 position with a ready magazine in less than 5 seconds from the moment the magazine
 1081 release is activated to the resumption of firing. (T) The REPR shall be reloadable by a
 1082 trained operator in the prone position with a ready magazine in less than 3 seconds from
 1083 the moment the magazine release is activated to the resumption of firing. (O)
 1084

1085 **Rationale:** *Rapid engagement is an essential capability the REPR provides scout snipers.*
 1086 *Although 20 rounds immediately available in a filled magazine is significant, sustained heavy*
 1087 *combat, especially while in contact with enemy forces in close restrictive terrain, will require*
 1088 *rapid reloads. This is essential for maximum lethality as well as the survivability of the scout*
 1089 *sniper. The standard is measured from the prone position as this is the most likely and most*
 1090 *stable of doctrinal shooting positions for scout snipers as well as the most difficult firing position*
 1091 *in which to load an individual weapon.*
 1092

1093 (20) *Rail System:* The REPR shall have a modular MIL-STD-1913 quad forward rail
 1094 system that is integral to the upper receiver. The top rail shall have numbered rail slots.
 1095 The 12, 3, and 9 o'clock rails must be capable of maintaining sights zeros while
 1096 conducting routine firing combined with combat movement and operational training
 1097 drills. (T) The top rail shall have a 30-minute depreciation to allow for increased
 1098 usable range of SSDS. (O)
 1099

1100 **Rationale:** *The REPR shall maintain a MIL-STD-1913) flat top upper receiver with numbered*
 1101 *rail slots to support the number of available accessories that enhance the effectiveness of*
 1102 *individual weapons. The rail system shall be utilized to incorporate ancillary equipment such as*
 1103 *thermal devices, night optics, and other optical devices to enhance the accuracy and lethality of*
 1104 *the sniper. The threshold value for available accessory points is matched to the M16A4 service*
 1105 *rifle.*
 1106

1107 (21) *Ergonomic Enhancements:* The REPR should have an adjustable stock and
 1108 cheek-piece that shall accommodate shooter length of pull adjustments/optics

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1109 alignment. The adjustable stock shall accommodate cheek weld, stock weld, and eye
 1110 relief of the 5th-95th percentile of Marines. The stock must not interfere with the
 1111 charging handle or cycle of operations of the weapon in any configuration. (T) The
 1112 REPR shall have a folding/locking stock. The buttstock when folded shall not interfere
 1113 with the operation of the weapon. The stock shall be adjustable and have an adjustable
 1114 check-picce that shall accommodate shooter length of pull adjustments/optics
 1115 alignment. The adjustable stock shall accommodate cheek weld, stock weld, and eye
 1116 relief of the 5th-95th percentile of Marines. The stock must not interfere with the
 1117 charging handle or cycle of operations of the weapon in any configuration. (O)

1118
 1119 **Rationale:** *The REPR system shall incorporate ergonomic enhancements to increase the*
 1120 *lethality and precision capability of the operator. For the operator to perform at optimal*
 1121 *performance it is mission critical that the stock of the weapon system be adjustable to various*
 1122 *operational environments.*

1123
 1124 (22) **Forward Assist:** The REPR shall include a forward assist. (T = O)

1125
 1126 **Rationale:** *The REPR shall incorporate a forward assist to ensure that proper functioning of the*
 1127 *weapon system is maintained in operations. Previous semi-automatic sniper rifles have*
 1128 *disregarded this function and have led to serious maintenance issues that could have led to or*
 1129 *caused mission critical maintenance problems.*

1130
 1131 (23) **Brass Deflector:** The REPR shall incorporate a brass deflector. (T = O)

1132
 1133 **Rationale:** *The REPR shall incorporate a brass deflector to ensure proper functioning of the*
 1134 *semi-automatic fire used by the weapon system. The brass deflector will ensure operator safety*
 1135 *during operations and discharging of the weapon system.*

1136
 1137 **6.2. ADDITIONAL ATTRIBUTES**

1138 **Table 7. 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 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 =	The deployment and cleaning kits shall include all tools required for operator and organizational-level maintenance. The REPR shall be equipped with a deployment 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

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Additional Attributes	Threshold	Objective
	O)	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 shall 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 shall 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)

1139

1140 **7. FOS AND SOS SYNCHRONIZATION**

1141 a. Relationship of this system to other systems contributing to this capability: The Scout Sniper
 1142 ICD is supported by the addition of the REPR CPD. The REPR shall support this by providing a
 1143 long range semi-automatic precision capability for scout snipers. This solves one of the two
 1144 critical materiel gaps identified by the Scout Sniper ICD.

1145 b. The REPR shall support the MERS ICD. The REPR provides additional firepower (lethal and
 1146 precise) to scout snipers supporting the infantry squad in the offense and defense.

1147 c. The REPR also complements the Army's Soldier as a System (SaaS) ICD- Lethality. The
 1148 SaaS must provide individual Soldiers the capability to detect, identify, and kill - or achieve

1149 desired effects against - selected targets throughout the full spectrum of military operations,
 1150 under all climatic conditions, and in all operational environments. SaaS must provide lethal and
 1151 non-lethal capabilities to accomplish those tasks. In the world of joint operations across the
 1152 ROMO, the REPR shall support the Army to this effect.

1153 **Table 8. 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):	Complements 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)
Marine Expeditionary Rifle Squad ICD:	Provides a weapon platform that offers 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)

1154

1155 **8. INFORMATION TECHNOLOGY SYSTEM AND NATIONAL SECURITY**
1156 **SYSTEMS (IT AND NSS) SUPPORTABILITY**

1157 Not applicable. This capability does not have a requirement to collect or transmit information.

1158 **9. INTELLIGENCE SUPPORTABILITY**

1159 Not applicable. This capability will not require the production, consumption, processing, or
1160 handling of intelligence data.

1161 **10. ELECTROMAGNETIC ENVIRONMENTAL EFFECTS (E3) AND SPECTRUM**
1162 **SUPPORTABILITY**

1163 The REPR shall be capable of operating in an electromagnetic rich battlefield and does not
1164 require hardening against the effects of an electromagnetic pulse. This includes not initiating
1165 interference with other electronic equipment worn or used by the war-fighter as well as not being
1166 affected when operated in proximity to other equipment.

1167 **11. TECHNOLOGY READINESS**

1168 No Technology Readiness Assessment (TRA) has been conducted for the system in its entirety
1169 as the REPR will be procured as a COTS NDI. Component items such as the SSDS and
1170 SSMRNS are currently fielded items and will not require any other TRAs. Nearly all of the
1171 technology used in the required system has been demonstrated to be mature in relevant
1172 operational environments. The Semi-Automatic Sniper Rifle (SASS) fielded by the U.S. Army
1173 and the MK11 MOD1 purchased to support immediate OIF and OEF needs by SOF and the
1174 USMC validate the maturity of this technology in a man portable weapon system. Further, the
1175 technologies required for the REPR will provide an affordable increment of capability and are
1176 producible at an acceptable cost and production rate. In summary, because of the maturity of the
1177 technologies being used in the system, no independent TRA is planned for the program.

1178 **11.1. CRITICAL TECHNOLOGY ELEMENTS**

1179 A technology is "critical" if the system being acquired depends on this technology to meet
1180 capability thresholds. This technology must meet acceptable developmental costs and schedules
1181 as well as support acceptable production and operation costs if the technology or its application
1182 is either new or novel. As none of the technologies being employed by the REPR are new or
1183 novel, there are no critical technology elements in the system.

1184 **11.2. MANUFACTURING READINESS**

1185 The DoD has developed Manufacturing Readiness Levels (MRLs) in order to support
1186 assessments of the maturity of the design, related materiel, tooling, test equipment,
1187 manufacturing processes, quality and reliability levels, and key characteristics necessary for
1188 producible and reliable products. MRL definitions are based on the integration of existing
1189 industry, government agency, and technical coalition standards and recommendations to address
1190 producibility concerns earlier in the development phase (e.g., Engineering and Manufacturing
1191 Readiness Levels the Milestone Decision Authority (MDA) uses).

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1192 While minor design changes may still occur on behalf of industry in its efforts to tailor COTS
 1193 technology to meet the specific requirements directed by this CPD in the REPR, it has been
 1194 established that no significant manufacturing risk exists and that industrial capabilities are
 1195 reasonably available. Each potential REPR system submitted by industry during a full and open
 1196 competition shall be tested and evaluated for technical manufacturing feasibility and military
 1197 utility. All technologies, processes, concepts, and end items shall be further evaluated to reduce
 1198 manufacturing risk and demonstrate producibility prior to procurement and full-rate production.
 1199 Critical manufacturing processes have been initially demonstrated for the relevant environments
 1200 using generally mature processes and tooling.

1201 **12. ASSETS REQUIRED TO ACHIEVE FULL OPERATIONAL CAPABILITY**

1202 Full Operational Capability (FOC) for the REPR will be achieved when the following units have
 1203 been issued their full allocation as depicted in the table below.

1204 **Table 9. 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
1 st Recon	4 platoons, 1 rifle per team	48
2 nd Recon	4 platoons, 1 rifle per team	48
3 rd Recon	Supported by TOECR Distant Co 27 and Deep Co 9	36
4 th Recon	4 platoons, 1 rifle per team	45
3 rd Force	4 rifles per company	12
4 th 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
HQ Co HQBN, 1 st MARDIV	Supports MP Unit	2
HQ Spt Bn CLNC	Supports MP Unit	2
HQ Co, HQBN, 2 nd MARDIV	Supports MP Unit	2
DMFA	Provided	79
WRMR	Provided	110
	Total	989

1205

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1206 **13. SCHEDULE AND INITIAL OPERATIONAL CAPABILITY (IOC) / FOC**
 1207 **DEFINITIONS**

1208 **13.1. INITIAL OPERATIONAL CAPABILITY**

1209 The desired IOC is by the end of the second quarter of FY09. IOC will be attained when the
 1210 REPR systems attain the following conditions:

- 1211 • Marine Corps Training and Education Command (TECOM) and the Scout Sniper School
 1212 have updated and formalized the program of instruction (POI) to reflect adequate training
 1213 on the operation and effective employment of the REPR;
- 1214 • The Scout Sniper Schools, including Special Operations Training Group (SOTG),
 1215 Mountain Warfare Training Center (MWTC), and Marine Air-Ground Task
 1216 Force/Combined Arms Exercise (MAGTF/CAX) have their full allocation of weapon
 1217 systems with all training and field manuals;
- 1218 • The Scout Sniper Schools have all necessary maintenance personnel trained with an
 1219 adequate quantity of applicable consumable supplies and repair parts on-hand;
- 1220 • Effective supplies of applicable ammunition Department of Defense Identification Codes
 1221 (DODICs) are on hand across the supply system to support full operational capability;
- 1222 • When approximately 25% or 249 weapon systems have been fully fielded. [Nine
 1223 Battalions will receive eight weapons a piece, recon will receive eight, force recon will
 1224 receive 12, all the scout sniper schools including SOTG and MWTC will receive their
 1225 full allotment of 140, the MAGTF (CAX) will receive two, and Aberdeen and Marine
 1226 Corps Systems Command (MCSC) will their full allotment of (15)];
- 1227 • Maintenance technicians / armorers have been trained and equipped with an adequate
 1228 supply of spare parts, consumables, and any specialized tools; and
- 1229 • The supply system is capable of responding in a timely manner to additional REPR
 1230 needs.

1231 An IOC will be achieved when approximately 25% or 249 weapon systems have been fully
 1232 fielded. [Nine Battalions will receive eight weapons a piece, recon will receive eight, force
 1233 recon will receive 12, all the scout sniper schools including SOTG and MWTC will receive their
 1234 full allotment of 140, the MAGTF CAX will receive two, and Aberdeen and MCSC will their
 1235 full allotment of 15]. Further, this weapon system shall first be fully fielded to the school houses
 1236 before the operational forces are delivered theirs. This will prevent unnecessary and costly
 1237 damage to the systems as a result of use by untrained / poorly trained operators as well as failure
 1238 during operations as a result of incorrect employment or maintenance again by untrained / poorly
 1239 trained operators.

1241 **13.2. FULL OPERATIONAL CAPABILITY**

1242 FOC will be attained when:

- 1243 • All Marine Units having an authorization in the above table have been 100% supplied;

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- 1244 • The REPR is fully integrated into the force structure; and
- 1245 • All spares and supply inventories are in place (including Depot Maintenance Afloat
- 1246 Allowance (DMFA) and War Reserve Materiel Requirement (WRMR).

1247 The desired FOC is the end of the 4th Quarter of FY09.

1248 Marine Corps wide, a total of 989 REPR weapon systems will be fielded to achieve a FOC,
 1249 which is based on providing each Marine Corps unit their full table of equipment (T/E) of sniper
 1250 weapons based on current tables of organization (T/O). This FOC mirrors the current FOC for
 1251 the M40A3, which directly correlates to what units are issued. Of the total 989, 19% will go to
 1252 the DMFA and the WRMR for a total of 189 weapon systems. The rest, 81% (total of 800
 1253 weapon systems) will be fielded with the operational forces and school houses. The fielded
 1254 weapons shall be in a full operational or “up” status continuously throughout their estimated
 1255 20,000-30,000 round life span except for routine operator maintenance and Military
 1256 Occupational Specialty (MOS) 2111 safety and maintenance inspections. This assumes that
 1257 MOS 2111’s are fully trained on the system and that a full supply of parts and spares will be
 1258 available in the supply inventories at all echelons of maintenance and that forward operational
 1259 units will deploy with a full parts block. From initial fielding to reaching FOC it shall take no
 1260 more than 12 months (Threshold) / 6 months (Objective).

1261

1262 **13.3. SCHEDULE**

1263 **Table 10. 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

1264

1265 **14. OTHER DOTMLPF AND POLICY CONSIDERATIONS**

1266 **14.1. DOCTRINE**

1267 The REPR shall provide enhanced firepower and lethality to a scout sniper team. For optimized
 1268 effective employment, TECOM, in conjunction with the Scout Sniper School, must review and
 1269 re-evaluate team employment and equipment requirements.

1270 **14.2. ORGANIZATION**

1271 No change to organization.

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1272 **14.3. TRAINING**

1273 (1) System Training Plan shall be developed by appropriate Marine Corps authority.

1274 (2) New Equipment Training (NET): Contractors, under the oversight of TECOM and MCSC
 1275 will conduct NET using a “train-the-trainer” concept. Training will focus on the functional
 1276 performance and new training strategies associated with the REPR. The program will qualify all
 1277 operators and maintainers in the field. NET will continue until all units have been fielded.
 1278 Training Support Packages (TSPs) will be provided to the unit during NET for unit sustainment
 1279 training.

1280 (3) Specific Training in the Institutional Training Base: The Scout Sniper School, Quantico is
 1281 the parent school for Sniper training inside the USMC. Institutional training will be conducted
 1282 here as well as across the other USMC Scout Sniper Schools to provide the USMC and other
 1283 select individuals from across the Joint Services and agencies with qualified Snipers. The
 1284 USMC Scout Sniper School POI will be modified by USMC scout sniper SMEs and approved by
 1285 TECOM to address the enhanced capabilities of the REPR. The USMC scout sniper POI will be
 1286 restructured to reflect the addition of the REPR capabilities into the scout sniper area of
 1287 operations. The POI addition will effectively outline guidelines for evaluation of the scout
 1288 snipers ability to employ the system in a target rich environment under all military operational
 1289 environments and conditions. The SME and training developers will use the information and
 1290 knowledge gained from the testing and evaluation phases during source selection as the basis for
 1291 modifying the TSP, training POI, and employment doctrine. MOS 2111 producing schools shall
 1292 also incorporate the REPR into its POI.

1293 (4) Operation and Maintenance: All weapons shall come with operator/maintenance manuals
 1294 that detail all procedures to include zeroing of accessories. The program office will provide all
 1295 applicable training, manuals, guidance, and other logistics support. Overall design of the REPR
 1296 shall promote ease of maintenance through easy accessibility of assemblies and subassemblies
 1297 for servicing, maintenance, removal, and replacement.

1298 **14.4. MATERIEL**

1299 Additional materiel required include inspection gauges, test equipment, and special tools as
 1300 defined by the system. The capability set must take into consideration the extreme climate
 1301 design types which a Marine may operate within.

1302 **14.5. LEADERSHIP AND EDUCATION**

1303 Proper leadership and education will maximize the capability enhancing effects of the REPR.
 1304 The M40A3 even with proper leadership and education can not provide the capabilities of the
 1305 REPR due to materiel limitations. The integration of the REPR into the school house curriculum
 1306 for maintenance, repair, operation, and employment will be required.

1307 **14.6. PERSONNEL**

1308 Current MOS and skill level standards adequately support the doctrinal and TTP employment of
 1309 scout snipers. No additional MOSs or increases in the number of MOSs employing sniper
 1310 systems are needed. The REPR will be employed under the same doctrinal principles currently
 1311 in use by trained scout sniper team personnel.

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1312 **14.7. FACILITIES**

1313 No additional facilities are anticipated to store or support training with the REPR. Current
 1314 armories may, however, require fabrication or modification of weapons racks to best support the
 1315 safe and secure storage of the weapon systems. Ranges being utilized for training of scout
 1316 snipers are adequate to support this system however, school houses and parent units may choose
 1317 to invest in rapid engagement pop-up style targets to enhance training on the expanded
 1318 capabilities this system provides (rapid precision fire).

1319 **15. OTHER SYSTEM ATTRIBUTES**1320 **15.1. CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR (CBRN) CONTAMINATION**
 1321 **SURVIVABILITY (CBRNCS)**

1322 The REPR system is mission critical. The equipment will survive the initial nuclear effects of
 1323 blast, thermal and initial nuclear radiation to the same levels where 50% of the personnel
 1324 available to operate them survives the nuclear effects in accordance with Standardization
 1325 Agreement (STANAG) 4145/AEP-4 (Threshold).

1326 ***Rationale:** All front line combat systems such as tanks, howitzers, armored personnel carriers,
 1327 etc., must be survivable against all initial nuclear weapons effects (INWE) at the levels where a
 1328 combat effective percentage of the crew survives. Therefore, because the Marine as a system is
 1329 considered a front line mission critical combat system, the REPR should address survivability of
 1330 all INWE as threshold requirements.*

1331 **15.2. NUCLEAR, BIOLOGICAL, AND CHEMICAL CONTAMINATION SURVIVABILITY (NBCCS)**

1332 The REPR system is mission critical. The equipment shall be capable of operations in an NBC
 1333 contaminated environment. The system shall be able to withstand the materiel-damaging effects
 1334 of NBC contaminants and decontaminants; be able to be decontaminated to negligible risk levels
 1335 to reduce hazards to Marines operating and maintaining it; and be able to be operated, and
 1336 maintained by Marines wearing full NBC protective ensemble (Mission-Oriented Protective
 1337 Posture (MOPP) 4), as prescribed in Department of the Army Approved NBC Criteria for Army
 1338 Materiel, 12 Aug 91. (T=O)

1339 ***Rationale:** AR 70-75 requires all mission critical equipment to be NBC Contamination
 1340 Survivable. The cited reference provides specific criteria levels to meet NBCCS survivability
 1341 requirements*

1342
 1343 **15.3. CLIMATIC CONDITIONS**

1344 The REPR must be operational and maintainable in all types of climate and terrain to which U.S.
 1345 forces deploy or are stationed. The REPR must be capable of operating during full exposure to
 1346 temperatures ranging from minus 25 degrees Fahrenheit (F) to 160 degrees F. The REPR must
 1347 operate in all weather conditions, to include salt fog. The REPR shall have no unique weather,
 1348 oceanographic or astro-geophysical support requirements.

1349 **15.4. EMBEDDED INSTRUMENTATION**

1350 There are no anticipated requirements for embedded instrumentation.

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1351 **15.5. AIRDROP OPERATIONS**

1352 The REPR shall be rugged enough such that it is not adversely affected by all approved airdrop
 1353 operations.

1354 **15.6. MARINE SURVIVABILITY**

1355 The REPR shall not have any unique signatures that allow detection by hostile forces.

1356 **15.7. MAINTENANCE PLANNING**

1357 The REPR shall be designed to facilitate ease of maintenance. The REPR will be maintained
 1358 under three echelons of maintenance – operator (individual), organizational (unit), and
 1359 intermediate (manufacturer or MOS 2112 precision armorer) echelons. Operator maintenance
 1360 will consist primarily of day to day maintenance and inspection. Organizational maintenance
 1361 will consist of those repairs conducted by an MOS 2111 at the unit level whether deployed or in
 1362 garrison with the expectation that the system will not leave the parent unit and will be returned
 1363 promptly to the user. Intermediate level maintenance will consist of those repairs conducted by
 1364 an MOS 2112 precision armorer or ones that require the REPR to be returned to the supply
 1365 system or manufacturer for extensive upgrades, repairs, inspections, or overhauls. Interim
 1366 Contractor Logistics Support (ICLS) may be considered as an alternative for both deployed unit
 1367 and depot level maintenance. Supply support will be provided by the most effective method
 1368 available. If applicable, ICLS supply and maintenance transactions and documentation will
 1369 interface with Standard Army Management Information System (STAMIS). Actual maintenance
 1370 levels and tasks will be determined through the Supportability Analysis (SA) process. The
 1371 REPR system will not require a new logistics system or new MOSs for maintenance personnel.
 1372 All weapons will come with operator/maintenance manuals that detail all procedures to include
 1373 zeroing of accessories. The program office will provide all applicable training, manuals,
 1374 guidance, and other logistics support. Overall design of the REPR shall promote ease of
 1375 maintenance through easy accessibility of assemblies and subassemblies for servicing,
 1376 maintenance, removal, and replacement.

1377 Maintenance Man-Hour Requirement / Maintenance Manpower Support. Each REPR will not
 1378 require maintenance manpower support from the Marine Corps Table of Organization and
 1379 Equipment (TOE) maintainers in excess of 3.8 Direct Productive Maintenance Man-Hours
 1380 (DPAMMH) at the operational level of support. The REPR will not require maintenance
 1381 manpower in excess of that which is authorized on an annual basis for repair of the current
 1382 M40A3 Sniper Weapon System, which the REPR will augment.

1383 **15.8. HUMAN SYSTEMS INTEGRATION / MANPOWER AND PERSONNEL INTEGRATION**
 1384 **(MANPRINT)**

1385 (1) Environmental Compliance Requirement. The user of the REPR shall have the ability to
 1386 field, train, deploy, operate, maintain, and dispose of the system in full compliance with
 1387 applicable U.S., foreign and international environmental laws and regulations. The design,
 1388 production, operation, maintenance, and disposal of the system shall eliminate, or minimize, to
 1389 the greatest extent possible, the use of hazardous materials, generation of hazardous wastes, and
 1390 potential for adverse environmental impacts.

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1391 (2) Human Factors Engineering. The REPR shall be designed for use by the 5th to 95th stature
1392 percentile target audience Marine. Sound human engineering principles will be used in system
1393 design to ensure that target audience, Marines (operators and maintainers), are capable of
1394 performing required tasks with 95 percent reliability and accuracy to ensure optimal total system
1395 performance. Human capabilities and limitations shall be incorporated into system definition,
1396 design, development, and evaluation.

1397 (3) Training. The instruction and resources required providing the Marine and maintainer with
1398 knowledge, skills, and abilities to properly operate, maintain, and support systems shall not be
1399 significantly increased as a result of the introduction of the REPR.

1400 (4) System Safety. The REPR design and operational characteristics shall minimize the
1401 possibilities for accidents or mishaps caused by human error or system failure.

1402 (5) Health Hazards. Through the systematic application of biomedical knowledge to identify,
1403 assess, and minimize health hazards associated with the system's operation, maintenance, repair
1404 or storage, the REPR shall not present any uncontrolled health hazards to the operator or
1405 maintainer through its service lifetime.

1406 (6) Marine Survivability. The REPR will have a positive effect on the overall survivability of
1407 the individual combat Marine by providing a more capable system to augment the existing
1408 M40A3. The sniper survivability on the battlefield is increased through precision rapid fire that
1409 is sound and flash suppressed.

1410 **15.9. TRANSPORTABILITY AND STORAGE**

1411 The REPR system shall be capable of deploying by air, land, and sea on standard military craft,
1412 vessels, and vehicles. The REPR shall withstand the effects of salt spray, salt fog, and fungi as
1413 well as temperatures and altitudes associated with military storage and transportation without
1414 degrading system reliability and without requiring preventive maintenance higher than the
1415 operator level.

1416 **16. PROGRAM AFFORDABILITY**

1417 Research Development Testing and Evaluation costs are driven primarily by the projected
1418 expenditure of at least 15,000 rounds per weapon during testing and evaluation as well as
1419 procurement of the systems to test.

1420 Procurement, Marine Corps cost is driven primarily by the unit cost of each weapon and
1421 ammunition. Total procurement of at least 989 weapon systems for FOC was used as a baseline
1422 for costing although 800 weapon systems were used to baseline ammunition expenditures for
1423 "fielded" weapons. This is based on FOC minus the number of weapons stocked as spares and
1424 war reserves (189). An estimate of 2,000 rounds of training ammunition per fielded weapon per
1425 year was the major ammunition cost driver.

1426

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1427 Operations and Maintenance, Marine Corps cost was driven primarily by sustainment overhauls.
 1428 The estimate was based on a projected replacement of the weapons' upper receiver every five
 1429 years at school houses and every ten years for the remaining fielded weapons. Cost of overhaul
 1430 was estimated at 60% of the unit cost of the weapon. Consumables and program management
 1431 were also drivers, but were of a minimal impact compared to the overall cost of sustainment
 1432 overhauls.

1433 There is an increased cost related to the total munitions requirement. This increase of ~1.6
 1434 million rounds per year will result in an additional cost of ~\$1.136 million in PAN&MC funding.
 1435 These numbers are based on providing 2000 training rounds for each of the fielded 800 rifles at
 1436 ~\$.71 per round.

1437 **Table 11. Program Cost**
 Base Year (FY 2008 \$K)

Item	Objective	Threshold
RDT&E	\$533.8	\$561.5
PMC	\$23,121.1	\$26,181.8
O&MMC	\$4,946.1	\$6,989.9
PAN&MC	\$1,136.0	\$1,136.0
Total	\$29,737.0	\$24,869.2

Average Prototype Unit Cost (FY 2008 \$K)

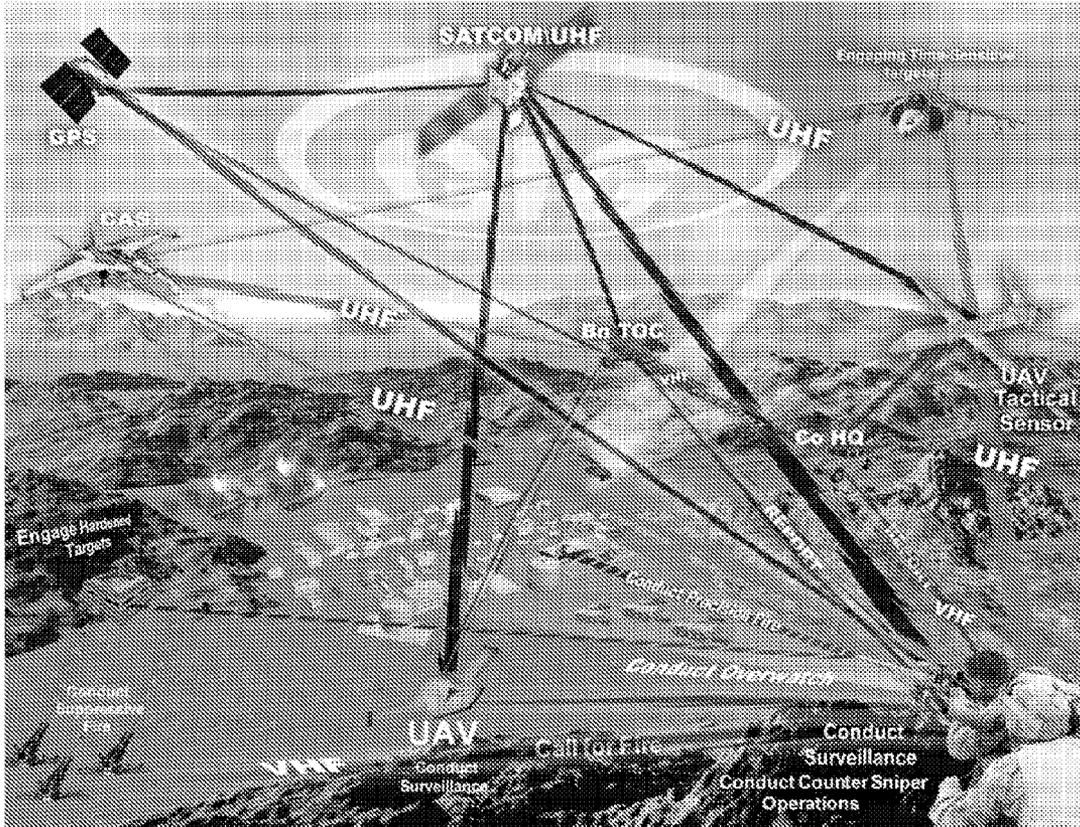
Item	Objective	Threshold
REPR Weapon System	\$5.9	\$9.1

1438
 1439 * with Optic (SSDS)

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1440 APPENDIX A - MANDATORY ARCHITECTURE FRAMEWORK



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*OV-1 Depicts overarching scout sniper capability. REPR shall 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	Capabilities Development Directorate
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
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, Materiel, Leadership and Education, Personnel, Facilities
DPAMMH	Direct Productive Maintenance Man-Hours
DVD	Direct Vendor Delivery
EMW	Expeditionary Maneuver Warfare
FAA	Functional Area Analysis
F MID	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
LRIP	Low Rate Initial Production
MAGTF	Marine Air-Ground Task Force
MANPRINT	Manpower and Personnel Integration
MARSOC	Marine Special Operations Command

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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
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

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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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1546 APPENDIX D - CAPABILITY DESCRIPTION TABLE

Priority	Gap	Key Characteristics	Description	Tier 1 & Tier 2 JOAs	Parameters	Minimum Value
1	Lack professional 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 Land 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 Land 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 communications 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 Land 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 Land Operations, Joint Battlespace Awareness, Joint Force Generation, Tier 2: Observation & Collection, TECHINT, 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 Land 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 and 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/Noncombatants, 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, Conduct 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, Lethal	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, Lethal	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, Eduxtle, 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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